



# Reliability Report

**Report Title:** LT3922-1 Die Revision H Automotive

**Grade 0 Qualification** 

**Report Number: 19584** 

**Revision:** A

Date: 13 January 2023



### **Summary**

This report documents the successful completion of the automotive reliability qualification requirements for the release of the LT3922-1 product in a 28-LFCSP package. The LT3922-1 is a monolithic, synchronous, step-up DC/DC converter that utilizes fixed-frequency, peak current control and provides PWM dimming for a string of LED's.

### **Die/Fab Product Characteristics**

Table 1: Die/Fab Product Characteristics- 0.35µm DMOS

Product Characteristics	Product(s) to be qualified	F	Product(s) used fo	r Substitution Dat	a
Generic/Root Part #	LT3922-1	LT3922-1	LTC7060	LT8365	LT8374
Operating Temperature	-40°C to +150°C	-40°C to +150°C	-40°C to +150°C	-40°C to +150°C	-40°C to +150°C
Die Id	8VL3922-1XV	8VL3922-1XV	8VL7060XV	8VL8365XV	8VL8374XV
Die Size (mm)	1.74 x 2.88	1.74 x 2.88	1.56 x 2.35	1.28 x 2.85	1.79 x 1.94
Wafer Fabrication Site	Vanguard	Vanguard	Vanguard	Vanguard	Vanguard
Wafer Fabrication Process	0.35μm DMOS	0.35μm DMOS	0.35μm DMOS	0.35μm DMOS	0.35μm DMOS
Die Substrate	Si	Si	Si	Si	Si
Metallization / # Layers	AlCu / 3	AlCu / 3	AlCu / 3	AlCu / 3	AlCu / 4
Polyimide	No	No	No	No	No
Passivation	undoped-oxide/SiN	undoped-oxide/SiN	undoped-oxide/SiN	undoped-oxide/SiN	undoped-oxide/SiN



# **Die/Fab Test Results**

Table 2: Die/Fab Test Results - 0.35µm DMOS at Vanguard-Taiwan

	AEC		results 0.00µm D	Generic/Root			eTest
Test Name	#	Spec	Conditions	Part #	Lot #	Fail/SS	Temp
	#			rait#	047224 45154	0/147	
					Q17324.1ELF1	0/147	RH
					Q17324.1ELF2	0/147	RH
				LT8300	Q17324.1ELF3	0/147	RH
					Q17324.1ELF4	0/147	RH
		AEC-Q100-			Q17324.1ELF5	0/147	RH
Early Life Failure Rate (ELFR)	В2	008	Ta=150°C, 48 Hours		Q17324.1ELF6	0/147	RH
		000			Q14979.1ELFR	0/800	RH
				LT8365	Q14979.2ELFR	0/800	RH
					Q14979.ELFR	0/800	RH
				LT8390	Q16133.1ELFR	0/800	RH
				LT8648S	EO9353.ELFR	0/800	RH
				LT8374	Q17806.1HTOL	0/77	RHC
					Q16133.1HTOL	0/77	RHC
				LT8390	Q16133.2.HTOL	0/77	RHC
					Q16133.3HTOL	0/77	RHC
				LT8390A	Q17879.1HTOL	0/77	RCH
High Temperature Operating	54	150000 4400	Ta=150°C, Biased,	LT8391D	Q17987.1HTOL	0/77	RCH
Life (HTOL)	B1	JESD22-A108	1,000 Hours	LT8648S	EO9459L.HTOL	0/77	RHC
				1.707060	Q16176.2HTOL	0/77	RHC
				LTC7060	Q16176.3HTOL	0/77	RHC
				LTC7804	Q16620.1HTOL.1	0/77	RCH
				1.707040	EO9477L.HTOL	0/77	RHC
				LTC7818	EO9507L.HTOL	0/77	RHC
					Q16133.1HTS	0/45	RH
High Temperature Storage	4.5	IECD 22 4402	450% 2.000	LT8390	Q17464.1HTS	0/45	RH
Life (HTSL)	A6	JESD22-A103	150°C, 2,000 Hours		Q19204.2HTS	0/45	RH
				LT8648S	EO9353F.HTS	0/45	RH



Test Name	AEC #	Spec	Conditions	Generic/Root Part #	Lot #	Fail/SS	eTest Temp
				LT3922-1	EO9449K.BHAST	0/77	RH
					EO9534K.BHAST	0/77	RH
			130°C 85%RH 33.3 psia,	LT8365	EO9535K.BHAST	0/77	RH
			Biased, 96 Hours	LT8374	Q17806.2BHAST	0/77	RH
Highly Accelerated				LT8390	Q17464.1BHAST	0/77	RH
Temperature and Humidity	A2	JESD22-A110		LTC7818	EO9507K.BHAST	0/77	RH
Stress Test (HAST) <sup>1</sup>					EO9373K.BHAST	0/77	RH
			130°C 85%RH 33.3 psia,	LTC7060	EO9394K.BHAST	0/77	RH
			Biased, 192 Hours	LT8300	Q17324.1BHAST	0/77	RH
				LT8390	Q19204.2BHAST	0/77	RH
Highly Accelerated  Temperature and Humidity  Stress Test (HAST) <sup>2</sup>	A2	JESD22-A110	130°C 85%RH 33.3 psia, Biased, 192 Hours	LT8648S	EO9237K.BHAST	0/77	RH

These samples were subjected to preconditioning at MSL 1 with 3x reflow peak temp of 260°C prior to the start of the stress test.

<sup>&</sup>lt;sup>2</sup> These samples were subjected to preconditioning at MSL 3 with 3x reflow peak temp of 260°C prior to the start of the stress test.



# Package/Assembly Product Characteristics

Table 3: Package/Assembly Product Characteristics – LFCSP/LFCSP\_SS at UTAC

Product Characteristics	Product(s) to be qualified		Product(s) used fo	r Substitution Data	
Generic/Root Part #	LT3922-1	LT3922-1	LT8708	LTC3859AL	LTC7802
Package	28-LFCSP	28-LFCSP	40-LFCSP	38-LFCSP	28-LFCSP_SS
Body Size (mm)	4.00 x 5.00 x 0.75	4.00 x 5.00 x 0.75	5.00 x 8.00 x 0.75	5.00 x 7.00 x 0.75	4.00 x 5.00 x 0.75
Assembly Location	UTAC	UTAC	UTAC	UTAC	UTAC
MSL/Peak Reflow Temperature(°C)	1/260°C	1/260°C	1 / 260°C	1 / 260°C	1 / 260°C
Mold Compound	Sumitomo G770HCD	Sumitomo G770HCD	Sumitomo G770HCD	Sumitomo G770HCD	Sumitomo G770HCD
Die Attach	Ablestik 8200T	Ablestik 8200T	Ablestik 8200T	Ablestik 8200T	Ablestik 8200T
Leadframe Material	EFTEC C64T	EFTEC C64T	EFTEC C64T	Copper Alloy 194	Copper Alloy 194
Lead Finish	100Sn	100Sn	100Sn	100Sn	100Sn
Wire Bond  Material/Diameter  (mils)	Gold GMG / 1.30	Gold GMG / 1.30	Gold GMG / 1.0	Gold GPG / 1.0	Gold GPG / 1.0



# Package/Assembly Test Results

Table 4: Package/Assembly Test Results – LFCSP/LFCSP\_SS at UTAC

Test Name	AEC #	Spec	Conditions	Generic/Root Part #	Lot #	Fail/SS	eTest Temp
					Z47431.JPCT	0/77	R
				LT8708	Z47929.JPCT	0/77	R
Autoclave (AC) <sup>1</sup>	А3	JESD22-A102	121°C 100%RH 33.3		Z48058.JPCT	0/77	R
			psia, 168 Hours	172022.4	EO9329A.PCT	0/77	R
				LT3922-1	EO9449A.PCT	0/77	R
High Tanamanatura Chanaga				LTC3859AL	Z51545.HTS	0/45	RH
High Temperature Storage  Life (HTSL)	A6	JESD22-A103	150°C, 2,000 Hours	LTC7801	Z52429.HTS	0/45	RH
Life (HTSL)				LT3922-1	EO9329F.HTS	0/45	RH
					Z51542.JHAST	0/77	RH
				LTC3859AL	Z51545.JHAST	0/77	RH
					Z51778.1a.JHAST	0/77	RH
Highly Accelerated			120% 050/011 22 2	LTC7801	Z52452.1a.JHAST	0/77	RH
Temperature and Humidity	A2	JESD22-A110	130°C 85%RH 33.3		Z47431.JHAST	0/77	RH
Stress Test (HAST) 1			psia, Biased, 96 Hours	LT8708	Z47929.JHAST	0/77	RH
					Z48058.JHAST	0/77	RH
				LT2022 4	EO9329K.BHAST	0/77	RH
				LT3922-1	EO9449K.BHAST	0/77	RH
					Z51542.JTC	0/77	RH
				LTC3859AL	Z51545.JTC	0/77	RH
					Z51778.1a.JTC	0/77	RH
Tanana mahana Carlina (TC)1		IECD22 A404	-65°C/+150°C, 2,000	1.707004	Z52439.2a.JTC	0/77	RH
Temperature Cycling (TC) <sup>1</sup>	A4	JESD22-A104	Cycles	LTC7801	Z52452.1a.JTC	0/77	RH
				LT8708	Z48058.JTC	0/77	RH
				LT2022 4	EO9329B.TC	0/77	RH
				LT3922-1	EO9449B.TC	0/77	RH
Post-TCT Wire Bond Pull	C2	MIL-STD-883 METHOD 2011	NA	LT8390	Q17464.1WBP	5	NA
					Z51542.JUHAST	0/77	R
Unbiased HAST (UHST) <sup>1</sup>	А3	JESD22-A118	130°C 85%RH 33.3	LTC3859AL	Z51545.JUHAST	0/77	R
			psia, 96 Hours		Z51778.1a.JUHAST	0/77	R



Test Name	AEC #	Spec	Conditions	Generic/Root Part #	Lot #	Fail/SS	eTest Temp
Unbiased HAST (UHST) <sup>1</sup>	А3	JESD22-A118	130°C 85%RH 33.3 psia, 96 Hours	LTC7801	Z52439.2a.JUHAST	0/77	R
High Temperature Storage  Life (HTSL)	A6	JESD22-A103	150°C, 2,000 Hours	LTC7802	Q17135.1HTS	0/50	RH
Highly Accelerated  Temperature and Humidity  Stress Test (HAST) <sup>1</sup>	A2	JESD22-A110	130°C 85%RH 33.3 psia, Biased, 96 Hours	LTC7806	Q17142.1PC.BHAST	0/77	RH
Temperature Cycling (TC) <sup>1</sup>	A4	JESD22-A104	-65°C/+150°C, 2,000 Cycles	LTC7802	Q17135.1TC	0/77	RH
Unbiased HAST (UHST) <sup>1</sup>	А3	JESD22-A118	130°C 85%RH 33.3 psia, 96 Hours	LTC7802	Q17135.1UHAST	0/77	R

<sup>&</sup>lt;sup>1</sup> These samples were subjected to preconditioning at MSL 1 with 3x reflow peak temp of 260°C prior to the start of the stress test.

# **ESD and Latch-Up Test Results**

**Table 5: ESD Test Result** 

			15.0 0. EGD 100t	rtoourt			
ESD Model	Generic/Root Part #	Package	ESD Test Spec	RC Network	Highest Pass Level	Class	eTest
Model	Pail#			Mermork	Level		Temp
FICDM	LT3922-1	28-LFCSP	JS-002	1Ω, Cpkg	±1250V	C3	RH
НВМ	LT3922-1	28-LFCSP	ESDA/JEDEC JS-001	1.5kΩ, 100pF	±3000V	2	RH

**Table 6: Latch Up Test Result** 

LU Test Spec	Generic/Root Part #	Passing Current	Passing Over- Voltage	Temperature (T <sub>A</sub> )	Class	eTest Temp
JESD78	LT3922-1	+100mA, -100mA	+40V/+4V/+2.6V	150°C	Ш	RH

# **Approvals**

Reliability Engineer: Ryan O'Neill

## **DeltaQualificationMatrix**

General
Short product and technology cycles as well as new environmental regulations frequently result in process and material changes of components, printed circuit boards, assembly techniques and circuit layout which have to be evaluated. The ZVEI "Guideline for Customer Notifications of Product and /or Process Changes (PCN) of Electronic Components specified for Automotive Applications" describes an appropriate methodology for dealing with changed electronic components. The qualification matrices in this guideline are recommendations for how to assess typical changes of electronic components. These recommendations promote an open risk-based discussion between supplier and customer regarding qualifications.

The DeltaQualificationMatrices were developed by the Industry Task Force Team "PCN DeltaQualificationMatrix" together with component experts from the ZVEI Working Group "PCN-Methodology". Actual content represents state-of-the-art technology and does not claim to be comprehensive. Deviation from proposed guideline should be mutually agreed as customer specific requirements have to be considered.

### <u>DeltaQualificationMatrix Application</u> (completion by component manufacturer)

- a) This table has to be used for changes only. The matrices are not applicable for new product, special qualifications (for instance for encapsulation of module) or Information Notes.
- b) If a change is not listed in this table, the qualification plan has to be defined and agreed between customer and supplier.
- c) The matrix for Active Components requires the user to choose between integrated circuits (AEC-Q100 Rev. H) and discrete semiconductors (AEC-Q101 Rev. D1) (cell D4). For Passive Components AEC-Q200 is used. For LED'S the AEC-Q102 is used. For Multi-Chip-Modules the AFC-Q104 is used.
- d) All changes as listed in the PCN have to be marked by a cross (x) in column B and will appear colored. The relevant reliability tests are then shown in "Tests, which should be considered for the appropriate process change".
- e) In "Tests, which should be considered for the appropriate process change after selection of condition table" is for modification of the found relevant tests under consideration of the weight
- Related table "Conditions" has to be assessed per proposed letters with an (x). f) In "Suppliers performed tests" the component manufacturer documents the planned and
- performed tests.
- g) In case of deviations from tests, which should be considered this should be notified and commented by the component manufacturer in the area "Reason for exception of tests". Test results in form of generic data (G) are allowed when notified and justified.

### Evaluation Levels are categorized as follows

"C: Component level": The evaluation of a change at component has to be done by the component manufacturer at the component only. Generic data from other relevant evaluations can be used.

### "B: Board level": The intended change described in the PCN may influence

handling/processability/manufacturability of the component at the customer. Therefore, additional evaluation by the customer may be necessary.

"A: Application level": The intended change described in the PCN may influence the properties of the application (e.g. ECU). In addition to the evaluation under C or B the influence of the change in the application is evaluated by suitable investigations by the customer. It has to be considered whether the application / assembly requirements are already sufficiently safeguarded by other qualifications (application-specific risk assessment).

" \*: Not relevant for qualification matrix": Changes which fulfill neither A,B nor C definitions

Changes indicated as "I" shall not be marked in the DeQuMa. For those changes the Information Note sheet shall be used. As the DeQuMa is desired for PCN only, a marking of "I"-changes would automatically influence evaluation level and test effort.

### Important Notes

- To use the matrices in the right form the ZVEI working group provides a Tutorial on its homepage
- ID number; is a unique identification number for each indicated change defined in the ZVEI PCN DeltaQualificationMatrices. The same ID number is used in the PCN Form sheet to identify the
- Tests identified by the matrix have to be considered and checked if they are necessary to assess the specific change. Test modifications or generic data have to be justified in detail.
- "Further applicable conditions", comments and notes need attention, as they provide important
- In order to use all functions in EXCEL, macros have to be allowed.

# **History of DeQuMa**

Version	Remarks
2.0	Revised by ZVEI PCN Methodology Workgroup in March 2015
2.1	Released March 2015
2.1.1	Active Components - delete write protection in comments
2.2	Solved problems with some ActiveX configurations
2.2.2	Solved Problems in Active Components
2.2.3	Solved Problems ActiveX, Active Components SEM-DE-02 (Design changes in routing) error fixed
2.2.4	Minor fixes
3.0	General Revision by ZVEI PCN Methodology Workgroup in June 2016
	Changes are indicated by underlining in the read only version named Changes_DeQuMa_rev3_vs_rev2.xlsx
3.0.4	Expert Release
3.0.5	Fixing of macro bugs
3.1	Final Release (orthographic and punctuation corrections)
4.0	General Revision by ZVEI PCN Methodology Workgroup in July 2019.
	Muliti Chip Modules newly added to DeQuMa
	LED Components now based on the AEC Q102
	Further Changes see separate PDF's Excel-File, where changes are indicated by underlining
4.1	LED worksheet: Content of columns had been swapped due to rearrangement and omission of columns.
5.0	General Revision by ZVEI PCN Methodology Workgroup in October 2021.
	Add MEMS pressure sensor

	Norked on: Function) Ryan O'Neill		1																								
(Nami	Signature:																										
Pi	N number: 22 0290	23/02/2023	3													evalu											
For integral discrete semicond	AEC-Q100 Revision H -								inci	ludes integ	rated circi	MA its (e.g	TERIAL PERF . ASICs, μ-Co	ORMANCE ntroller, mer	TEST RE: nories, v	SULTS (or oltage reg	the basis ulators, s	of AEC-0 mart pow	0100 Rev er device	ision H) s, logic de	evices, a	ınalog devi	ces,)		additional to AEC-Q10x		
				Form provided by ZVEI - Revision 5.0 - Dess	mber 2021	Evaluation level A/B/C		۰		n orbitsed HAST	B1	o Ufe	famtion, and			3 Breakd own	v instability				silty ton				ESCOOT) changed device		
Mark change with an "x"	Assessment of impact regarding following a contractual agreements technical interface of handing/processability/ form, fit, function, quality performance, reliability	ispects Imanufacturability of customer lity	Potenti	Understanding of semiconductors experts	Examples to explain	evel level for qualification matrix	Further applicable conditions	laba or audition site check	vision H	Temperature Humidity Bis	Temperature Oyoling Power Temperature Oydi	High Temperature Storag	Early Life Failure Rate NAM Endurance, Date Re Operational Life	Wre Bond Shear Wre Bond Pul Sciderobility	Solder Bat Shear Leadin by Ry	Elactomigration Time Depending Distectri	Hot Camer Injection Negative Dias Temperatu	She as Mgration Electronic Discharge Human Body Model	Electronic Discharge Charged Device Model	Electrical Distribution Characterisation	Electromagnetic Compati Short Circuit Characteriza	Soft Error Rate Lead free	Package Drop Lid Torque	Die Stear Internal Water Vapor	Whister test (EC 6008-12-82, JEDEC Parameter-Analysis Comparison of current with characterization, electrical	or GuWhe Products: breader AEC-0008	Remarks
_	ID Type of change		No Y	**		A Application of B Boarde vel C. Component I.		an an	C-Q100 Rev	<b>9</b> 9	тс	HTSL.	ELTR EDR	os daw saw	2 88 3	EM T008	HCI HBH	SM HBM	WCO	ED GHAR	DWG SC	# 5	OROP LT	SS .W			
	ANY  SEM-AN-01 Any change with impact on agreed upon technical contra			Intended to be used if no other type of change is	I			oun)	AEC Check		A4 A5		1 82 83	C1 C2 C3 1	C4 C5 C8		D3 D4	D5 E2	E3 6	4 E5 E7	E9 E10	E11 E12 G	1-4 G5 G8	G7 G8			
	SEM-AN-02 Any change with impact on processability/manufacturable matrix below.		P	bitended to be used if no other type of change is applicable but the change affects agreed sections or other type and the change affects agreed sections.  Any change which is not covered in the matrix bittor, but nik assessment at customer is recommended.		В					-								-								
	DATA SHEET  Change of data sheet parameters/electrical specification approximation.	n (min./max./typ. values) and/or AC/DC		P Update of data sheet because of technical change of the product.		A					1.1.	- -						1.1.									
	specification  SEM-DS-02 Correction of data sheet or issue of emata		1	No technical change of product, process or test.  New description of behavior which was not specified before or which is different from initial specification.  Please indicate clearly, that infonote contains this.	pina, MSL e.g. Errata	Α.																					
	SEM-DS-03 Specification of additional parameters			hype of change! Assessment in application required! Description of a new not previously covered parameter. No technical change of the product.  (3): Definition of new parameter which was not documented before.  (P): Not known as aingle change. Only in combination with other changes.	(i): e.g. adding new basted parameter.	A																					
	DESIGN		Ш	(P): Not known as single change. Only in combination with other changes.							Щ				Ш			Ш		Ш	Ш		Ш	Ш			
	SEM-DE-01 Design changes in active elements. (1)		P	Any device relevant changes in design / layout of planemate with effect on with effect on apsolited electrical behavior.  ) Not included: Modification to adjust product parameter within specified process window and design rules.	e.g. change of ESD structure e.g. add / nerrows a translator in layout	A	Please check if data sheet is affected (SEM-DS-01).				• M	٠.	D,J			D D	D D	D •	•				. г.			-	
×	9EM-DE-02 Design changes in routing . <sup>3</sup> )		P	Any change of wiring between elements in chip design / tryout with effect on specified eletrical behavior. <sup>9</sup> ) Not included: Modification to adjust product parameter within secretified design rules.	e.g. mask changes in metal fix for connective action (based on solemal SD report) e.g. Connecting / disconnecting an already existing transistor through routing	С	A: Impact on EMC behavior cannot be evaluated / excluded on component level.  A: If impact on electrical function is not excluded on component level.  Please check if data sheet is affected (SEM-DS-D1).				АМ									. .			-   -   -			-	
	SEM-DE-03 Die shrink <sup>3</sup> )		Р	P Shrink of active area.  3) Not included: sawing street/kerfscribe line	Typical shrink of die.	A	Please check if change in process technology (SEM-PW-99) is also affected.				- м		• D,J						•			• -				•	
	921M-DE-04 Firmware modification			integrated software by design or memory as defined by supplier.  (g) Previous modification or update without effect of functional performance at the customer (bug fits) Previous modification or update with effect of functional performance at the customer.	(I): e.g. addition of Firmware opportunities (IP): e.g. bug fix with impact on functional performance	A		•																		-	
	PROCESS - WAFER PRODUCTION  SEM-PW-01 New / change of wafer substrate material				e.g. different wafer material to currently released material (like change from EPI material into non- EPI material)	С					T							1.1.				T. I.				Qual	iffication effort acc. AEC-Q100: see diffusion/doping
	SEM-PW-02 New wafer diameter		+	P Change of wafer clameter resulting in equipment and process changes.	EPI material)	С	Impact on changes in SEM-PW-03 and/or SEM-EQ-01.				E M			Е Е -				- E	E								Q100: Tor broad changes that involve multiple attributes (e.g., site, materials, season), of let to section A1.3 of this appearance and section 2.3 of Q100, which allows as selection of worst-case test whicles to cover all the possible permutations."
	SEM-PW-03 New final water thickness		Р	P Change in final wafer thickness.	e.g. change in final chip/die thickness	С	A: If thermal conductivity is affected (like MOSPET; IGBT, BGA package, stacked dies,) A: If impact on EMC or ESD behavior cannot be evaluated / excluded on component level.				ЕМ			Е Е -				- E	E								
	SEM-PW-04 Change of electrically active doping/implantation elemen	nt	Р	P Change in electrically active doping / implantation element resulting in a new technology.		A					- м	٠,	# -				@• •	٠.								-	
	SEM-PW-05 Change of gate material / dielectrics		P	process		А					• M		@N D,J			- @•	@• •									-	
	SEM-PVI-05 New / change of backside operation (grinding / metalliza	ation)	Р	Change of bottom layer of die (between die and leadinams). Change in process, material, or dimensions necessary. Alternative see SEM-PW-09	e. g. change from CrNN/IAu to CrNN/IAg		A: If thermal conductivity is affected (like MOSFET; IGBT, BGA package, stacked dies,) A: If impact on EMIC or ESD behavior cannot be evaluated / excluded on component level.				• M	_						- M	м				н	н -		- AEQ	-Q100: Applicable to all amort power devices
	SEM-PW-07 New / change of metallization / vias / contacts		P			С					• M			• • •		•		•	-								
	SEM-PW-08 New / change of passivation or die coaling (without bare SEM-PW-09 Change in process technology not covered by any other		- I	internal layers.  Change of top layer on die (betseen mold communication) die in communication die in communication die in communication die in communication die internal communication die internal communication die internal communication die internal communication die integrit of the final product.	e. g. addition of polylinide  (): e.g. change from wat to dry etching. e. g. change from horizontal to vertical oven for coddition	C A	Change of intrinsic mechanical stress might influence electrical function.  Please also check changes described under EQUIPMENT.  Please check if change is described by specific type of change in this matrix.				• M		# D,J													- Qual	iffication effort depends on type of change.
	SEM-PW-10 Process integrity: tuning within process specification		- 1	influence the integrity of the final product.  Variation within process specification (): If having within process appecification does not p influence the integrity of the final product. (P): If remaining mak on product apscritication is articipated.	(P): e.g. change of layer thickness  (-): e.g. process control	С	Please check if DATA SHEET is affected. Please check if SEM-PW-09 is affected.	ŀ																		-	
	SEBA-PW-11 Change of wafer supplier.		- 1	(-): If no nemaining risk in supply chain exist  (-): If the change of wafer supplier can influence the integrity of the final product.	(-); e.g. change of wafer supplier with same material corposition. e.g. same material composition and does not influence electrical behavior. (P) e.g. new supplier with impact on substrate material and or electrical behavior.	С	Not on component, tested on test structure (typical for IC). Interaction on component level for discrete components expected. In case of SCI substrate HF properties have to be qualified. Please check if SEM-PW-01 and SEM-DS-01 in affected.													· @• ·						Quali only i Supp requi AEC- proof	ification for IC & µ-Corboller difficult on product level. Characterisation on wafer level on but structure.  If the production is the assessment if there is a technology departed risk, stray additional quadrication effort.  If the production is the production of the production o
	SEM-PW-12 Change of specified wafer process sequence (deletion s	and/or additional process step)	- 1	Any change which is not covered by another type of change, impact is to be assessed.		С	Please check also changes described under EQUIPMENT.  A: If impact on application cannot be evaluted on component level												-								
	SEM-PW-13 Move all or parts of production to a different wafer fab at	ite.	Р	Water fab transition with additional changes (described above). Includes transfer as well as additional site.	e.g. dual source / fab strategy	A	Check if any other type of process change is applicable due to the transfer	•			• M		• J										н	н -		AEC-	Q100: Tor broad changes that involve multiple attributes (e.g., site, materials, sesses), refer to section A1.3 of this appendix and section 2.3 of Q100, which allows to selection of worst-case test vehicles to cover all the possible permutations."
	SEM-PW-14 Lithography		- 1	Change in process technique for lithographic process and makeful (—): If the change in process technology does not influence the integrity of the final product.  (P): If the change in process technology can influence the integrity of the final product.	(-); e.g. exchange of defect mask (P); e.g. change from E-beam process to X-ray process e.g. change from contact into projection mode	С	Please also check changes described under <b>EQUIPMENT</b> .				• м		# -						-							-	
	SEM-PW-15 Clodde / Infenteyer Dielectric (exct. galle colds)		- 1	Change in process lochings for oxide (excl. gale oxide) (intelligent process lochings for oxide (excl. gale oxide) / intelligent delectric process lochings in process lacknotogy does not influence the integrity of the final product.  (P): If the change is process lacknotogy can influence the integrity of the final product.		С	Please also check changes described under EQUPMENT.				• м		#,N D,J													-	

Methods																														
Mathematical Mathe			section "I							_					П	ттт				1.1	_ [_	П		П	П	П	$\top$			ELFR can only be performed on packaged lest vehicles.
Sequence of the sequence of th	SEM-BD-01	New final wafer thickness	Р	P	Change in final wafer thickness.	Change in final chip/die thickness	A			-			•						•	E	E E	•			-	-   -		-	•	NOT I Was removed in devasion from the ACL-Q100 states because there it is a combined type of change (Wafer Dimension/Thickness). NBTI is applicable for wafer dimension change only
Sequence of the sequence of th	SEM-8D-02	Change of top metallization or bond pad stack	Р	Р	Change in bondpads (incl. stack below), material, pad pitch, surface changes, layer thickness	e. g. change from ASiCu to AlCu e. g. change in over pad metalization	В						•	-						-						- [ -			-	•
Marche   M	SEM-BD-03	New / change of backside metallization	Р	P	Change of bottom layer of die (between die and leadframe). Change in process, material, or		A			-			• -	-						м	м •	-   •			-	-   -				
				,	Needed information for pick & place machine.	(I): e.g. change from 350 to 240 good dies on																				Ħ				
	SEM-BD-04	Change of wafer setup or number of possible good dies on wafer.		P (	(f): amount of possible good dies on wafer (P): influence on wafer setup and wafer mapping	(P): e.g. information change for pick & place machine.	В			-										-					- 1	-   -		-	-	
Mathematican   Math					Selection of dies in water edge region which have full electrical functionality.	(I): e.g. appearance of wafer edge (rounded																								
Mathematican   Math	SEM-BD-US	Crange or opicial appearance of water edge region (last strice coverage or edge excussion)	Ľ	- 0	(f): in case of wafer edge is affected only (P): in case of single die is affected	(P): e.g. polytride as new coating on die																								
Markaman and Marka					Needed information for sawing and pick & place machine.	(I): e.g. if product is delivered as known good die (in tape and reel)	_																							
Markaman and Marka	SEM-BD-06	Die scribe or separation	'	P	(f): If the change in saving process does not influence the integrity of the final product.  (Ptr in case if product is delivered on water.	(P): e.g. information change for pick & place machine.	В	Please check if SEM-BD-04 is affected.		1	-   -				-   -   -					1 -		-   -		1-1-	1 - 1	-   -		-	-	
Sequence of the sequence of th					Change in process technique for die preparation /																					$\pm$				
Sequence of the sequence of th	SEM-BD-07	Die Preparation / Clean		P	cleaning (): If the change in process does not influence the intervity of the final product	(-): e.g. change of cleaning time.  (P): e.g. change in cleaning procedure after change of assistent accomment	В	Please check if SEM-BD-05 is affected.		-			•	-						-		-   -			-	-   -		-	-	
March   Marc					(P): If impact on product integrity is anticipated.									+	-		++	+	_	+		+	_	-	+	+	+		-	
Mathematical Mathe	SEM-BD-08		Р	Р	Change of top layer on die.	e.g. addition of polyimide e.g. change of polyimide thickness	В		* * * * * * * * * * * * * * * * * * *	-	-   -		• #,N	U,D				• •	• •	•	• •	•   •			-	-   -		-	•	
Markanganganganganganganganganganganganganga				I - I		e. g. changes in package dimensions (further						T.,,T		<del></del>	<del></del>	1 1-1	11		T	1 1	- 11			П.	ТТ				Ŧ.	
			Р							÷		-		+ +	-	-	-			+	•	•	•	- 1	. n		n n		-	
	SEM-PA-02	Change of leadframe base material	Р			e. g. change from alloy42 to copper e. g. change between two different copper alloys	В		• •			м •		•	· • ·	• -	•			-			•	- L	. н		н -	٠	•	
				0	Change in leadframe dimensions which has impact to the specified electrical parameter acc. data	t		ESD investigations are only necessary if internal ground and power supply connection of leadframe is affected.																Ш.	l l					
	SEM-PA-03	Change in leadframe dimensions	Р	P	sheet or specification (e.g. heat sink, pin dimensions, die paddle size,) Not included: Variation within specification	e. g. change in lead frame geometry	В	A: If impact on EMC behavior cannot be evaluated / excluded on component level.				м -					1								н					
			H			e. g. change from Ag flash to NP protection laver														Н		+		Ħ	+	Н				
	SEM-PA-04	Change of lead frame finishing material / area (internal)	Р	P	second bond area (e.g. influence in adhesion to mold compound, wedge bond reliability)	e. g. change from Ag spot to Au spot e. g. increase of silver plating area	С					м •			- С		•							- L	. н		н -			<ul> <li>ror ware comp strength test: Pre- &amp; Post-process change comparison to evaluate process change robustness (AEC-Q101).</li> </ul>
Maria   Mari						e.g. change in heat alug stack e.g. change from Sn into NiPdiAu																								
Maria   Mari	SEM-PA-05	Change of lead and heat slug plating material/plating thickness (external)	Р	P	Change in material and / or process resulting in a new technology (e.g. pure tin).	e.g. change of layer thickness e.g. change of external bumps of a BGA e.g. Change of external pins of a barmetic	В			•		м •		-	- C		•			-				· L	н		н -		-	
Part			H				_				H				+		+			H		+		H.	H	+				
Part	SEM-PA-05	oump waterse / Metal System (internal)	Р	_		e. g. change of copper pillars	С			•		M •	•				- 1				- 1			• •	++	1	1			
Part	SEM-PA-07	Die attach material	Р	P	Change of die attach material and / or process resulting in a new technology (e.g. soft solder,		С	A: If impact on EMC behavior cannot be evaluated / excluded on component level (if die attach has impact on electrical				м -												- L	н	-   -	н			
Part					eposy, etc.)			conductivity).																						
Part						e o channe from Au to Cu material		A: In case of bond diagram change and EMC cannot be																						Parameter Analysis: Strictly required only for Power devices. In general: Site audit for material chance with impact on bonderocess (e.g. from Au to C
Maria   Mari	SEM-PA-05	Change of wire bonding	P	P	Material, diameter, change in bonding diagram and or change in process resulting in a new technology	e.g. change from 25µm to 23µm diameter e.g. change from single to double bond	С			•	• •	Q •			• •					-		м -	- •		н	-   -		-	•	<ul> <li>recommended.</li> <li>AEC-Q100: "For broad changes that involve multiple attributes (e.g., site, materials,</li> </ul>
The content of the					acmongy.	e.g. change from atich bond to stich on ball bond.		SEM-EQ-01.																						processes), refer to section A1.3 of this appendix and section 2.3 of Q100, which allows for the selection of worst-case test vehicles to cover all the possible permutations."
The content of the								A- breast on EMC habitains cannot be evaluated (assisted on																		Ħ				
The content of the	SEM-PA-09	Substrate / Interposer	P	P	Change of BGA substrate	e.g. changes in routing	В	component level.  A: If impact on electrical function is not excluded on component.				м •	•			- т				-			@• -	- L	. н	-   -	н	-	-	
Part								level.																						
Part				8	Supporting layers for complex packages like flip chip and / or change in process resulting in a new																									
Part	SEM-PA-10	Die Overcoat / Underfill	-	P	technology (-): If change does not influence the integrity of	(): e.g. change of dispensing speed (P): e.g. change of underfill material	С			•	• •	м •	•							-		-   -		•	-	-   -	- H	-	-	
Part				è	(P): If impact on product integrity is anticipated.																									
Part								B: impact on thermo-mechanical abeas caused by mismatch of																						
Part	SEM-PA-11	Change of mold compound / encapsulation material	Р	P	Change of mold compound / encapsulation	e.g. change to green mold compound	С	mois compound, inserconnecting secretalogy and carrier is anticipated (specific for Power Devices).  B: for wave soldered devices				м •														-   -				
Part				l ľ	maseria.	e.g. change or mer paracies		A: in case of high frequency signals (+ 3GHz) it should be assessed if possible changes in permeability of mold compound																						
2. Moreover a composition of the				Н.											-					$\blacksquare$					$\blacksquare$	+	+			
2. Moreover a composition of the	SEM-PA-12	Change of hermetic sealing	Р	P	Americal areas are maseria and process or hermetic (e.g. ceramic ) packages, capped die and sealed devices (e.g. pressure sensors)	d e.g. change of sealing material for RoHS	В	A: impact on EML densitor cannot be evaluated / exclused on component level (if encapsulation / sealing has impact on electrical conductivity).		-	• •			-		•	• -			-	-   -	-   -			•	-   •	- •	-	-	
Part					Change of marking on device and / or change in	(I): e.g. change of appearance (additional																								
Part	SEM-PA-13	Change of product marking	1	P	(i): If change does not influence the integrity of the final product.	(P): e.g. change from inked marking to laser marking	В			1					8					-					-					
March to be designed from the foundation of th			Н	-	(P): If impact on product integrity is anticipated.	e.g. marking of pin 1		Proceedings of the Control of the Co			H				+		+			H		+		H	H	+				
March to be designed from the foundation of th	SEM-PA-14	Change in process technology (e.g. trim and form, leadfarms preparation)	-	P	(-): If the change in process technology does not influence the integrity of the final product. (P): If the change in process technology can	(P): e.g. change from punched to sawn QFN	В	Presse also creck changes described under SEM-EQ-01. Please check if change is described by specific type of change						-											-				-	
## 1		**	Н		influence the integrity of the final product.			in this matrix.							44	ш	-			$\Box$				Н	$\square$	$\perp$				
## 1	SPM.PA **	Drown intentiv bules within recours specification			Variation within process specification  (): If funing within process specification does not influence the intention of the final pool	ful: a c. nerrana control	c																			. [ . ]				
## 1	Jac. no P74-15		-		(P): If impact on product specification is anticipated.	, , -d-process consor																								
## Designation of the control of the			П		Change of suppliers for direct materials which are	(-): e.g. change of whe material supplier.										Ш				П				П	П		T			
## Designation of the control of the	SEM-PA-16	Change of direct material supplier	-	P	used in assembly process (BCM).  (-): If change does not influence the integrity of the final product.	e.g. additional leadframe supplier with specific leadframe manufacturing technology	С	Please check if material is changed!						-						-					-				-	See change of material.
## Designation of the control of the			Ш		(P): If impact on product integrity is anticipated.	e.g. Change of BGA substrate supplier, if impact on board level reliability cannot be excluded										Ш								Ш	ш					
An all most and continued and an a	SEM-PA-17	Change of specified-assembly process sequence (deletion and/or additional process step)	_	P	(-): no influence in final product integrity or apecified sequence	(-): e.g. additional cleaning step e.g. deletion of optical inspection	С																	l						Qualification depends on specific change.
## Additional Class    P   P   Additional Class					(P): innuence in final product integrity or specified sequence	μy; e.g. change lead finishing pre trim & form to post trim & form										Ш								Ш						
## Designation of the property of the transport of the tr			ا ۽ ا	ا ـ ا	Assembly transfer or relocation.	and declaration (6th etc.)		A or B: impact on other type of changes described under PROCESS ASSEMBLY and SEM-EQ-01.				м												H.	ы		нь			Whisker tests have to be done on monitoring basis!
## Designation of the property of the transport of the tr	DEM-PA-18	revore as so partie or production to a cinerent assembly alle.	٩	"	includes transfer as well as additional site.	w.y. coal source / tso strategy		Check if any other type of process change is applicable due to the transfer							1.									Ι.Ι.	"		.1	•		<ul> <li>PROCESSES, The cross creatings that modify multiple attributes (e.g., alle, materials, processes), refer to section A1.3 of this appendix and section 2.3 of Q100, which allows for the selection of worst-case lest vehicles to cover all the possible permutations."</li> </ul>
Description   Part   Description					Separation process from single wafer to dies.																									
Description   Part   Description	SEM-PA-19	Die scribe or separation	-	P	(-): If the change in process does not influence the integrity of the final product. (P): If impact on product integrity is anti-invited	(-): e.g. change of kerf width (P): e.g. change from saving to laser cut	С				•	м -		-											-				-	
2017-10-20-20-20-20-20-20-20-20-20-20-20-20-20			H								H						+			H				H	H					
Suppose   Part	SEM-PA-20	Die Preparation / Clean	-	P	cleaning (-): If the change in process does not influence	(-): e.g. change of cleaning time.	С					м -		- 1													н -			
MAXINGSEPPRING					the integrity of the final product. (P): If impact on product integrity is anticipated.																									
MAXINGSEPPRING			ΗĪ	l T	Change in process technique for molding / encapsulation.									ΙT											ΙT					
MAXINGSEPPRING	SEM-PA-21	Molding / Encapsulation process	-	P	(): If the change in process does not influence the integrity of the final product.	(-): e.g. tuning within process specification	С					м •	•				•							- L						
203.97-52 Dypack requirements through I P P Rh Mandered of by gask requirements (Section 2014) 1 P P Rh Mand		PACKING/SHPPING													#				_								_			
200-75-02 by year requirements change   PPLT trichining of dry suck requirements   PPLT trichining of dry suck			Р	P	Packing/shipping specification change.  III: Relaxation of dry pack requirements	(f): MSL 3 → MSL 1														-									-	-
F F (Julgo Class (19), 100)			I P	P	(P): Tightening of dry pack requirements	(P): MSL1 → MSL3		02).		-													-	1			-			
	DEM-PD-03	Commignion Committee (color)		- 10	Conseque on Cather (ITBY, 1988)	1	-								-1-1	1-1-1	-1-1	- 1 - 1	- 1			-   -	-   -	1-1-		-   -				

	Change of latelling	I P	Change of labelling also on reel.  (i): Change of material label without impact on barcode.  (ii): Changes of material label information which affects data processing at customer.	(I) e.g. additional information (RoHS stamp) (P) e.g. change of defined nonrendature for data processing	В			 		 	 	-						 		-		
	EQUIPMENT							 		 	 		 			_,_,		 	 			
SEM-EQ-01	Production from a new equipment/tool which uses a different basic technology or which due to its unique form or function can be expected to influence the integrity of the final product	РР	Change in process technique.	Change from single wafer to batch process (e.g. over pad metalization) e.g. dambar cutting (mechanical to laser cutting)	A	Check which other type of change is applicaple due to this equipment change.		 		 	 	-		-	- ·			 	 			
SEM-EQ-02	Production from a new equipment/loof which uses the same basic technology (equipment equipment or extension of existing equipment pool) without change of process.	-   -	PCN required for dedicated equipment for sensitive component production. (-): if change does not influence the integrity of the final product. (P): if impact on product integrity is anticipated.	(-): e.g. extension of existing equipment pool (P): e.g. extension of dedicated equipment in case basic technology still need to be proven	С			 		 	 		 	-				 	 	-		
	Change in final test equipment type leading to a different test concept.	P P	Change of tester platform with differences in HW or SW that makes a change in test concept recessary (only in case of bare die: final test means wafer test).		С					 	 	-		-				 	 •		Gage R&R / delta correlation	
	TEST FLOW		•	•		*															•	
SEM-TF-01	Move of all or part of electrical water test and/or final test to a different test site.	р р	Tester transfer or relocation. Check impact on SEM-AN-01	Dual source strategy	С	Check if any other type of process change is applicable due to the transfer		 		 	 		 					 			Gage R&R / delta correlation	
			Includes transfer as well as additional site.			and distinct																
	Q-GATE		Includes transfer as well as additional site.			THE VALUE			ш	 	 $\perp \perp \perp \perp$		 					 	 			
SEM-OG-01	OGATE  Change of the lest coverage-hasting process flow used by the angular to ensure dids sheet completions (e.g. ethnication-addition of sectional measurement that flow block, misandonise/burcovered of monitoring procedure or sampling).		Includes transfer as well as additional site.  e.g. less flow block, reduction from three temperature measurements to two temperature reasurements to two temperature for the site of the	(-): e.g. test implemented without customer requirement (IP): e.g. reduction from three temperature measurements to two temperature measurements to two temperature measurements as g. change in burn in I run in process.	С	100 S 100 S		 		 	 	-	 	-				 		-	Parameter Analysis: Delta correlation  * For Train is "changue ELPR recommended in case of introduction of new lest flow steps consider assesses reliability.	ment of influence on product
SEM-OG-01	Change of the text coverage testing process flow used by the supplier to ensure data sheet combined (e.g., elimination/addition of electrical measurement liest flow block:		e.g. test flow block, reduction from three temperature measurements to two temperature measurements, change in busin in / run in process (-): if change does not influence the integrity of the final process.	requirement (P): e.g. reduction from three temperature measurements to two temperature measurements	С			 			 		 	-	- •			 -   -	 	-	* For "burn in" changes ELFR recommended	ment of influence on product
SEM-QG-01	Change of the text coverage testing process flow used by the supplier to ensure data sheet combined (e.g., elimination/addition of electrical measurement liest flow block:		e.g. test flow block, reduction from three temperature measurements to two temperature measurements, change in busin in / run in process (-): if change does not influence the integrity of the final process.	requirement (P): e.g. reduction from three temperature measurements to two temperature measurements	c			 - A M		 	 	-	 	-				 			* For "burn in" changes ELFR recommended	ment of influence on product
9EM-QG-01	Outage of the lest converged-eding process flow used by the supplier to means data sheet compliance (e.g. elementariskellism of electrical measurements flow block; relaxabilitation/element of motibing procedure or sampling)		e.g. leaf flow block, reduction from three temperature reasourceworks to too barquerature reasourceworks to two barquerature reductions and the second reduction of the properties of the second reduction of the second red	requirement (P): e.g. reduction from three temperature measurements to two temperature measurements	c			 - A M		 	 	-		•			• •	 			* For "burn in" changes ELFR recommended	ement of influence on product
9EM-QG-01	Owen of the lost investigation process the used by the angular in cause data that complete by a developmental for of school or assessment for the took, excluding the complete of the complete of the complete of the complete of the complete of the compl		e.g. leaf flow block, reduction from three temperature reasourceworks to too barquerature reasourceworks to two barquerature reductions and the second reduction of the properties of the second reduction of the second red	requirement (P): e.g. reduction from three temperature measurements to two temperature measurements	C			 - A M			 					•	•	 			* For "burn in" changes ELFR recommended	ment of influence on product
SEM-QG-01	Owny of the last consequences from secting to anything to exercise the state of the section of the section of the state of the section of the state of the section of the s		e.g. leaf flow block, reduction from three temperature reasourceworks to too barquerature reasourceworks to two barquerature reductions and the second reduction of the properties of the second reduction of the second red	requirement (P): e.g. reduction from three temperature measurements to two temperature measurements	C		- •	 - A M			 			×		* * G	•		 		* For "burn in" changes ELFR recommended	meet of influence on product

	Not required.
	Information Note required.
P	PCN required.

States or \*\* indicates that performance of that shees less should be considered for the appropriate process change.

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Signature:																		_	_	_	_		_	
PCN number:	1								IATERIAL PE	RFORMANCEE	Device evalua TEST RESULTS (c	n the basis of	AEC-Q162 Re	rision A - April	6, 2020)									
	ı	§ 9			П					$\Box$		ТТ			Т	Т	П			т		П		
		Probadion level Af B IC																	3 3					<u> </u>
	Page annibility (270) - Resident ( 0 - Chicardea 200)	4	<	0 1			5	8 5						_										
Assessment of impact regarding following aspects - contactual agreements - works a window of handinglyocoscability immufacturability of customer - born, fit, function, quality performance, reliability - born, fit, function, quality performance, reliability		1	ta los	g tar	0.0	4 4		an Pic our		4		1.1		4	2				1	1 1	1 1			Romari
technical imeriace of handing/processability/manufacturability of customer     form, fit, function, quality performance, reliability		1 12	S Po	on the	į.	9 10	1	1 1	at at	of Direct	1 1	Į.	1	i	8 8	a Ones	40.00	1 /		1	100	1	de su	A
	Potential impact?	CO produced in a local control of the local control	6	9	1	1 1	1	9 9	ě	the C	0 40	j	å	2	į	Total and	ž.	1 1	93	ğ	0 40	1	1 4	4
ID Type of change LIGHT SMITTHS DODE (LIE)	No. Yes	4801.	~ 62	1 1	Ŋ	4		4 4	-;-	-1 1	-	1,1	9	1	, -	4 4	Lal	بله	ين ا		a 1	لبط	4	
DECLEDANCE Any change with impact on agreed upon technical contractual agreements	P P applicable for the change afform agreed buttering  P applicable for the change afform agreed butterious  controlled annexes men.				T - T		-	I - I -		-   -		1.1	-	-	-		1 - 1	-17	77			1.		
OEC-LED-MANO Any change with impact on technical interface or processability/menufacturability of continuous, which is not covered in the marits below.  GATA EXECT.	P P Secretaria de la composición del composición de la composición del composición de la composición del composición de la composición de la composición del composició	Desk f OEC-LED-05-61 is affected Processability should be assessed.			-		-		-			-	-	-	S,T		-	- 7		-				
ORCLED DB of Change of data sheet parameters/lest (see disastion (six, insuchy), values) and to Pulse DC specification	Change of application relevant information (e.g. e.g. change of die substrate material:	Α.		E, gs -	gs		gs E	T.T.	E			T.T	. 1	s	E		Т.Т	T	<b>T</b> ,	Е	$\overline{}$	T.		
Pulse/DC specification	The Stationary of the Stationary of the Stationary Stationary of the Stationary of t			- 6-	-	-			_					-	-+	-	H	+	÷	H	-	+	$\vdash$	
ORCARD-DR-02 Currection of data wheet or issue of errors	description of industrialization was not appendix of texture or the contract or the contract of texture or the contract or the contract or the contract of texture or the contract	A .	* * *		-		-		-		-	-	-	-	-		-	- 1	1 7	1 - 1		-	•   <sub> </sub>	-
	Assessment in application required improved statistics.  E Definition of an additional parameter which was not														-	-	H	+	+	+	-	+	$\vdash$	_
CRC-LRD-CR-GS Specification of additional parameters	E Definition of an additional parameter which was not operated believe.  I P P Them is a risk on supply chain where at least one additional other PCN-netward change category will be g : additional benganature coefficient parameter in g : additional benganature coefficient param	. ^	* * *		1 - 1	-	-		-	-   -			-	-	-		-	1	117	1 - 1	1 1			Pornalism since this is not a product shi information     Clevelfusion C
CERTON	Any device relevant changes in design / bryout of extraol/stream	E change from Particulation In					i			Ti i					Ť	Ť	Ħ	Ŧ	Ŧ	Ħ	Ŧ	T	T	
CRC-LED-CR-CT Design changes in epitony.	P P STATE AND THE PROPERTY OF	A sharpe from Disable believe to Classium wells >> CBC LED-DB-01 (specifium is affected)		•	•		•		٠		-		н	•	-	1	-		•	٠				
ORC-LED-DE-07 Design changes in routing layout.	Any change in chip-design / tayout. Provide information if the significant change is optionise rescribed, as a g. reduction of bond pad size.  P P Not tabulated: Changes within design rules and design as g. number / arrangement of micro prisms / via h	A shange in layout of current spreader > DEC LED-DE-01 (validation pattern bloomyes) A shange in Ag morer -> DEC LED-DE DE (Popt, radiation pattern shanges)								- в	в р,м		м				м	м .		1.				N regit be considered for complex size.
ORCARDOR-03 Die abriek	specification without affecting specified functions, serverserous and relative area.  P	A Person should be described by the second of the second should be second of the second second of the second second of the secon									в •								4	+	-	-	-	
ORCCEDOR OF LED package (societ leadfaire)	P P Strink of active area.  Not included it loaning meetine/flootible line  Tiginize strink of die.	A landwarings (DEC-LED-PW-DE) is also already of the control of DEC-LED-DE-01 is advantage of the already of the already of the control of th		•				H		· B			D								5 5			
	e.g. change in leadframe / submount dimensions i	Denk if OECLEDOS I is abused to distributions.  Cleak if OECLEDOS I is abused the abused of the abused is a sharpe of the abused in page 100 per 100 p					_				_						H	_	_	+	_			
CEC-LED-CE-CE Design of leadbarre	p p any change of leadflams / submount dimensions e.g. change in windowd boging any change of outer dimensions.  Any change of outer dimensions.  Any change of submount dimensions e.g. change in windowd boging to experimens the leadblams out all changes are submounted to be a su	Machine to a second or distribution.     A in case looping of wireland is affected	• •	•	•		•		-	• в	B D	-	-	•	٠	T 2	-	٠.		•	5 5	5	4	
PROCESS - WAPER PRODUCTION  OBC-LED-PW-01 New Change of safet subsists or carrier material	P P New wafer substate material. egg different seder material to currently released material pages tools (spipes to Sidoo)	C Clerck of CECLEDOS-01 is admined which leads in a change of the strictly copies parameters or distributions.		р .				1.1.					р		•		р	Р	D D	р	Ŧ		- 1	
OBCLEDPWG Water dameer		Typically Disk Type of change affects of the Country Disk Type of change affects with change in equipment process inclinating to equipment process inclinating to the process inclinating to the process in addition.			+ -	_					_					-	H	H	_	Р	-	+	-	
	positionage	believing - they need to be identified a addition			-	-						-	-		_	-	Ė	4			-	+		
ORC-LED-PW-GI. New final wafer thickness	P P Change in final-wafer trickness e.g. change in final chip/life trickness	C Cleak if OECLEDOS41 is affected which leads to a sharige of the structuration parameters or distributions.		Р .	•		•		٠	- в	в .		-		•		-		• P	-	نب		-	
OSCLED-PW-66 Change of electrically active doping/implantation element	P P Change in electrically active-doping / implantation e.g. change formille to C as depart electricating in a new technology.	0		с -	с		•		•			-	-	-	٠		-							•
OECLED PW 68 Change of stacking  OECLED PW 68 Name / change of parallel policy in the control purpose of parallel pw 60 name (change of parallel pw 60 name	P P change in layer sequence or trickness and p-material	A sheated due to potential system votage differences		•	•				•				F M	-	-		-				-	+-	-	
	P P Change in neuralization of bondpade, meterial, layer e.g. change is bond pad metallization thickness. P P Substraint intyle of die glanteen die and p Change of bottom layer of die glanteen die and p Q change for bottom layer of die glanteen die and p Q change form.An to Audie	C & income of change to Absentions metallization		• •											D,M		м			M,B	-	+-		
		Exchange from CVD dec to smaller dec		•	•	- '			•		•	-	D,M	•	D,M		D,M	3,M D,	и ом	D,M	-	+-	H	
OEC-LED-PW-08 Change is process technique (e.g. significant process changes like lithography, etch, oxide deposition, de back surface preparation/backgrind,)	Change from set to dry ecolog, change from horizontar     P to vertical own for ordanics, change from contaction     change from large configuration of the contaction or an open from contaction to adopte from our contaction to adopte from ou	C In transcribe third color mediate above. In case of new equipment phases about CECLED FA.14 is also affected.	• •		-	-	-		-			-	-	-	-		-	- 7	117	1 - 1	1			Coultration effort depends on type of str
ORCLED PW 09 Process Integrity: Tuning within specification  ORCLED PW 10 Change of naterial supplier with no impact on agreed specifications	P Variation within process specification     «.g. process control	C Committee on the contract of			-		-					-	-	-						-			I	
ORCLED-PW-10 Change of material supplier with no impact on agreed specifications.  ORCLED-PW-11 Change of specified water process sequence (deletion and/or additional process step	Pacange of water supplier. Change of supplier for     Pacag. Change of water supplier.     Pacag. Change of water supplier.     Pacag. Change with it not comment by another type of     a.g. additional change process in water products     a.g. additional change process in water products	C Durings of water supplier please check in ORCLEDFW41 is affected.				-									-			#		H	-	++	d	Qualification effort depends on type of sh     Qualification effort depends on type of sh PPAP has to be updated.
ORC-LIDPW-12 Change in die coafing or passivation	P Any change which is not covered by another type of e.g. additional cleaning process in water products     P P Change instruction (Solicines, and process for costing an g. change from SIC21s SRV)     and passionism.	c			Р					. Р	р .	-	Р	-	-		Р	P P. 6	ğ • P	Р				
CBC-LED-W-ng Newwalter production location-on transfer of water production to a different not previously released location-lean-subcontractor	P P Newwarter propriaction location or transfer of wafer production with acceptible additional chances.	C PRODUCTION and EQUIPMENT			-							-	-		J		-	- 7				-	- 1	
EAST OF CELVERES (Water process charges and covered in this section shall be ha	that according to section "Process: Water Production")  P P Change in bondpace, reserved, paid pibb, surface any change from As to As aboy changes from As to As aboy changes from As to As aboy changes from As to As aboy	sategates of this DeQAMa			1.1	-   -	<del>-</del>		<u> </u>		_			_		$\pm$		丰		B M, B	<del>=</del>		Ħ	Proposable southern have for reliability to
ORC-LED-BD-01 New change of front side metallization ORC-LED-BD-02 New change of backside metallization	P chances have blokness e. a. chance is over and mentiones  Disage of bottom layer of de (between die and leading of the best and leading blokness carriers). Change in process, material, or e.g. change from As to Au alby	A traine of object deard lectrology     Const if CBC-LED 08-01 is absolute     Solution of CBC-LED 08-01 is absolute     Solution of the contrology of the     Activities of the contrology of the     Activities of this on bland lectrology.										+ +			Ħ	÷					-	÷	Ĥ	Measurable package type for relability to supplier and successor     supplier any successor needs to be checked solves of the c
DEC-180-90-00 Change of sockade netrationals  OEC-180-90-00 Change of wafer setup or number of deep on wafer.	P P Modificational Change in process, materials, or e.g. change from Art is As alloy distinctions.  Needed information for pack & place machine.  1 P I conty additional number of chaps. e.g. information change for pack & place machine.	electrospile parameters or distributions.  A in case of stringer-board lectrostopy		-	·	_			Ľ			-		- +	-		H			10,00	4	+	À	Cartimer application result to be checked within differences. Neasonable package type for reliability to supplier and sunitaries:
	W ritance in section between vision and from of unfor	B & in case of chip on based technology  Dank if DECLED DE41 is also affected.		р .			-		-	· 8	в .	-	-				-	4	H-	Р		+-	H	Neasonable package type for reliability to supplier and continuer
	P P are not classification and compare (noticing carriers) way and change on converter thickness through the converter thickness through classification and process for coating and change on converter thickness through the coating and converter thickness through the coating and converter thickness through the coating and change from SICI2 to SIRI2	B abused A treasure of city-on-beard technology Comb of ORCLEDOS41 is also							•			-	-		•									Measurable package type for relability to supplier and suntainer
OEC-ERO-RD-RD Change in die coating or passivation PROCESS - ASSEMBLY	P P Change in national, thickness, and process for coalling a.g. change from SIG2 to SNRI	B. In case of ship on board leshnology     Deak if OECLED-0541 is also affected.     B. In case of chip on board leshnology	e P	•	Р	-   -	•		-	. Р	Р -	1:1	р	•	:	-   -	Р	P @	P	Р			<u> </u>	Measurable package type for reliability to supplier and suntineer
ORC-LED-FA-01 Change of leadhame leabmount base material	P P New Inadhamentubmount national (new in composition) e.g. change from copper aloy to have copper	Omit if OECLEDOS I is affected structured to a change of the structured to a change of the structured to a contribution.			-		Р					3	A		P,1	• P	A 80 A					1 - 1	- 1	(Ex is required for consister tests 1033/94 spointed accordingly at real relation. Explanation should be provided in case 10
ORCARDPAID Change of leadh ame laubmount finishing network (internal)	P P except of surface restricted of die attach paid and e.g. change from Ag Sant to NPI4 protection layer P except bond area (e.g. influence in adhesion to make	A					р						A				A 8*							Regarding applicable materials please who (g) is required for consister leafs 1023.75 splated accordingly at real restrict.  Explanation should be provided in case 10
OEC-LED-PA-03 Change of lead and heat skip plating material/plating thickness (science)				к -			_						A		-	• к	-						7	(I) is required for commuter texts I/CE/PM application recomming of real resistor. Explanation should be provided in case I/C Regarding applicable materials, please other
	P P processably an enfantly on based level can be a grange from \$40.000 pc.  P P operation of the process of th	A .													P.1		W W	-	Ŧ		تلك	41	1	Explanation should be provided in case Ho Meganing applicable materials please of
ORCHOPAGE Burg Moral / Mad System (moral) ORCHOPAGE Dis attach nomini	P P Stack do or cle to substate e.g. change to Ph-tree nuterial P P Change of the stack restelling a part solder, epoint, e.g. change of Ag gave to Au glack (Travial management must be respected.	B & Incident FDh Is changing		•									W N		:						N N	. N	Ħ	
OEC-LED-PA-OE Change of wire bonding	ed). Thermal management must be respected.  By Manuriat, diameter, change in bonding diagram and if or all good possible to discuss the control of diameter is process resulting in a new technology.  By Change Storm Super to Stylin to 25 years diameter as go change Storm Super to discuss bond and change from simple to discuss bond and change from strip by the Storm beat Policy of the Change Storm Super to discuss the policy to discuss the policy to discuss the Storm Storm beat Storm Start Storm			P,D -													P,D				D, @P D, @			Sile audit for material change with impact As in Cu) recommended.
OECLED-PAOT Change in material for sub-components (sociating LED drip & LED package related terms) with impact or agreed specifications.	P P Change of sub-component supplier using different a common to supplier could be conducted to an accumulation of sub-component supplier using different between the sub-conduction and sub-component supplier using different a common to sub-component supplier using different as a common to sub-component supplier using the necessary sub-component supplier and component sub-component sub-component supplier using the necessary sub-component sub-component sub-component supplier using the sub-component sub-														+	-	H	4	+	+	-			Qualification effort depends on type of ob-
CECLED-PA.OF Challet in Robins in visibilities for Value of Value	P P to Chronic Opportunation as the control of the control of the control opportunation opportunation of the control opportunation opportunation of the control opportunation opportunation of the control opportunati	B Shaled  Deck of ORCLEDOS 41 is also absolute.		P. @•			-					++	-			-	P	#	÷	+	+	р		- Learning about the periods on type of the
	Y - No change in product beging P: change can influence the imaging of final product Change of most compound, encapeutation, or easing				-		_		_		- 0	1	-		_		_	_						
OSC LED-PA-09 Change of mold compound encapsulation leading material	P. Change or process reaging of the product of residence of the product of the pr	A Omit if OECLED 0841 is also affected.		•	•	-	•		Р	D -		3	Р		Р	т -			•   •		D, @P D, 6			
ORC-LED-PA-10 Change of convenion material ORC-LED-PA-10 Change of direct supplier for convenior superial	P P Chance of representations.	C Owsk if ORCLEDOS41 is affected for applicatifythologistic parameters.		•	•	- 1	•		Р			-	Р		Y		p p	Р .	4		Y Y	Υ		•
ORC-LED-PA-11 Change of direct supplier for conventer material  ORC-LED-PA-12 Change of conventer process technology	P Revisiops with some numerical epocification     reverticatingly for convenier production     P E no influence on eio performance of product:     convenion, e.g., change from stamping to printing	C Check Carry change in electro-optical of C shared-lendon results in change of data		•	•	. 1			P Z				p Z		P Y		p Z				P P	r P		
CEC-LED PA-TS Change of product making	P Was sugginer with traver restrict of quantitation     P P The sugginer with traver restrict of quantitation     P P The suggestion of the property of t	B Share ORC-LED-GR-01				- 0								т	_	т .			#					
country or product making	P: though of cornect or change of appearance of data (#4) marking of catholics; and contact colors					-		-							+		H	4	÷	#	4	#	7	
ORC-LED-PA-NI Change is process technique (e.g., de attach, midding, placing, trim and form,)	P P Any change in assembly process technique e.g. change die attached from gluing to saidening:	A or B. Pinnan climb of EQUIPMING and other type of changes of malerial (DECLED PASSASTICATIONS) on B. E. B. Pinnan change is covered in a separate change in covered in a separate change in oil 10 in in.			-	-			-			-	-	-			-			1				Qualification effort depends on type of ch
OSC48D-PA-93 Process litegrilly: Tuning within specification	- P Variation within process specification e.g. process control	c							-			-	-	-				#	#					
ORC48D-PA-NI Change of direct numerial supplier with no impact on specification	P Change of suppliers e.g. for lead frames, wire material, Change of suppliers e.g. for lead frames, wire material, ESD-diode	C Recumption that change material specification remains unchanged. Otherwise see change of material.			-	-   -			-			-	-	-	-		-		45				الت	- See sharps of material.
DECLED-FA.17 Change of specified executily process sequence (additional and/or deletion of process sequence)	Addition or deletion of a process step in assembly process sequence with potentially explicate repeat on  I P Per process process process process process process or process p	C Single case assessment recessary to should possible obsessions or no.															-	- 7						- Qualification effort degends on type of of
DECCASO PAIRS  New assessing location or transfer of assessing to a different not previously released.	P. Industrials on product integrity     P. Industrials on product infearity executed     P. Industrials on product infearity executed     P. Industrials industrial infearity executed     P. Industrials industrial infearity executed in the engineering of the industrial i	C Ave E Impact on other type of changes described under PROCESS ASSESSED, and EQUIPMENT OSC LED-SQ-01													+		H	+	+	+	+	+	#	. Contract of
OSC-LED-PA-18 New assembly location or trained of assembly to a different not previously research location/resized PACONSIDE/PPAC		C described under PROCESS ASSEMBLY and EQUIPMENT OSCILLOSQUE and EQUIPMENT OSCILLOSQUE						<u> </u>			-	<u> </u>	•							لنب		لنك	<u></u>	Qualification effort depends on type of all
ORCLED-PE-01 Outer Packing knjeping specification change	dimension changes indirect product packing  I P I small changes in dimension or appearance P in number of reless in the packing are of changing					-			-			-		-	-		-	- 7	4	-			-	
ORCLED-PR-02 Dry pack requirement change	P (I): Relaxation of dry pack requirements (I): MEL 3 + MEL 1     P): Tightening of dry pack requirements (P): MEL 1 - MEL 3	g Own / ORCLEDOS41 is also affected.			-	-	-		-			-	-	-	-		-	- 7		-				-
	P P dimension change of direct product packing e.g. SMT pocket in tape shanges.																							

			Change of labelling also on real.  I additional information no change of previous information.																							_	
LED	ORCHIDPINE (	Change of booling I	P. change in content of previous information	(I) e.g. shiftend information (No-EE stamp) (P') e.g. change of customer specific information	9 5	Owk / ORCLED 0841 k also affected.			-	-	-	-		-				-	-		-	-   -					
un .	cecumoso a	Production from a new equipment/boil which uses a different/basic sechnology P	Change in process technique which is not already covered above.  Note: Major changes affecting the product not covered by the table require also a PCN:	e.g.change from single under to batch process e.g. over pad medabation e.g. deniar satting (mechanical to base satting)	B 6	Owak / LED-03-01 is also affected. Consistent stability should be assessed.		-	-	-		-	-	-			-	-	-		-				-		Qualification effort depends on type of shange.
	ORCLEDEG/00	Production from a new equipment/boll which uses the same basic technology involvement equipment or extension of existing equipment cools without chance of	PCN/required for dedicated equipment for sensitive component production.  P to it if change does not influence the inpetits of the fin.	e g change from single side to multi side handler.  (5) e g extension of existing equipment pool, already  guilfine.  (F) e g extension of disducted equipment in case basis exhibiting yall freed to be prosen.	c			-	-	-	-	-		-				-	-		-				1-1		Qualification effort depends on type of change.
LID	ORCHIDIO III	Change in final test equipment type that uses a different technology	product BY if impact on anoded immersity is anticipated. Change of the star platform is a major text program changes, new stem tenders, in the product specification is not affected. It product specification is not affected. It product specification is affected.	e.g. change in test method flore od to tumen.	с.	E in case of bare die delawy			-			-		-				-		т .					-		Clage FEEK I delta suretalian
UID UID	00040741	TREET PLOW  Move of all or part of electrical wafer test and/or final test to a different position/electromator  p	P. anduct specification is affected  P. Yester sander or reloadion.	e.g. Dud source stodegy	с.	E income of basis dis delivery			В	-		в		В	- в	8 B				т .					Ħ		Claye MEX / della corelation, additional operativation check is should be considered for Water Institute
UED UED			ing, test flow block, reduction four three temperature instancements to the temperature measurements.  Plange in burnie if ran in process.  1-5 if change does not only because the integrity of the fin process.  Set if it is not not not only in impacts is set followed.	(-) e.g. led implemented without customer requirement	Ť								Ť	i i							Ħ				Ħ		
шо		Change of the test coverage testing process flow used by the supplier to ensure data sheet compliance (e.g., elementarized data) of electrical measurementates flow block; — released on enhancement of numbering procedure or eampling!	<ul> <li>Things in burns I fan is process.</li> <li>(-) if change does rotischience the integrity of the fin product.</li> <li>(F) if impact on product integrity is anticipated.</li> </ul>	(F) e.g. reduction from three temperature measurements. It is too improve the manuscreeneds as e.g. change in turn in / nun in process.	c				-	-	-	-		-			-	-	-							•	
LASER DIODE LASER DIODE LASER DIODE		LASEN BICCH (AU) ANY Any change with impact or agreed upon technical contractual agreements.  P	Intended to be used if no other type of change if applicable but the change affects agreed suchrical contractal agreements.	T	. 1				Ι. Ι	. 1	. 1	. 1		Τ.		T.I . T		T .			T . T		.		T.T		
LASER DICCIE		Any change with impact on technical interface or processability/manufacturability of customer, which is not covered in the maria below	p See processibility on board level sectional interface means component terminals		n 5	Check if OSC-LAS-OS-01 is affected Processability should be assessed.			-	-	т	-						S,T	-		-						
LASER DICCIE	OEC-LAS-ES-O1	CATA THEST	_		A			E. gs	es		E, gs	E	. Е	E			1 .		E				E E			. е	
LASER DIODE	OEC-LAS-DS-03	Connection of data sheet or issue of eratra	Change of application relevant information (e.g. a present public current) due to a socialization (e.g. a product or prod	e.g. change of bits.  de g. Strata  de g. change of typ, values due to new information about compared behavior.	Α.																						
			I when is uninees that install spatialization of the state of Changing and Subsequent Changing and the state of Changing Assessment association required.  It Definition of an additional parameter which was not perfectle bettine  Pritting as a Assessment of the state of the Assessment of the Subsequent of the Subseque	e.g. reduction of max. aboved toward witage due to improved statistics.																					-	<del></del>	English size this is not a contact change our additional
LASER DIODE	CEC-LAS-DS-03	Specification of additional parameters II	<ul> <li>F times is a risk on supply chair where at least one additional other PCN-relevant change category will leade.</li> </ul>	E e.g.: adding newthered parameter E e.g.: additional temperature coefficient parameter			• •			- 1		-							-			-   -				• •	Pointains erice this is not a product change, only additional information. Classification: C
LASER DICCIE	OEC-LAS-DE-OT	Design changes in epitasy.	Any device relevant changes in design / layout of epitasial layers  Not included: Changes within design rules and design executation without affecting specified functions.	p. on a change of banks Thickness.  In a change of sounguide layers.	c	A in case of LIDAR application is affected				-							- н	-	-		-						
LASER DICCIE	OEC-LAG-DE-03	Design changes in routing/layout.	Any device wineard changes in deeps 1 larged of explanatingers.  Not behavior: Changes within deeps raise and deep explanatingers.  Not behavior: Changes within deeps raise and deep changes and restablish.  Any change in only deeple 1 larged. Provide information deeps raise and restablish.  Any change in only deeple 1 larged. Provide information deeple 1 particular information deeple 1 particular information.  But behavior: Changes within deeple 1 raise and deeple particular information of the particular inform	e m.g. change in legical of current spreader, Dhibhness of current spreader m.g. midulish of bond pail size m.g. or what of bland pail bland leave face! m.g. change of beat spreader dimension and positioning of these dim		A Incase of LIDAR application is affected									. 8	B D,M	- M				м	м .				١.	TR right be considered for complex die bond technolower
LASER DICCIE	OEC-LAS-DE-03	numer .	specification without reflecting specified functions, parameters and reliability.  Strong of active area.  Not included: saving street/sortion line	m.g. verbank of bond pathtons law facet m.g. shange of heat quesion dimension and positioning of laws de Tropical white of de.		Please check if change in process technology (OEC-LAS-PW-0E) is also with the change in the change i									- в										H		,
			Not included: saving streether/scribe line	,		Inchange (DEC-LAS-PW-05) is also affected. Check if OEC-LAS-05-01 is affected which leads to a change of the electrospic parameters or decito-ploce.																			Ħ		
LASER DIODE	OEC-LAS-DE-OF	P (Laser package (except leadflame)	<ul> <li>any change in focusing thickness any change in form or dimensions</li> </ul>	e.g. change of diremosions e.g. change of x, y, or 2-dimension of the package		A In-case of LIDAR appliaction is offered		•	•		٠	•	•	-		B D	- D		L	т -	D	D •		5 5	5	4	
LASER DICCIE	OEC-LAS-DE-OS	Design of teachane	any change of leadframs / submount dimensions any change of outer dimensions	e.g. change is teadframe / carrier dimensions in x.y. or 2 decision e.g. change is windown buping e.g. change is windown to be teadbaser not affecting the elo performance & reliability of the		Check if OEC-LAS-08-01 is affected which leads to a change of the electrospic parameters or distributions.  At Incase toping of wirebond is offered.							. @s			8 D				T 2	-			5 5	5	4 .	
LASER DIODE	L ,	PROCESS - WAPER PRODUCTION	any crange to communicate	affecting the ero performance & reliability of the device																				ш	ш	_	
LASER DICCIE	OECLAS-PINES y	New Change of water substate or carrier material P	P Newworks substate material.	e.g. different water material to currently released material planning from Sepphier to Silcony e.g. different concession of epithale substrate	e d	Check if OEC-LAS-08-01 is affected which leads to a change of the electropic parameters or distributions.		р .			р						. р				р	р р	р р				
						At In case of LIDAR application is affected.																			1	4	
LASER DIODE	OEC-LAS-PW-02 y		<ul> <li>change of wafer dameter resulting in equipment and process changes.</li> </ul>			Typically this type of change affects other changes i.e equipment/process technology - they need to be cheffed in addition Check if OSD-LAS-OS-61 is affected		•	-	•	•	٠		•				٠	٠	-	-		РР		H		
LASER DIODE	OFC-LAS-PRINTS		Change in final wafer trickness     Change in electrically active doping? implantation electricities in a new technology.	e.g. change in that chipide thickness.	c d	Check if OSC-LAS-OS-61 is uffected which leads to a change of the electrospic parameters or distributions.		р .	· c	-	٠	:	- @s		- B			-	•		-	•	P P		-	•	
LASER DICCIE	OECLAS-PINOS /	Change of electrically active dependentation element P	element resulting in a new technology.	e.g. change from the to C an disparit.  e.g. shange of institute layer thickness between in and p-	_						,		- 84				. ,						1		Ħ		
LASER DIODE	OLC CALPRICAL (	Change of stacking P	P change in layer sequence or thickness		^ 3	For LibRic Typical change of stectrical or optical parameters within specification needs to be evaluated on application level.		•	ı.	-			- 66					-	-	1	1						
LASER DICCIE	OECLAS-PINOR ;	New Change of metalization (specifically chip frontside)  P  New Change of metalization (specifically chip backside)  P	P Income:  Change of bottom layer of die (between die and beattenerbarrier). Change in process, nuterial, or dissessions numerate.	e.g. shange in band pad metallization thickness e.g. shange from Au bichartile	c		• M	•	÷	-	·	:		:	•		- M - D,M	•	D,M	1 1	D,M	M DM	M,B M,B D,M D,M			•	
LASER DICCIE	OECLAS-PINOS	Change is process technique (e.g. significant process changes like littography, ecot, oxide deposition, die back surface preparation/backgrind,)	Change from wet to dry exching, change from horizontal to vertical oven for caddrdon, change from contact titho into shapper titho,	e.g. change from well eith to dry with e.g. change from lawer calling (waning) to planes calling (saming)	c	Et change from CVD dep to spuller dep for back-confluences meditization. In case of new equipment please check if OEC-LRS-PA-17 is also affected.												-									Qualification effort depends on type of change.
LASER DICCIE	OECLAS-PINON ;	Process Integrity: Tuning within specification	Variation within process specification	e.g. process control	c				-	-								-			-						
LASER DIODE	060 LAS-PW-10	Change of material supplier with no impact on agreed specifications	<ul> <li>Change of water supplier. Change of supplier for changes needed for water production.</li> </ul>	P. e.g. change of water supplier.	e e	Change of earlier supplier please check if OEC-LAS-PW-01 is affected.			-	-	•	-		-				-	÷		-						Qualification effort depends on type of change.  Qualification effort depends on type of change.
LASER DIODE	DECLAS-PIN-12	Change of specified water process sequence (partition and/or additional-process step) —  New Change of facet passivation —	New change which is not consend by another type of change. Risk is to be assessed.  Change of material, thickness, process and stacking for ASHR review coating.	e.g. additional situating process in water production  2. e.g. reduction of AS reflectedly by reducing early stacks		Check if OEC-LAS-08-01 is allocated which leads has allarge of the view page of the view by the page of the view of the leads of the le		v -									- v				P,V	P,V -					PPAP has to be updated.
LASER DICCIE		Change in die coating or passivation P	Change in numerial, thickness, and process for coating and passivation	e.g. change from SICO to SACO	c		- • P		Р						. P	р .	. p	-			Р	P - @•	P P		H		
LASER DICCIE			New water prophection location or banefer of water production with possible additional changes.		c	A or B: Impact on other type of changes, described under PROCESS - WAYER PRODUCTION and EQUIPMENT sategories of this DeQuMa			-	-									J		-						
LASER DIODE	OEC-LAG-BO-01	BANK DIS DELIVERES (Water present changes not covered in this section shall be handled according to change of foot side neralization.  P	p Change in bondpade, material, pad phth, surface changes, layer trickness	e.g. change from duto to alloy		A in coast Wild authorism sufficient  A in coast of chip-on-board such along	M							+-									M, B M, B		H	+	Reasonable package type for reliability testing to be aligned
LASER DIODE	OEC-LAG-RD-02		Changes, layer trickness  Change of bottom layer of die (between die and landframe/tarrier). Change in process, material, or differential.	n.g. shange in wer pad metalla allan  n.g. shange from Au to Ju Allay		technology  Check if OEC-LAS-08-01 is affected which leads to a change of the electrospic parameters or distributions.  A tricase of chip-on-board technology																	D, M D. M				Reaconable package type for reliability testing to be aligned between supplier and customer.  Customer application-needs to be checked due to potential system voltage differences. Reaconable package type for reliability testing to be aligned between supplier and customer.
140000			Meditarimicanian). Change in process, natural, or dimensions.  Needed information for piok & piace machine.  E conly additional number of chips.  P. Change in spacing between chips and form of safer.			detrouses. A in case of chip-on-board socialogy A in case of chip-on-hours																			$\Box$	_	
LASER DIODE	OEC-LAG-RO-OF	Change of water setup or number of des on water.	tonly additional number of chips     Extranse in seasons between chips and form of eather     Extranse in final Chip height (including carriers) very     race and usually combined with a restellal change     [shange of carrier reserve]	e.g. information change for you. E. place muchine.		A in case of chip-on-board technology  Check if OEC-LAS-OS-01 is also affected.  A in case of chip-on-board schoology		р .	р		p	p		P	рв	В Р		P	p			. p	р р		H		Reasonable package type for reliability testing to be aligned between supplier and customer.  Reasonable package type for reliability testing to be aligned.
LASER DICCIE	OSC LAS SO OS		p change of carrier material  Change in material, thickness, and process for coating and possibilition			A in case of chip-on-board technology  Check if OEC-LAS-09-01 is also affected.  A in case of chip-on-board technology										P	. р				P	p 0			H	Ħ.	Setween suppose and customer  Reasonable package type for reliability testing to be all-mad.
LASER DICCIE		Change in die coating or passivation P PROCESS - ASSEMBLY	and passivation	· · · · · · · · · · · · · · · · · · ·				_		4			<u> </u>	<u> </u>						1			1		H	¥	between supplier and customer
LASER DIODE	GEC LAS PARON	Change of leadframe/submount base mass/sil	P Newtrachamenshmount naterial (newin composition)			Check if OEC-LAS-OS 41 is affected which leads to a change of the electrosptic parameters or distributions.		•	-	-	٠	Р		-			3 A	•	P,1	• P	A	۸ .	-   -		-		Signanation should be provided in case HSS test is not applicable. Regarding applicable materials please refer to the Whisker standard.
LASER DICCIE	OEC-LAS-PA-02	Change of leadhamenut mount frielding resorted (mornal)	Change of surface material of die attach pad and second bond area (e.g. influence in adhesion to mold compound, wedge bond relability)	e.g. change from Ag fasts to NPID protection layer e.g. change from Ag sports Au sport e.g. change from NPID to NPIDAU				•	•	-	•	Р		-	- •		- A	•	P,1	•	A	A GP			-		HOTE text should be considered for automotive extentor applications. explanation should be provided in case HOTE text is not applicable.
LASER DICCIE	OSC-LIKE-PIK-03	Change of lead and heat sky plating material plating thickness (scannal)	Change in naterial and process technique for final pin termination (e.g. pure firl.) Hence package, processability and reliability on board level can be writted by generic data. Classification-depends on small of chance.	e.g. change in heat dug stack e.g. change for an NPOAN e.g. change of layer buildness.			u	к -	-	-		Р		-	1 -		- A		P,1	• к	А	Α -					Explanation should be provided in case HISI test is not applicable. Regarding applicable materials please refer to the Whisker.
LASER DICCIE	OSC-LAS-PA-OI (	ikump Material / Metal System (internal) P	P Stack de or de to substrate	e.g. change to Pti-free material	A					-				-			- W					w •					
LASER DIODE	GECLAS-PA-GS G		Change of die attach material (n.g. saft solder, eposy, etc.). Thermal management must be respected.  Malerial, dammin, shange in bending dagsum and / or approximate processor and find in a management.	e.g. Au glue to Aulin coldering e.g. change from Au ts Cu material e.u. change from Zium ts Zium dameer	а,	& In-case Rth is changing		• .					-				- N		•		Q	Q •		N N D, GP D, G			Site audit for material chance with instact on books were a
LASER DIODE			Change of sub-component supplier using different	e.g. change from Au to Cu material e.g. change from 25pm to 25pm dameter e.g. change from stops to doubte bond e.g. change from stort bond to vision on test bond. e.g. change from stort bond to vision on test bond. e.g. using a different FSDP or photodode in testination and material than previously		Check FOEC-LAS-28-41 is also affected.		P,D -				-			•			•		1 1	P.0		1 1	0. gp D. g	D, @P		Som Au to Cur recommended.
				technology and material than previously		affected. Check if OEC-LAS-CS-C1 is also affected.		P. @•								- u			U		Р	р •		p p	р		an anno seperat un ighi ci change.
LASER DIODE		Die Overcoat / Underfül	Nu change for compas packages like tip chy.     Nu change in product integrity     Nu change can influence.	resistance		Medel																					
LASER DIODE		Dis Overcost / Underfill  Change of mold compound/encapeutation/seating material P	Supporting layers for complex packages like flip chip.  — 'Ns change in product integrity.  P: shange can influence this integrity of final product.  Change of most compound, encapsulation, or exaling exercial might be a	nestance  a.g. PPA neid compound		Check if OEC LAS-OS 41 is also affected.		_		-			ge	Р	ь.		3 P		р	т.	р	р .		D, @P D, @	P D, @P	4 .	
	OSC-LAS-PA-OS (	Change of mold compound encapsulation is sain granterial P	Respirateg layers for complex packages are by city.  — No training in product integring  — No training in product integring  Change of most compound, encapeutation, or easing  package integring the affected updood function in case of  package integring the affected updood function in case of  package integring death of package function in  another for the change of most or package integring  package in the change of most or package in the change of  Change of most initial class.	Geologie de branche der branche     Geologie de branche de geologie de branche     Geologie de geologie de branche de geologie de geo	A					-	· Y				D .		3 P		P	т .		p .		D, @P D, @	$\perp$	4 -	

_							On the Samuel Annual Institute		_																				_		
LASER DIODE	060 LRS-PN-12	Change of converter process technology		P. II care or impact on product marging	e.g. change from ediume consention to layer consentiar; e.g. change from stamping to printing of layer e.g. change conserve attach technology		Check if any change in electro- optical characteristics results in change of data sheet OSC-LKS-DS- 81		•	-	٠	-	Υ	•	-, @6 Z		-	-	. z	٠	Y		z	z	z -		Y	Y	٠.	•	
LASER DICCIE	OSC LAS-PN-13	Change of assentity of additional internal components (e.g. lanses)	-	P in case of impact on product integrity	e.g. change from soldering to gluing process		Check if any change in electro- optical characteristics results in change of data sheet OSC-LAS-DS-			-	-	-	-				-	-			-		-	-	-   -	1	-	-		Qualification et	fort depends on type of change.
LASER DIODE	GEC LAS PA-14	Change of material and i or supplier of additional internal components	١.	Change of supplier using different technology/materials	e.g. change of lens resterial, optic properties e.g. change of submount resterial	c	Check if any change in electro- optical characteristics results in change of cata sheet OSC-LAS-OS-			-	-	-						-		-	-					T.				Qualification of	fort depends on type of change.
			H	P: is case of impact on product integrity			21 Check if any change in electro- optical characteristics neutra in change of data sheet OSC-LAS-09- 91															+	+	-	+	+	H	-	+		
LASER DICCOE	OSC LAS PA-15	Generation of hermaticity	۰	P rewtechnology for hematicity	e.g. change of widing process for next cans e.g. change of gluing of transmissive window	c	change of data sheet OSC-LAS-OS- 91 St in case processability is affected to a laser additional			-	4	-	4	4 -			-   -	-		4	-		4	4	-   -		4	4	4 4	-	
			Н	Marking on device.							-		-				+					+	+	-	+	+	$\vdash$	-	+		
LASER DIODE	OSC-LAS-PA-16	Change of product marking	1	Marking on-device.  E change in appearance; readability not affected  E, change of content or change of appearance of data marks code.	ing making of cathodis			•		-	-	-	0				-	-		т	-	т -	4		4	¥.	L		1	•	
LASER DIODE	05C LAS-PN-17	Change in process technique (e.g., die attach, molding, plinting, trim and form,)	١.	P Any change in assembly process technique	e.g. change die attached have gluing to soldering		A or B: Please check if SQUIPMENT and other type of changes of material (OSC-LAS-PA-04/05/07/05/05/10) are affected.																		Ш	1				- Continuos et	for depends on time of change
							affected If the process-change is concredit a separate change ID only this is applicable.																								
	GEC LAS PA-18	Process Integrity: Tuning within specification			e g jewesk carbs	c				-	-	-	-				-	-		-	-		+-1	=	#	÷	F	=			
LASER DIODE	GEC LAS-PA-19	Change of direct numerial supplier with no impact on specification	-			c	Assumption that change material specification remains unchanged. Otherwise see change of material.		• •	-	-	-	-				-	-		•	-				4	<u> </u>	H	_	4	* See change of a	material.
LASER DIODE	OSC LAS PAGE	Change of specified-assentity process sequence (additional and/or deletion of process step)		Addition or deletion of a process step in assembly process sequence with potentially significant impact on it is product performance it is influence on product imagify. P. influence on product integrity expected.	e.g. additional or deletion placesa channel process.	c	Single case assessment necessary to stendify possible interactions or risk.			-	-	-	-					-			-		-	-		1 -	-	-		- Qualification et	fort depends on type of change.
			П	R influence on product integrity espected			Aur St. Impact on other type of changes described under PROCESS ASSEMBLY and SQUEPMENT OSC- LAS-EQ-01															+	Ħ	_	+				#		
LASER DIODE	OSC LAS-PA-21	New assembly location or transfer of assembly to a different not previously released location/libe/subcortractor		P Assembly transfer or relocation. Includes transfer as well as additional site.	e.g. dual source / fab stollegy	c	ASSEMBLY and EQUIPMENT DEC- LAS-EQ-01  A In-case LDAR application is affected.			-	-	-	-					-	-		-		- 1	-	-   -	-	-	-		- Qualification et	fort depends on type of change.
LASER DIODE		PAGGINERANG	Ш				& In-case LEAR application is affected																		_	_	ш		_		
		Outer Packing httpgring specification strange		K number of reets in the packing are changing	e g your tex			. •		-	-	-	-				-	-			-		-	-	4	4		-	4		
LASER DIODE	OSC LAB PS-02			P (S) Technical of dry pack requirements (P): Technical of dry pack requirements.	(f); smil 1 → Mil. 1 (P); Mil. 1 → Mil. 2		Check FOEC-LAS-09-01 is also affected.			-	-	-	-				-	-			-		-	•		Ŀ		-	4	-	
LASER DIODE		Inner Packing/Mipping specification change	P	dimension change of direct product packing     Change of labelling also on reel.	e.g. SMT picked in lape shariges. e.g. sharige of tube/bray layaut		Check if OEC-LAS-09-01 to also allested.		Р -	-	-	-	-				-	-		-	-	т -	45	4	- p	Р		4	4		
LASER DIODE	GEC LAB PS-OI	Change of labeling	Ľ	P Change of tabeling also on reef.  It additional information no-change of previous information  F, change in content of previous information	(E) e.g. additional information (MarCl stamp) (F) e.g. schange of continues specific information		affected.		•		-		•					•		-	-	-   -	1 .			Ŀ					
		NATURE OF THE PARTY OF THE PART	Ħ				Check if OEC-LAS-09-41 is also affected. Contoined stability should be presented.																			f					
LASER DIODE	060 LAS-60-01	Production from a new equipment tool which uses a different basic technology	P	Change in process technique which is not already covered above.  Name Robert Changes affecting the product not covered by the table require also a PCN.	in government single water to batch process; in grown pad metallization in grown pad metallization in grown pad metallization to baser cutting)		Controller stability should be assessed.  At In-case LEAR application is affected.		1	-	-	-									-									- Qualification eth	fort depends on type of change.
LASER DIODE	ASSULTATION AT	Production from a new equipment/bool which uses the same basic technology (replacement equipment or extension of existing equipment pool) without change of	Ħ	PCN/required for dedicated equipment for sensitive component production.	e.g. shange from single side to multi-side handler. (-1) e.g. extension of existing equipment pool, already	c	africad.																			f		#			
		process	П	PCN/required for dedicated equipment for earnables component production.  P (y) if sharp descent influence the ingentity of the fluid profess.  BY if meant on entered informative is antistated.  Changes of tester collation in a major feet process.	(9) e.g. extension of deducated equipment in case book lendensings still need to be process.								-								1			4	щ	¥.		4		- Quancation eth	nun vegenud on type of change.
LASER DIODE	06C-LAS-6Q-03		1	Change of teater platform (e.g., major test program changes, new tester othertice,).  It product specification is not affected.  It product specification is not affected.	e.g. change in test method from all to lumen e.g. change of nearfield measurement (LIDAR)					-	-	-	-					-			-	т -	-	-	٠   ٠		-	-	F - 1	Gage RSR / del	da convistion
LASER DIODE	OSC LAS-TF-01	TEST FLOW  Move of all or part of electrical water test and/or final test to a different to cateriniste value or salts.			e.g. Dual source stisslegy	c	1				В	- 1		в -	- 8	- 1	8 8	В			- T	т -	1.7	Ŧ	Ŧ	Ť.	H	Ŧ	Ŧ.	Gage RBR / Ge	ts convision; additional specification check
LASER DIODE		QOATE	Ħ				l e					$\rightarrow$	_	$\pm$			$\pm$					_	=	=	ŧ	一	Ħ	丰	+	H enough to con	nadased for Works Sealing
LASER DIODE	060 LAS-QG-61	Change of the text coverage texting process flow used by the supplier to ensure data sheet compliance (e.g. elemention/addition of electrical measurement text flow block; retaxation/enhancement of monitoring procedure or sampling!	-	e.g. sect flow block, reduction from three temperature manuscriences to the temperature manuscrience. On the temperature manuscrience, change in the temperature manuscrience, p. p. of change above our elitimation the immediaty of the final product.  (Ps. 8 impact on product integrity is anticipated.	(-g e.g. text implemented without customer requirement (PS e.g. reduction from three temperature measurements to text temperature measurements	c	A In case LEAR application is affected			-	-	-	-					-			-		-	-		1 -	-	-	4 -		
PO		PHOTO DICOR / PHOTO TRANSPETOR (PD)	Ш	groduct. gry if impact on product integrity is anticipated.	e.g. change in burn in / run in process.																				_	_	Щ		_		
PO PO	OEC-PD-AW-01	ANT		Etended to be used if no other type of change if applicable but the change affects agreed technical contractual acceptance.	T																			-	7			-	т.		
PD	GEC-PD-WIGE	Any change with impact on technical interface or processability/manufacturability of outsimer, which is not covered in the martis below		P See processability on board level scholar interface means component terminals			Check if GEC-PD-03-01 is affected.						т					-		S,T						1					
PD							Processibility should be assessed.		_			_	_	+	_	++						+	#	#	#	#	#	#	+		
PD	060-90-06-01	Change of datasheet parameters/electrical specification (min.max./typ. values) and/or Pulse/DC specification		Change of application relevant information (n.g. of community pulse currient) due to a solutional product or process change. The solutional product of product of product of product of product of product or solution solution or solution products of product or solution products of product or solution products of products or solution and products of products or solution products or solut	e.g. change of die substate material: e.g. PD: change of disping level (xenolissity) e.g. change of billi.	A		-	. Е	-	-	-	ε	ε .	- 6			-		s	ε		-	-	. E	Ε	-	-		E	
PO	06C PD-06-02	Correction of data sheet or issue of errors		No technical change of product, process or test. New description of behavior which was not specified before or which is different from initial specification.  Please indicate clearly, that infrance contains this type	e.g. sinata e.e.g. change of typ. values due to new information about component behavior e.g. improved statistics.	A												-			-					1					
			Н	of change! Assessment is application required E Definition of an additional parameter which was not	e.g. reduction of max, allowed forward voltage due to insuroved statistics.						-		_				+					_	+	-	#	#	$\vdash$	-	#		
PD	GEC PD-06-03	Specification of additional parameters		P. Ethere is a risk on supply chain where at least one additional other PCN-relevant change category will	E.e.g.: adding newtested parameter E.e.g.: additional temperature coefficient parameter	A				-	-	-	-				-   -	-			-		-	-	1	1 -	-	-	F - 1	Formation since information Classification Cl	ethis is not a product change, ony additional
PO		DESIGN					A In-case of Austanche Photodode					Ť				<del>i i</del>						Ŧ	Ħ	一	Ŧ	一	f	丰	_		
PO	GEC-PD-DE-01	Design changes in epitory.	P	Ney device relevant changes in design l'layout of epitasiatinyers.  P Not lechaded: Changes within design rules and design specification without affecting specified functions, personates and rainfesting.	e.g. change of disping profile / Leyer Dickness.	u	At In-case of Austanche Photodode (APO) and Single-Photon Austanche Diode (SPAD)	* *		•		•	-	•			-	-	- н		-			1 -		•	-	1 -		•	
PD	060-90-06-02	Design changes in routing layout.	p	Pery change in chip-design I layout. Provide information if design/tayout change in optication electrical. P Not included to Changes within design rules and design specification without reflecting specified functions, parameters and reliability.	e.g. reduction of bond pad size e.g. change in year size and III fluster	c	A Change of optical characteristics									- 1	8	D,M	- M		-		м	м		1				TR registe co	midered for complex die band technologies
80	060-P0-06-03	Dia above		parameters and reliability.  shrink of active area.	Typical strink of die.	Α.	Please check if change in process technology (DEC-PD-PW-06) is also affected.										s 8			•			+	_	+	١.		_	+		
			H	P Strink of active area. Not included: straing streether/buttle line			Check if OEC-PD-09-01 is affected which leads to a change of the electrospic parameters or distributions.															Ŧ	+	+	Ŧ	t	H	#	#		
PD	OEC-PD-DE-OI	PD package (except leadfame)	۰	any change in tousing thickness any change in torn or dimensions.	e.g. change of dimensions e.g. change of x, y, or z dimension of the package						-						8	D	- D	•	L	т -	D	D			5	5	5 4	•	
			Н		e.g. change in leadframe / carrier dimensions in xy, or		At Income of LibAR application is affected.  Check if DBC PD-DB-01 is affected.															+		4	4	₩		4	#		
PD	OEC-PD-DE-OS	Design of leadtane	P	P any change of leadframs / submount dimensions any change of outer dimensions	e.g. change in leadframe / carrier directions in xy, or 2 direction e.g. change inner design of the leadframe not affecting the eto performance & reliability of the device		Check if ceopodes is affected which leads to a change of the electrosystic parameters or distributions.		•	•	-	٠	٠	•	-   -	• 1	8 8	D		•	٠	T 2	-	•			5	5	5 4	•	
PD		PROCESS - WAPER PROSECTION	ī				Check if cec/Poce on is affected which leads to a change of the electrocytic parameters or distributions.															Ŧ		Ŧ	Ŧ	Ŧ	Ē	Ŧ			
PO	06C PD PW-01	New/ change of water substitute or carrier material	P	P Newwarter substate material.	e.g. different water material to currently released material (change from Sapphie to Silcon)	c	electrosptic parameters or distributions. At in case of LIDAR application is	• •		Р	-	•	Р				-	•	- Р	•	•		P	Р	P P	Р			-	•	
	06C-P0-PW-02		H	- Change of water diameter new tion in waving	+		A to case of LOAK appearson is whereas. Sypically this type of change affects other changes i.e equipment/process technology - they need to be identified in addition.					+										+		+	+	t	H	#	#		
PD				P change of valer diameter resulting in equipment and process changes		c	Sectionally - they need to be positified in addition												1 1	•	•			4	4	F		4	4		
PD		New final water thickness			e.g. change in final chip/de trickness	c	Check if OEC-P0-09-11 is affected which leads to a change of the stechnoptic parameters or detablishment.			Р	-	٠	٠	•		- 1	8	٠		-	٠				• P	Р	•			•	
PO				Change in electrically active-doping / implantation element resulting in a new technology.	e.g. change formille to C.ax dopant e.g. change of holiston layer thickness between e- and p-	-			c -	с	-	с	-				-	-			•		4	4	_	•	-	4	4	•	
PO		Change of stacking			e.g. change of excruters. Leyer	A				٠			r					-	- F	-	-					•				•	
PO PO	OEC-PD-PW-0E OEC-PD-PW-07	New change of metalization (specifically chip frontside) New change of metalization (specifically chip buckside)	P	Change in merallication of bondpade, meaning, layer biocones  Change of bottom layer of die gestween die and sedimensions recessary.  Grange in process, material, or dimensions recessary.	e.g. change in bond pad metallization thickness e.g. change from Au to Aurilie	c c	& In case of change to Abminium metalization											•	- M	•	D,M		D,M					#	1		
			H	Change framework to day withing a change of	e.g. change from wet established yetch																	Ŧ	+	Ŧ	Ŧ	f	Ħ	#			
PD		Change is process technique (e.g. significant process changes like lithography, etch, oxide deposition, die back surface pregaration/backgrind;)	-	Change from wet to dry estiting, change from horizontal to vertical own for calderion, change from contact this into stepper time,	e.g. change from laser cutting (sawing) to plasma cutting (sawing) e.g. change from contact liths to stepper liths	c	Bt change from CVO dep to epither dep for backside/fromtable metaltization. In case of new equipment please check if OBC-PD-PA-15 is also affected.				-	•	*		-												1			* Qualification effi	fort depends on type of change.
PO	06C PD PW-09 06C PD PW-10	Process Integrity: Turing within specification	-	P Statistion within-process specification  Change of water supplier. Change of supplier for desirction needed for water production.  P Any change within is not convended by another type of change. Notice to be assessed.	A & process control	c				-	-	-	-	-   -	-   -		-	-			-	-   -	-	4	4	F		4			
PD	DEC-PD-PW-10	Change of material supplier with no impact on agreed specifications.  Change of specified withir process sequence (deletion and/or additional process step)	-	p character needed for water production.  p Any change which is not covered by another type of change. Note is to be annexed.	P. e.g. change of wafer supplier.  e.g. additional cleaning process in wafer production	c	Change of water supplier please shock if OEC-PG-PW-91 is affected.													-		1 1		+	+	t		+	÷	- Qualification eff	fort depends on type of change. Fort depends on type of change. Euplated.
PO	06C/PD-PW-12	Change in die coating or passivation	p	Change in numeral, thickness, and process for costing and passisation	e.g. change from SIC2 to SIMD e.g. change of acti reflective casting	c	It in case optical characteristics of anti-reflectice coating (MRC) are changed					р					, р		. р				р	р	p i	р					
			Ĥ	and passivation	e.g. unerge of extra lens.layer (Audianihe Photodisile (IPO) / Single Photon-Businshie Coole (IPAD)																	H		4	4	Ė		4	4		
			١. ا	Newwarter propduction location or transfer of wafer production with possible additional changes.		c	A or B. Impact on other type of changes described under PROCESS - YARFEN PRODUCTION and EQUIPMENT satinguists of the DeQAMa														J						-				
PO	060-P0-PW-13	Newwater production location or transfer of water production to a different not previously released location/laterisubcontractor					In the second second																								
PO			Ĺ				& In-case of LIDAR application is affected.																┸		╙				╙		
FO FO			P	production temporaries assessment changes.  and tog be sention "Process: Walter Production").  Change in both opened, resterint pad pitch, surface changes, larger trickness.	e.g. change from As to As allay e.g. change in over pad metalization		A tricker of chip-on-board schoology		w -			-	•		-   -			-			•	-   -		$\pm$	- M.	M, B		Ħ	ŧ	- Resonable par between supplies	okage type for reliability testing to be aligned or and outside:

OSC-90-60-02 Nava / change of backside nerolitoxion	p	Change of bottom layer of die (between die and P leadhame transer). Change in process, nuterial, or dimensions.	e.g. change from Au to Au alby		Check if OEC-PD-03-01 is affected which leads to a change of the electrospic parameters or destroylers. At its case of chip-on-board technology	 w -		-		•	-		-	-	-   -	-	•			•		-			• D,	M D, M	-	-		- Custor system Resid between	mer application needs to be ched is voltage differences onable package type for reliability on supplier and customer
OSC-PD-60-03 Change of water setup or number of dies on water.	1	P is edied information for pick & place machine. P is only additional number of chips. P change in spacing between chips and form of eather.	e.g. information change for pick & place machine.		A in-case of chip-on-board technology	 	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-				- 1	-	- 7		- Please	onable package type for reliability en supplier and customer
GSC-PD-60-01 New Soul water Skikkness	P	Changes in final Chip height (including carrier), very rare and usually combined with a material change (change of carrier material)			Check if OSC-PO-03-01 is affected which leads to a change of the electropist operameters or destinations. At in case of chip-on-board	 P -	Р				-		-	-	• в	В		-	-					-	р р	р	-	-		• Heats	onable package type for relabili on supplier and customer
OSC-90-60-05 Change in die coeting or passivation	Р	P Change in numerial, thickness, and process for coating and passivation	e.g. change from SIG2 to SIAG e.g. change and-ordiscise costing e.g. change of micro lens layer (APO, SPAD)		Check if OEC-PO-09-01 is affected which heads to a change of the electrospic parameters or destinations.  A in case of chip-on-board sectedary	 P -		-	р		-		-	-	. р	р		-	р	•	-	-	. р	Р	р р	р		-		• Reaso	onable package type for reliabilit en supplier and customer
PROCESS - ASSEMBLY  OSC-PO-PR-61  Change of leadhamenubmount base material	Р	P Newleadharreisubmount naterial (newin composition)	e.g. change from copper alloy to bare copper		Check if OEC-PO-05-01 is affected which leads to a change of the electrospic parameters or	 		-	- 1	•	-	Р	-	-				3	A		P,1	ī	P A	A	•	1-1		-	1		nation should be provided in car actie ding applicable materials pleas and
CEC-PD-PR-02 Change of leadframe/submount feliciting numeric (internal)	р	Change of surface material of die attacts paid and second bond area (e.g. influence in adhesion to mold compound, wedge bond relability)	e.g. change from Ag fash to NIPS protection layer e.g. change from Ag spot to Au spot		***************************************	 		-	-		-	Р	-					-	A		P,1		- A	A	- @P -	-	-	-		- explor application	est should be considered for au article. Instan should be provided in car arbie
OSC-PO-PA-03 Change of lead and heat dug plating material plating thickness (scannal)	٠	Change in numeral and process technique for final per termination (e.g. pure fir). Herein package, processability and relability on total of level can be verified by generic data. Classification-depends on smart of change	e.g. change in heat slug stack e.g. change from Sin into NSPOAu e.g. change of layer bickness			 u -	к	-	-		-	Р	-	-	1 -	-	-	-	A		P,1		к а	A		1-1	-	-		- Application of the standard	nation should be provided in case able rding applicable materials please and
OSC-PD-PA-66 Bump Market / Metal System (internal)	P	Stack de or de to substrate     Change of de stach material (e.g. soft solder, epocy, etc.). Thermal management must be respected.	e.g. change to Pt-free material	A		 		-				:	-	-		-	•	-	W N	- :		-		W Q		1	Ė	N I	_	Œ	
GEC-PO-PR-66 De attach numerial GEC-PO-PR-66 Change of wire bonding	P	College or law assess resemble prog. sets colored, or young, etc.). Thermal reanneament must be respective, the set of the set					P,D	-	•	÷	-		-	-			•			•	Ė	-	- Q - P,D					D, GP D.	_	Site a	sudt for material change with inquits to Cuij recommended.
Change is material for subcomponents (excluding photododeltransator drip & package related beins) with impact or agreed	P	Change of sub-component supplier using different technology/materials.	e.g. using different NTC diade in technology and	A	Check FOEC-PO-03-01 is also	 	-	-	- 1	-	-	-	-				-		-	-	-	-		-		+	-	+	+-		Scation effort depends on type of
GSC-PD-FR-GB Dis Overcoat / Underfili	-	Supporting Byers for complex packages like flip chip.  — No change in-product integrity  P. change can influence the integrity of final product.	material than previously  Prixing change of undertiff with change of thermal resistance		Check if OSC-PO-DS-01 is also affected.	 Р -	р.	-			-		-	-		-	U	-	-		U	-	. р	Р			Р	Р 1	р.		
GEC-PD-PR-08 Change of sold compound encapsulation hasting awarried		Change of work compound, encaparation, or exading enament night be affected optical function in case of P package netral effect (e.g. browning). Component assembly and board coating has to be assessed. Mis. min't be changed.	e.g. PPA resid compound		Check if OSC-PO-03-61 is also affected.	 		-	•	-	-	•	-		о -	-	-	3	Р		Р	т	. р	Р		-	D, gP	D, gP D,	@P 4	-	
QSC-PD-9N-10 Change of product marking	ı	Marking on device.  R change of correct or change of appearance of data sentir cone.	e.g. marking of cathode;			 	-	-	-	0	-	-	-	-		-		-	-	т	-	т		-			-	-			
OSC-PD-PR-11 Change in process technique (n.g., die allech, midding plating tim and fare,)	Р	P Any change in assembly process sechnique	e.g. change die attached from glaing to antiering:		A or B. Please check if EQUIPMENT and other type of changes of material CRCF-DFA-0-street changes in several official.  If the process change is covered in a separate change ID only this is applicable.	 	-	-	-	-	-	-	-			-	-	-	-		-	-				-		-		- Qualit	lication effort depends on type o
QSC-PD-PA-12 Process bilegity: Turing within specification	-	P Variation within process specification	e.g. process control	с		 	-	-	-	-	-	-		-		- 1	-	-		-		-		-					4		
GEC-F0-FR-13 Change of direct material supplier with no impact on specification.  GEC-F0-FR-15	-	p Change of suppliers e.g. for lead frames, who manerial, die strain, electrolisis conjuments		c	Assumption that change material specification remains unchanged. Otherwise see change of material.	 	-	-	-	-	-	-	-	-		-	•	-	-	-	-	-		-		+	H	-	+		hange of material.
OSC-PD-99-15 Change of specifind assembly privates sequence (published and/or dendure of process step)	•	P the product performance is no influence on product integrity P influence on product integrity expected	e.g. additional or deletion plasma cleaning process.	c	Eingle clase assessment recessary to shrelly possible intensitions or elsi.  Act its impact on other type of chances described under PROCESS.	 	-	-	-	-	-	-	-	-		-		-		-	-	-		-		H	H	4	4	- Qualit	lication effort depends on type o
OSC-PD-FR-15 New assembly location or loweste of assembly to a different not producely released localizes/before-besides.	P	p Assembly stander or relocation. Eclades stander as well as additional site.	e.g. dual source / ten strategy	c		 	-	-	-	-	-		-		-   -	-		-	-	-	-	-		-	-   -	-	-	-		- Qualit	lication effort depends on type of
PACKASHPPAS  OSC-PD-PS-61  Osc-Packashpasses seedsulon danse		dimension changes indirect product packing P Is small changes in dimension or appearance			Ī						Ť			Ť	Ť											一	F	Ŧ	荢	Ē	
	'	- must be of reals in the continue are chancing	mg picca bex		Check if OEC/FD0841 is also affected.		-	-	-	-	-	-	-	-		-	-	-		-	<u> </u>	-		-		H	H	4	4	H	
GSC-PD-PS-G2 Dry pask requirement change GSC-PD-PS-G3 tower Paskinghilipping specification change	-	P (() Enlands on of dry pack requirements     P): Tightering of dry pack requirements.  P dimension change of direct product packing.	(R) MSL 3 & MSL 1 (9): MSL 1 & MSL 2 e.g. SMT pooled in lape shanges			 	-	-	-	-	-	-	-	-		-	-	-		-	<u> </u>			-		. р	H	4	4	H	
GIC-PD-96-66 Charge of lateling	1	Change of liabeling also or reel.  E additional information no change of previous information.	(E) a additional information (NACE stamp)  (F) e.g. change of auctioner specific information		Check FORCPDOSet is also affected.	 	-	-		-	-	-		-				-		-	-	-				É	Ė	-			
SQUPPRET  CEC-PD-60-01 Production from a new equipment/less shows a different basic Inclinatings	Р	P Change in process includes which is not already covered above.  Note: Major changes affinding the product not covered by the libits require data in PCF.	e g change from single water to tatch process e g one pair redistation e.g. damba sulling (mechanical to laser culting)		Check if OSC-PO-DS-01 is also affected. Coronion stability should be	 	-	-	- 1	- 1	- 1	-	-	-	-   -		-		-	-		-		- 1		Ħ	- 1			- Qualif	lication effort depends on type of
CSC-P0-SQ-Q0 Production from a new equipment(find which uses the same back bedrotting (replacement equipment or extension of existing equipment pool) without charge of process.	-	PCN required for dedicated equipment for sensitive somponent production.  P (-) If sharpe discussed influence the impetitive of the final	e.g. change time single size to multi-size handler.  (-) e.g. extension sizewising equipment post, abreaty qualified.  (F) e.g. extension of deducted equipment in size local including vill medical process.	c	mented		-	-	-	-	-	-	-			-	-		-		-	-						-		- Quali	fication effort depends on type of
CSC-P0-SQ-03 Change in trul test equipment type that uses a different belinkingy		product  P) Empart on product intergrity is anticipated.  Change of bedier platform (e.g. major best program changes, new inteller infection;).  P is product specification is not affected.  F product specification is affected.				 		-	-	-	-	-	-			-	-	-			-	т		-						• Gage	RBR / deta convision
	P	P Tester transfer or relocation.	w.g. Dual source stategy	c	It in case of bars die delivery	 			В	•		в	-	- 1	- в	В	В					т	-   -		-				÷	• Gage Stene	RBR / delta convision, additiona uto be considered for Wafer texts
GGC90-GG11  GGC90-GG11  GGC90-GG11  GGC90-GG11  GGC90-GG11  GGC90-GG11  GGGG90-GG11  GGGG90-GG1	-	e.g. sect flowblock, reduction from three temperature examinements to two temperature managements, planing in their in Join is process. The process of the process of the process of the process of the process of the process of the process of the pro- position. (P): If impact on product integrity is anticipated.	(·g· e.g. text implemented without customer requirement. (γγ e.g. induction from three temperature γγ e.g. induced enter to text temperature reasonements to text temperature measurements a.g. change in Surin In I rain is proceed.	c	At In-case LENR application is affected	 		-	-	-			-		-   -	-		-			-			-		-	-				
Tests, which should be considered for the appropriate process change.						 		- 1	-	- 1		-	-	-		- 1	-	1 - 1				-					-	-	-	-	
Tests, which should be considered for the appropriate process change after set	lection	of condition table																													
	usuli	a committee of the comm				Ť																	Ė						Ť		
Suppliers performed tests (mark with an 'X' for done or 'G' for generic)																															

-	Not required.
	Information Note required.

	CONDITIONS	
Α.	Not for Ag plated devices applicable (Ag intended to fail for this text)	
6		
K		
	Only if Landbarra Substitute Dimensions was channel	
	Only if matel commonition is changed including sequence	
N	Only for plued chips	
	Only if risks components are changing	
R	Only if marking technology changes	
9	Only if Floor Life is affected	
T	Code if Downt Deliability is affected	
11	Only if protection effortset	
	Only for construentativ desires	
w	Only if risk of corrosion is increasing	
Y	Only for lawer technology	
7		
	Only if risks should nonstructure and effortset	
2	Only if outer dimensions are critical	

Worked on (Name, Function	Max Mustermann																													
Signature																												_		
Date															evalua					_						_				
PCN number										MATER	RIAL PERFOR	RMANGE	IEST RESU	LTS on t	he basis	of AEC-Q1	04 Revis	ion -Sept	ember 14, 20	17	_		_	_	_	- 1	iditional I	2		
		From emoled by ZVD - Studion 1.0 - Desamble	T	V 8 V 8	nber 14, 2017	Biss or bissed HAST	THAST	yelng rage UB	enalty U.S.	Retention, and					=			out till by					rage Ufe Aure Skips	rnalysis			ID JESS DICK.)			
change an "x"	Assessment of impact regarding following aspects - contractual aspectments form, fit, function, quality performance, reliability of customer - form, fit, function, quality performance, reliability - po	Understanding of semiconductors experts pact?	Examples to explain	Further applicable conditions  Further applicable conditions	Try date or sudfron steel Revision Septer aton red sub-component	Temperature Hundaly	Autoclava or Unbiasoc Temperature Cycling	Power Temperature C High Temperature Sto	High Temperature Op Early Uits Falture Rate	N/M Endurance, Data Operational Life	Who Bond Sheer Who Bond Pull Soldenbilly	Physical Dimensions Solder Rel Shear	Lead highly X-ray (CSAM	Electronic Discharge Human Body Model	Electronic Citedrarge Charged Davice Mode	Latch up Electrical Distribution	Faut Grading	Characterisation Electromagnet c Cong	Soft Error Pate Herre to Package Te	Package Drop	Die Shear	Internal Water Vapor Board Level Peliability	Los Temperature Sto Start Up and Tempera	MCM Drop Test Destructive Physical A	Xeny	Acoustic Microscopy Wheeler text	(El C 60006-T2-60, JEDE Paternoler-Analysis: Comparison of current wi		Remarks	
, p	Type of charge No ANY	Yes	A Ayeksan	7 Nat of evertings	EC-Q104	2	Q Q	DI NE	HTOL.	W 03	SO NBS	2 5	n Awar	ман	8	3 8	8	O-MIC ENC	SBR WBCH	doed	. 8	WV BUR	LTSL STEP	WCMDR00	XV8AY	N.				
	Any drange with impact on agreed upon technical contractual agreements P	P population of the change of change is applicable but the change affects agreed technical contents at executants			38 <b>₹</b> 58			A5 A6									-	E7 E8		-		GS H1		H4 H5	нs	- H7				
	Any change with impact on processability/manufacturability at customer, which is not covered in the matrix below.	Any change which is not covered in the matrix below     but fair assessment at customer is accommended.		В		-								-	-		-			-						-				
	DATA SHEET	* *	·			_		_	_						_	_		+				+		+		_	_			
MCM-DS-01	Change of data sheet parameters/electrical specification (min./max./sp. values) and/or ACIDC specification	Update of data sheet because of technical change of the product.  No technical change of groduct, process or test.	of e.g. recommendations for pull-up/pull-down or NC pins, MSL	A		-				-				-	-		-								-	-				
MCM-D5-02	Connection of data sheet / erratis	The product.  No startical change of product, process or test.  Now description of Debasicur which was not specified between vehicles are not specified between vehicles different term initial specification.  Please indicate clearly, that his note contains this tips of change!  It is second in variety and contains the second	e.g. Errata	A						-				-	-		-			-					-	-				
MCM-D5-03	Specification of additional parameters:	Description of a new not previously covered parameter. No sortical change of the product. PB (Tolkinson from parameter articular to documented below.  BP Not home as a lingle change. Only is combination with other changes.	僚 e.g. adding new tested parameter.	A		-	-   -							-	-		-	-   -			-   -				-	-	-   -			
MCM-DE-01	Fernans molification 1	visignated software by design or mannory as defined by supplier.  If Formass modification or update without effect of fluctional performance at the customer (sup fix), If Formass modification or update with effect of fluctional or reliability performance at the customer.	d  @ e.g. addition of Firmsone opportunities  @ e.g. tog fix with impact on functional performance	Α		-				-				-	-		-			-	-   -				-	-				
MCM-DE-02	Change that adds or subtracts sub-components from the module DOM	P		A		e•	•	e• e•					.   -   -	٠	•	•	•		м @•	D -	- @F				-	-	٠   •			
MCM-DE-03	Subdata Change affolding moliule indiversals: (Changes the internal dimensions and or externalists) PROCESS - ASSENSEY - MATERIALS	Design change and routing Change in substate, leadmane dimensions which p has impact to the specification electrical parameter and data sheet or specification (e.g., heat sink, pin dimensions, die padde size) Not included: Variation within specification.		A lithe number of layer will be changed see also PA-09		@•	•	@к.		-	e• e• -			•	•	• •	•		м -	-				- @-		-	٠.			
		Change from an AEC Qualified sub-component to a NoAEC Qualified sub-component or				П	П	Т				П	TT						м @•.	T.T	1	Т			L	_	Т			
MCM-PA-01	Replacement of any sub-component by a Non-AEC qualified sub-component P	to another Non-AEC Qualified sub-component		A	• •	•		٠.		•				٠	٠	• •	•		M (g+,	n @•	- @F			- @·	@•	6.	•			
MCM-PA-02	Replacement of any sub-component by an ASC qualified sub-component P	Change from one AEC Qualified sub-component to another AEC Qualified sub-component Change from a Non-AEC Qualified sub-component to an AEC Qualified sub-component e.g. withingsed on-electrical obustness (ESQ, latd in) substricts (Enrollectric substress (ESQ, latd in) substricts (Enrollectric substructure).		Requires additional evidence that new sub-component is AEC qualified.		-			• -	•				•	٠				м @•.	D @•	- @F			- @·	@•	e•				
MCM-PA-03	Replacement of any sub-component by an ASC qualified sub-component Cifical characteristics of sub-component are <u>ext</u> affected	P greatest effection form, fit, function, yield, and/or reliability. Use of SPC controls and 100% testing an		C Requires additional evidence that new sub-component is ASIC qualified		-			@• -	@•				@•					@ M @ •.		- @F			- @·	@•	e•				
MCM-PA-04	Charge within a sub-component that has been requalified Critical characteristics of sub-component are affected	P Critical characteristics are those which have the greatest effect on torn, fit, function, yield, and/or reliability. Use of SPC controls and 100% testing are common.		A Requires additional use of the appropriate ZVEI DeQuMa (e.g. active, passive component) for qualification of the changed sub-component		-			• -	•				•	•		•		м @•.	D -	. @F				-	-	٠   ٠			
MCM-PA-05	Change within a sub-component that has been requalified Orisical characteristics of sub-component are not a flicted	common.  p (stical characteristics are those which have the greater office of the first of the first one point of the common of		C Requires additional use of the appropriate ZVEI DeQUMs (e.g., active, passive component) for qualification of the changed sub-component		-			@• -	@•				@•	@•	e• •	@•	g• •	@ M @•.	D -	. @F				-	-				
MCM-PA-07	Change to the processes used in-module assembly(e.g., pick 8 place, die attach, bonding, refow, encapsulation, singulation, die overcost, underfill, die preparation, die clean)	(-): If the change in process technology does not influence the integrity of the final product. (P): If the change in process technology can influence the integrity of the final product.	(-): e.g. tuning within process specification	с	• •	•		@к.	@ A -	-	• •		.   -   •		-	- @н	- (	3•						- @-		-	.   •			
MCMPAGE	Process integrity tuning within specification -	Variation within process specification (-): If turing within process specification does not integrity of the first product (P): If impact on product specification is anticipated	(-)c e.g. process control s.	c		-		-		-			.   -   -	-	-		-			-					-	-				
MCM-PA-09	Change to materials used in module assembly (e.g., achee)vs, underfit, encapsulate, solder, eposy, bump material; die attach-material; bond wire, die overcoat; subdrate, leadframe base material)	Change of used material (e.g. bump material, de attach material, soft solder, epoxy, etc.) Change of bond wire material, diameter, change in bonding diagram	e.g. Stack die or die to substate (flip chip) e.g. change to Pb-free material e.g. change of copper pillars e.g. change of copper pillars e.g. change from Sn ido NiPolAu e.g. in number of layers or thickness of the substate	If routing is affected see also DE-03  E. Impact on theremore-braical stees caused by relematch of mold compount, interconnecting technology and carrier is anticipated  E. determine leaf finishing material is affected.				@к @	• @E @	Е -				-	-		- (	g• -		-				- @-		-				
MCM-PA-10	Change of direct material supplier -	Change of suppliers for direct materials which are used in assembly process (BCM).  P (-): If change does not influence the integrity of the final product.  P): If impact on product integrity is articipated.	(-jc ag. change of wire material supplier.  (Pjc ag. change to new mold compound supplier ag. additional leadhame supplier with specific leadhame manufacturing technology ag. additional or new substrates supplier	C Please check if malerial is changed!		-				-				-	-		-			-					-	-		See change of material.		
MCMPA-11	Change is assembly location. [Above all or peen of production to a different assembly site]	Assembly transfer or relocation includes transfer as well as additional also	e.g. dual source / faib strategy	A or B: Impact on other type of changes described under PROCESS ASSEMBLY and SEN-EQ-01. In case of Cut wife product please consider AEC-0006.				gк.				• @	т • .	-	-	- •	- (	3.					-	g ·		- 6	9• •	Whitevertests have to be done on mor ADC-Q190: "For broad changes that i processes), refer to section A1.3 of thi the selection of worst-case test vehicle	foring basis! notive multiple attributes a appendix and section a to cover all the possib	t (e.g., site, materials, 2.3 of 0100, which allows is permutations."
MCM-PA-12	Change of product making	Change of marking on device and / or change in process resulting in a new technology.  P (g: fichange does not influence the integrity of the final product.  P): filmpact on product integrity is articipated.	(gr. e.g. change of appearance [additional marking) (gr): e.g. change from triked marking to laser marking e.g. marking of pin 1	8		-	-				в			-	-		-		-  -	-					-	·				
MCM-PS-01	Packing Integring a pecification change P	P Packing/hipping specification charges					1					T-1		-	-		- 1		-   -		1				-	- [				
MCM-PS-02	Dry pack requirements change	β: Relaxation of dry pack requirements β': Tightening of dry pack requirements		B Please check if data sheet is affected (MCM-DS-01 or MCM-DS- 02).		-				-				-	-		-								-	-				
MCM-PS-04	Change of carrier (thing, neel)  Change of labelling  I	P Change of castior (tray, real) Change of the filting also on seel. B: Change of material label without impact on barroots. P to the change of material label information which affects date processing at customer.		8		-				-				-	-		-								-	-				
	EQUIPMENT  Production from a new equipment/bod which uses a different basic technology or which due to its unique form or function can be expected to influence the integrity of the final product.	P Change in process technique.	Check which other type of change is applicable due to this equipment change.	Check which other type of change is applicable due to this equipment change.		- 1	1			- 1				- 1	- [		- (	3 • -		Ti					- 1	- [	-   -	Ī		
MCM-EQ-02	Production from a new equipment/hock which uses the same basic technology implacement equipment or extension of existing equipment pool) without change of process.	PCN required for dedicated equipment for sensitive component production.  P (-): If change does not influence the integrity of the final product.  P(: Fimpact on product integrity is articipated.	(-)c e.g. extension of existing equipment pool  (P)c e.g. extension of dedicated equipment in case basic technology still need to be proven	c		-				-				-	-		-			-					-	-				
MCM-EQ-03		P Change of tester platform with differences in HW or SW that makes a change in test concept necessary	a.g. change tester equipment from LTX to Teradyne	с			-   -	-   -					<u> </u>	-	-	- <b>•</b>	- 6	3 •			-				-	-	. ·	Gage R&R / delta correlation		
MCM-TF-01	TEST FLOW  Change to feeting location (Move of all or part of the final issat to a different test site)	P Tester transfer or relocation. Check impact on MCM-AN-01 includes transfer as well as additional site.	Dual source strategy	с		- 1	1		-   -				-   -	- 1	- [		- 6	3 •		T-T					- 1	- [	-   -	Gage R&R / delta correlation		
	OGATE																								-			*		

Other in the completing process for want by the application and the completing process for want by the application and the completing process for want by the application and the completing process for want by the application and the completing process for want and the completing process and the application and the applicatio	с	The second secon
Tests, which should be considered for the appropriate process change.		
Tests, which should be considered for the appropriate process change after selection of condition table.		
Suppliers performed tests (mark with an 'X' for done or 'G' for generic)		
Reason for exception of tests and/or usage of generic data:		

Not required.
 Information Note required.
 PCN required.
 PCN required.

Audio or "" indicate that performance of the cheek sout should be considered for the appropriate process
A (I) commencement extraction by 27(12).

A (II) commencement extraction by 27(12).

For extraction of the cheek source o

		n: n) Max Mustermann																							
	Signatur		-											Devic	e evaluat	ion									
	PCN numbe	r.										MATERI	AL PERFORMA	NCE TEST RE	SULTS (on the	basis of AE	C-Q200 Revisi	on D)						additional t	AEC-
Mark change with an "x"			Form provided by ZNE1 - Revision 5.0	- December 2001	Evaluation level A / B / C		o after checks																	(1000)	the control of the co
with an "S"		Assessment of impact negarding following aspects - contractual agreements - technical interface of handling processability immunitarium bibly of customer - form, fill, nutricin, quality performance, reliability.	Understanding of component experts	t Examples to explain	Control Further a page page page page page page page pa	applicable conditions	notice or soften	mp Exposure (Stange	tive Physical Arabysis o Resistance	Heridly yeal Life	Visual I Dimension	4 Stength (Lasded) not to Solverts load Shock	n noe to Scabering Heat	l Brock Latic Discharge (ESD)	bit by an Overacterization	Agg	4 Streigh (34D) ood Test	betrudence	adrp	by Transfert Cerabotic	tengh	aret Drabily FelfodeVeritotion	at Endunce inp Endunce	rTest 0001282, JEDBC JE	D Remarks  Remarks  Remarks
1			Potential impact?		A Application level B Board ead G Component lead - 1 Not referred for op- maths.		C-Q2C	Hgh To	Destruc	Based	Bitema	Terretor Posisto Mechan	Meratio Past sta	Therma	Sobero Bectric	Planne	Terrrino Bears L	Parriet	Surge V	Set 3p	S year S	Final C	Jump 8 Cond D	Weste	1000 1000 1000 1000 1000 1000 1000 100
Selection of component	10	Type of change  NETWORKS & RESISTORS	No Yes		4 8 0 4 4 8 9 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		AE George	3 4		7 1		11 12 11				20 21	22 23	ы	n 27	29 20	31	20 23	31 33	بلط	
NETWORKS & RESISTORS NETWORKS & RESISTORS	PAG-PES-AN-01	ANY	P P is applicable but the change affects agree	ange																					
NETWORKS & RESISTORS	PAS-RES-AN-01 PAS-RES-AN-02	Any change with impact on agreed upon technical contractual agreements  Any change with impact on processability/manufacturability at customer, which is not covered in the metric below.		d Not relevant for technical evaluation.  Technical interface means component terminals.	В													-			-			. @•	-
NETWORKS & RESISTORS NETWORKS & RESISTORS											-   -													@•	
NETWORKS & RESISTORS	PAS-RES-0S-01	DAMS SIEED: Obeyond did as sheet perameters bleeched operationation (print, Ireas, Irgs, values) and if or ACCC association for the action of colors all the colors colors al	P Notice of application relevant information to the characteristic process of the subsect Editorial characteristic process of the subsect of the of	a g. Sighten of electrical parameter distribution or   d.  a g. data sheet correction because of new information about component behavior	A Risk assessment for each acel	ment depending on change olication.	 											-			-				
NETWORKS & RESISTORS	PAS-RES-05-03	Equalitation of additional parameters  MATERIAL	Description of a new not previously covers personally.  Physical change of the product of the initial control of the product of the initial control of the product (P). Rolls assessment depending on changes the pupil control of provide endounce of additional parametes (rate enabation)	nd e.g. adding new (hashed) parameter.	A													-			-			-	-
NETWORKS & RESISTORS NETWORKS & RESISTORS	PAS-RES-MA-01		P P Change of Ink / Wire material	e.g. resistor paste, NCr, resistor sére, bulk mebils	С					- •		w		• F	- B	- •	• •	R			-				@•
NETWORKS & RESISTORS	PAS-RES-MA-02	Change of material composition - Ink/Wire material of Terminal element	P P Change of Ink / Wire material	e.g. AgPd paste, Ag paste, lead sine , NCr for sid termination	В					- •		w		• F	- В			R			-			-	@•
NETWORKS & RESISTORS	PAS-RES-MA-03		P P Change of Package	e.g. for chip res.: final coating, epoxy	B Consider pole material S: in case ge	elential change of CTE of peometric changes of resisitor										• •		R			-			+	Check whether AOI at Ser 1 can be affected.
NETWORKS & RESISTORS	PAS-RES-MA-04	Change of material composition - Passivation	P P Change of Passivation /Inner protection	e.g. change of glass	B material  B: in case ge design due ric reaction (e.g. migration)	risk of electro chemical g. corroxion, electro		• •						• -		•		R		N -	-				-
NETWORKS & RESISTORS	PAS-RES-MA-05	Change of material composition - Substrate material	P Change of substrate material P substrate material class (AL203, etc.) will n be changed, cele dopping will be changed	not 4	С				- •			•			• B		• -	-			-				@•
NETWORKS & RESISTORS	PAS-RES-MA-06	Change of supplier of material	P Change to a new or additional material sug at component manufacturer.	e.g. for 2nd source purpose	С			- •	- •		- •	• • •			- B	• -		R		N -	-			-	Assumption material specification remains unchanged. Otherwise see change of material.
NETWORKS & RESISTORS NETWORKS & RESISTORS	PAS-RES-DE-01	DESIGN Changes of lermination, surface finish, shape, color, appearance or dimension shuckure	j P Change of package		В				- •	• -					• -			R			-			4-1	-
	PAS-RES-DE-02	Changes of inner construction - Passination	- P Change of passivation/inner protection	e.g. change of glass, laquer, eposy,	B: in case ge design due ri reaction (e.g. migration)	peometric changes of resistor risk of electro chemical g. corrosion, electro								• .		• -		R		Ν -	-			/ - /	-
NETWORKS & RESISTORS NETWORKS & RESISTORS		PROCESS		Les dans et transits																_		_		_	
NETWORKS & RESISTORS	PAS-RES-PR-01	Changes in process technology or manufacturing methods - Ink Fine  Changes in process technology or manufacturing methods - Ink Print	P Change of ink fine process     P Change of ink print process	e.g. change of firing profile e.g. change from normal atmospher to nitrogen atmospher	c					•					- B			-			-				@•
NETWORKS & RESISTORS NETWORKS & RESISTORS	PAS-RES-PR-03 PAS-RES-PR-04	Changes in process screeneys or manuscuring memors: - ancient Changes in process technology or manufacturing methods - Trim Changes in process technology or manufacturing methods - Lead Form	P Change of the process     P Change of him process     P Change of lead form process	e.g. change from mill trimming to laser trimming	C B					•					- B	- K		•		 N -					@• @•
NETWORKS & RESISTORS	PAS-RES-PR-05	Changes in process technology or manufacturing methods - Termination Attach	- P Change of termination attach process	e.g. change from bending to punching e.g. chip resistors: electroplating process e.g. welding of leads for through put devices.	В					•					- B			-		N -	-				@•
NETWORKS & RESISTORS	PAS-RES-PR-06	Changes in process technology or manufacturing methods - Marking  Changes in process technology or manufacturing methods - Molding	- P Change of marking process	e.g. change from tempon printing to laser marking	В						•							- R			-			-	-
NETWORKS & RESISTORS NETWORKS & RESISTORS	PAS-RES-PR-08	Process integrity: furing within specification  PACKING / SMPPING - NEW MATERIAL, CRITICAL DIMENSIONS	P Change of molding process     P Variation within process specification.	e.g. process control	B C						: :					: :				1 1		1	1 1	11,	-
NETWORKS & RESISTORS NETWORKS & RESISTORS	PAS-RES-PN-01	Packing / shipping specification change (loosening of tolerances)	P P Change of packing specification.	e.g. number of pieces on real.	В														-   -		- 1			4-1	-
NETWORKS & RESISTORS	PAS-RES-PN-02	Dry pack requirements change	Change of dry pack requirements.  (I): Relaxation of dry pack requirements.  (IP): Tightening of dry pack requirements.	a.g. change in dry pack assurance (HC, MEB) (): MSL 3 -> MSL 1 (P): MSL 1 -> MSL 3	В													-			-			1	-
NETWORKS & RESISTORS	PAS-RES-PN-03	Change of carrier (tray, reel)  PACKING / SHIPPING - VISUAL INSPECTION	P P Change of carrier	e.g. change by material e.g. change by geometry.	В							-   -   -						-	-   -		-			لنا	-
NETWORKS & RESISTORS	PAS-RES-PV-01	PAURINA / SIBPYINA - WISHAL REPUBLIKAN  Change of labeling	I P Change of labeling, also on real.	(f) e.g. additional information (RoHS stamp) (P) e.g. change of customer specific information	В																I . I				
NETWORKS & RESISTORS	PAS-RES-PV-02	Chance of product marking	I P Marking on dealos.	(P) e.g. change of customer specific information e.g. change of content of marking e.g. change of method of marking	В																				
NETWORKS & RESISTORS				e.g. change of appearance of marking																					
NETWORKS & RESISTORS	PAS-RES-PV-03	Charge of packing/hhpping specification  LOGISTICS / CAPACITY / TESTING - EQUIPMEMENT	P P Change in packing specification which do not described a change of dimensions or material of the packing.	specification				خات	انانا											1   1				للنك	
NETWORKS & RESISTORS	PAS-RES-EQ-01	Production from a new equipment/loof which uses a different lecthology or which due to its unique form or function can be expected to influence the integrity of the final product	P P Change in process technique which is not sheady covered above.  Note: Changes affecting the product not covered by the table require also a PCN.	a.g. new equipment supplier with different process concept	с				•	- •					- В			-			-				Test effort depends on final risk: assessment. Performance last according to affected process change. Test effort depends on final risk
NETWORKS & RESISTORS	PAS-RES-EQ-02	Production from a new equipment/tool which uses the same basic technology (replacement equipment or extension of estating equipment pool)	PCN required for dedicated equipment for sensitive component production.	e.g. additional equipment to increase production capacity e.g. replacement of same equipment	С		•	•	•	•					- B			-			-				Test effort depends on final risk assessment. Performance test according to affected process change.
	PAS-RES-EQ-03	Change in final leat equipment type that uses a different technology	p Drange of final test equipment which use different technology. PCN required for dedicated equipment for sensitive consmisses.	e.g. change of feater platform	С										- @B			-			-			- 1	@● Gage RSR / delta correlation
NETWORKS & RESISTORS		LOGISTICS / CAPACITY / TESTING - PROCESS FLOW	Dame of manifestring	a.e. requested or installer of rescular-to-in-order																				+	
NETWORKS & RESISTORS	PAS-PES-PF-01	Manufacturing site transfer or movement of a part of production process to a different location/site	P Change of manufacturing site. Includes transfer as well as additional site. Note: Recognitization inside one plantitute not affected.	e.g. movement or transfer of manufacturing site or process step(s) to a different location/site. e.g. dual source / tab strategy	В		•	•	- •	•	•	• •			- В	•	•	R		Ν -	-			@•	@•
NETWORKS & PESISTINGS	PAS-RES-PF-02	Elimination or addition of a manufacturing process step	P Charge of manufacturing process sequen		С										- @B			-			-				Characterisation depends on impact of production flow.
NETWORKS & RESISTORS		LOGISTICS / CAPACITY / TESTING - Q-GATE		e.g. change from 100% to sample inspection																					Research to the same
NETWORKS & RESISTORS	PAS-RES-QG-01	Change of fast coverage used by the supplier to ensure data sheet compliance (e.g., elimination/addition of electrical measurement/set flow block, releaston/enhancement of monitoring procedure or sampling)	- P Change of last coverage.	e.g. change from 100% to sample inspection e.g. test flow block, reduction from three to two temperature measurements e.g. change in burn intrun in process.	С													-			-				R (electr. funct.): test coverage.  R (reliability) only for change in burn in process.
INDUCTORS INDUCTORS		INDUCTORS ANY																							
INDUCTORS	PAS-IND-AN-01	Any change with impact on agreed upon technical contractual agreements	P P Intended to be used if no other type of cha is applicable but the change affects agree technical contractual agreements.	ange d Not relevant for technical evaluation.														-			-			- 7	-
INDUCTORS	PAS-IND-AN-02		РР	Technical interface means component terminals.	В													-	-   -		-	-   -		@•	
INDUCTORS	PAS-IND-DS-01	DATASHEET  Change of datasheet parameters/electrical specification (min/max/lyp. values) and / or ACIDC specification	P Change of application relevant information Not included: Editorial changes.	a.g. Sgitten of electrical parameter distribution	A Risk assessor for each appl	ment depending on change																			
INDUCTORS	PAS-IND-03-02	specification  Correction of data sheet or issue of errate	Not included: Editional changes: Not included: Editional changes: Not included: Editional changes: Not description of behavior which was no less than the second of the se	×	A for each appli	p. and												-			-				
INDUCTORS		-1	Assessment in application required?	1																				الساء	

			,																									
PAS-IND-05-03	Specification of additional parameters	Disscription of a new not previously covered parameter.  No technical change of the product.  (\$1 no influence of the product.  (\$2 no influence of the product of the country of the cou	for e.g. adding new (tested) parameter.	A				-	-	-   -	-   -	-   -	-				-		-					-		.   .		
	MATERIAL	I I	1																1 1									
PAS-IND-MA-01	Change of material composition - Bobbin Material P	Material without magnetic function P ("SpulerkCeper") typically made by plastic material	e.g. change from Thermoset to Thermoplastic	В	A: in case the thermal or mechanical stability of bobbin is negatively affected			-	-	•   •	• @•		•		• -	-	-	• -	-					-			1 - 1	
PAS-IND-MA-02	Change of material composition - Core Material P	Change of core material, which is material with magnetic function	th e.g. change from N2h into Mh2h	А			@• •	-		- •	•		•		• -		В	•	-								@•	
PAS-IND-MA-03	Change of material composition - Insulation Material P	P Change of insulation material	e.g. wire insulation, insulation tapes, e.g. change from Polyurethane to Polyamide	с	Consider also if PAS-IND-DE-95 is affected  At in case of HV components (rated solage >= 100V) (final Judgement by tier 1: if used in HV application)			-	-	.   .			-		• A	-	В		-					-		.   -		
PAS-IND-MA-04	Change of material composition - Lead Material P	P Change of lead material	e.g. change from tin coverd to non-coverd lead	В	1. E GARD IN NV SCORCISIONS			-					-				-									@•		
PAS-IND-MA-05		P Change of mold compound material	e.g. change to green mold	В								- •				-	В		-					-			© ACI, with has to?	al function affected if vical afters distribution changes we soldering and board coating to assessed. MSL might
PAS-IND-MA-06	Change of material composition - Solder Material P	p Change of solder material at internal	e.g. change of SnAgCu composition	В										. @.			-									. @•		
DATE DEL MALOT		P Wire for wound inductors. Foil for multilayer inductors (inner electrode).			A: in case of sitre wound inductors, where the wire is not 100% fixed by mold or epony within the inductor		@• -							@• -	_   _		В		+								@•	
PAS-IND-MA-08	Change of material composition - Glass P	Poli for multilayer inductors (inner electrode).  Poli for multilayer inductors (inner electrode).	e.g. change from give A into give B	c	or eposy within the inductor		- @		-		20.			@• @•		@•	@B	-										ere in case of core-core glue gap.
PAS-IND-MA-09	Change of supplier of material -	<del>                                     </del>		c						@• ·		• .	- 4	@• @•		@*	В	-	-				+ 1 -	-				
		p Change to a new or additional material suppli at component manufacturer.										•	-		•	-			-					-		-	ehange	ption material specification s unchanged. Otherwise see of material.
PAS-IND-MA-10	Change of material composition - Poting Material P	P Change of potting material	e.g. change from epoxy resin to silicon	С	A: If influence on other connections on PCB or laquer expected.	•	- @	•   •	- (	@• -	@• @•		- (	@• @•		@•	@B		- 1	-   -	1-1-			-		-   -	@•	
PAS-IND-DE-01	Changes of termination, surface finish, shape, color, appearance or dimension shucture - Bobbin	Material without magnetic function P ("Spulenkörper") typically made by plastic	e.g. construction / dimension change of bobbin	В					- [	1				1			В								- 1		@•	
PAS-IND-DE-02	Changes of termination, surface finish, shape, color, appearance or dimension structure - Bobbin II  Changes of termination, surface finish, shape, color, appearance or dimension structure -  LandTermination	P Change of lead/terminals	e.g. Change of lead or terminal design (shape, dimension,)	A													-									. @•		egarding EMC relevant for high
PAS-IND-DE-03	Changes of termination, surface finish, shape, color, appearance or dimension shucture - Mold	P Change of mold	dimension,)  e.g. new mold material with different color	В					• (	@• -							В										@ Paramet	regarding EMC relevant for high scy only. ster Analysis only for nents where mold material has
PAS-IND-DE-08		Change of conscionation which is resident																									magneto	sents where mold material has ic function
PAS-IND-DE-04	Changes of Inner construction - Core Construction .	P Charge of core construction, which is materi with resgnetic function  Charge of insulation system	isl e.g. change fromdrum cone & shield core into pot core & cover plate core	A		• •	•	-	-		•		•	•	•	-	В		-					-			@•	
PAS-IND-CIE-05	Changes of irrer construction - Instalation System	An electrical insulation system (EIS) is p comprised of a unique combination of material that have been verified for chemical compatibility when used at certain maximum temperatures. (see www.LL.com)	e.g. wire insulation, insulation tapes, mold, polling, 	с	A: In case of HV components (rated voltage >= 100V) (final Judgement by Ser 1, if used in HV application)	• .	@• -	-	-	•   •	•   •	- ·	-		- A	-	В	•	-	-   -				-		.   .		
PAS-IND-DE-05	Changes of Inner construction - Wire / Foil Construction	P Change of wire / foil dimensions	e.g. change from round cross section to rectangular cross section e.g. from single wire to litz wire	В		• .		-	-				- (	@• -	•		В		•					-			@•	
PAS-IND-DE-07	Changes of termination, surface finish, shape, color, appearance or dimension structure - Polling	P Change of potting dimension	e.g. change of potting (filling) height	С	If data sheet is affected (PAS-ND-DS- 91)		- @		-		@•		- (	@• @•		-	@B		-					-			@•	
	PROCESS	T														1											Mechan	nical damage of wire, on solderability in case of g process is affecting soldering
PAS-IND-PR-01	Changes in process technology or manufacturing methods - Insulation Strip	P (Mechanical) removal of insulation.	e.g. change from mechanical removal to baser removal	В	•	• -	- @	•   -	•		•	•	- (	@• •		@•	-		-					-				
PAS-IND-PR-02	Changes in process technology or manufacturing methods - Lead Prep. / Plating	P Change of lead prep. / plating	e.g. change from hot dip tirning to electroplating	В	•	•		-			•	•	-		•	•	-		•					-		@•	- Influence joint	ce regarding reliability of solder
PAS-IND-PR-03	Changes in process technology or manufacturing methods - Terminal Attach	P Connection of wire terminal and / or connection of termination to cone/bobbin.	e.g. change from Manual winding to Semi-automic winding (winding of wire on terminal)	С	•	•		-	• (	@• -			•	• A		•	-		-							@•	- Increas	se of contact resistance.
PAS-IND-PRI-04	Changes in process technology or manufacturing methods - Marking -	P Change of marking process	e.g. change from ink marking to laser marking	В		• -											-		-					-			-	
PAS-IND-PR-05	Changes in process technology or manufacturing methods - Molding -	P Change of molding process	e.g. change from one component molding to two component molding (other technology needed)	В		• .									• -		В	•	-					-			-	
PAS-IND-PR-06		P Change of soldering internal connection	e.g. change from hot tip tinning to resistance welding	С	solder connection to PCB.	• -								• -		•	-		•					-			-	
PAS-IND-PR-07		P Change of winding - Insulation	e.g. change from manual to automatic process	В		• •						- •	-	- •	- A		В		-								-	
PAS-IND-PR-08		P Change of winding - sire	e.g. change from semi-automatic winding to full automatic winding	С		• -							-				В		-								@•	
PAS-IND-PR-09		P Variation within process specification.  P Change of politing process	e.g. process control e.g. change from manual potting process to submistic potting process	c						 @• _			-			-	-		-		+ - + -			+ -		-		
	PACKING / SHIPPING - NEW MATERIAL, CRITICAL DIMENSIONS		automatic potting process				. 6		- 1 6	8*	8+ 8+																	
PAS-IND-PN-01		P Change of packing specification.	e.g. number of pieces on reel.	В	-			-	-				-			-	-		-					-			-	
PAS-IND-PN-02	Dry pack requirements change	Change of dry pack requirements.  P (§: Relaxation of dry pack requirements (P): Tightening of dry pack requirements	e.g. change in dry pack assurance (HFC, MEE) Ø: MSL 3 → MSL 1 ØP: MSL 1 → MSL 3	В				-	-				-			-	-		-					-				
PAS-IND-PN-03	Change of carrier (tray, reel)	P Change of carrier	e.g. change by malerial e.g. change by geometry.	В				-	-				-			-	-		-					-				
	PACKING / SHIPPING - VISUAL INSPECTION		*																1 1			1 1						
PAS-IND-PV-01		P Change of labelling, also on real.  P Marking on device.	(f) e.g. additional information (RbHS stamp) (P) e.g. change of customer specific information e.g. change of content of marking	B B	•			-	-				-			-	-		-				+ + + -	-			_	
			e.g. change of content of marking e.g. change of method of marking e.g. change of appearance of marking																									
PAS-IND-PV-03		Change in packing specification which does not described a change of dimensions or material of the packing.	e.g. change of documentation in packing specification	٠	•			-	-				-			-	-		-					-				
	LOGISTICS / CAPACITY / TESTINS - EQUIPMEMENT	T	T																								Topina	ort depends on final risk
PAS-IND-EIQ-01	Production from a new equipment/bod which uses a different technology or which due to its unique																@B		-					-			@• Perform	fort depends on final risk ment, resnoe test according to affected a change.
	Production from a new equipment/bool which uses a different technology or which due to its unique form or function can be especial to influence the integrity of the final product	Change in process technique which is not already covered above.  Note: Changes effecting the product not covered by the table require also a PCN.	e.g. introduction of polling process	с	•			-	-	-   -																	Test off	fort depends on final risk ment, mance test according to affected a change.
PAS-IND-EQ-02	Production from a new equipment/tool which uses the same basic technology (replacement equipment or edenation of estating equipment pool)  -	PCN required for dedicated equipment for sensitive component production.	e.g. duplication of existing winding machine	С				-	-				-			-	-		-					-			@• Perform	
PAS-IND-EQ-03	Production from a new equipmentation which uses the same basic behinding physicservent equipment or electrical of existing exponent party.  Change in final last equipment type that uses a different technology.	PCN required for dedicated equipment for sensitive component production.	e.g. duplication of existing winding machine		•	 		-	-	 	 		-		 	-	@В		-					-				ISR / delta correlation
PAS-IND-ED-03	Production from a new equipment that which wase the same basic inclinating (hydrocenetic equipment or edemics of electing equipment pool)  Change in final lest equipment type that uses a different inchinating.  P	P PCN required for dedicated equipment for sensitive component production.  Change of final test equipment which use different technology. PCN required for dedicated equipment for sensitive parameters.	e.g. duplication of existing winding machine e.g. change of tester platform	c c					-	 	 	 	-			-	_		-					-			@● Gage RI	
	Production from a new equipment that which wase the same basic inclinating (hydrocenetic equipment or edemics of electing equipment pool)  Change in final lest equipment type that uses a different inchinating.  P	PCN required for dedicated equipment for sensitive component production.	e.g. duplication of eating winding machine e.g. change of twine platform e.g. change of twine platform e.g. movement or bandler of manufacturing allo or process along the address facilities. e.g. dual aroung 15th durations	с					-	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· ·	-	 		-	@В	 	· ·	 				-		- @•	@◆ Gage RI	SR/ delta correlation
PAS-IND-ED-03  PAS-IND-PF-01  PAS-IND-PF-02	Anadactor for a sea equipment of this sail as the sea shall belongly byte-served explored or advanced of earling explored polymer (and the sequence) of the sequence of earling explored polymer (and the sequence) of the sequence of the seq	p PCM regains for dedicated equipment for member conjumed protection.  During of the set equipment ships an experiment of the protection of the protection of the protection of the set of the set of the protection of the set of the	e.g. duplication of eleting winding machine e.g. change of tester platform e.g. change of tester platform e.g. movement or transfer of manufacturing also or process steploy(s) to a different backshrisks.	с с в		• •			- - -			· · · · · · · · · · · · · · · · · · ·	-		• •	-	_	 	•	  				-			@ Gage Ri	ISR/ delta correlation  terisation depends on impact of ion flow.
PAS-IND-IID-03	Production from a term equipment of all in law on the serve basis behinding triple comment uppersed or all contents of earling opportunit parts Compay in that the equipment type that seas a different behinding.    Descript in the description of the law is a different behinding.   P	p PCM regains for dedicated equipment for member conjumed protection.  During of the set equipment ships an experiment of the protection of the protection of the protection of the set of the set of the protection of the set of the	e.g. duplication of eating winding machine e.g. change of twine platform e.g. change of twine platform e.g. movement or bandler of manufacturing allo or process along the address facilities. e.g. dual aroung 15th durations	С		1   1   1   1   1   1   1   1   1   1			• 6			· · · · · · · · · · · · · · · · · · ·	-	· · · · · · · · · · · · · · · · · · ·	· ·	· · · · · · · · · · · · · · · · · · ·	_		•	  			· · · · · · · · · · · · · · · · · · ·		- ·	· · · · ·	@ Gage Ri	SR/ delta correlation
PAS-RD-ED-03  PAS-RD-PF-01  PAS-RD-PF-02  PAS-RD-PF-03	Analysis for a same appropriate plants are to are share the state of properties of the same and appeared and an appeared and an appeared and an appeared and an appeared and a	P. November 1 in Automatic Augment 1 in management processing and	e.g. displication of easing winding machine e.g. change of least platform e.g. change of least platform e.g. converse for transfer of transfershing allow e.g. converse for transfer for transfershing allow e.g. change of least of transfershing e.g. change of order of processes	c c c c c c		• •		-	• (			· · · · · · · · · · · · · · · · · · ·	-		• •	· ·	_		•						- ·	· @•	© Cage Ri  © Character  or Character  or Character  final facility	ISRI delta correlation  derivation depends on impact of stretation depends on impact of fifther.
PAS-IND-ED-03  PAS-IND-PF-01  PAS-IND-PF-02	Available for a same appropriet plant has are to are than the being injustment of properties of control and properties of control and properties of control and properties of control and properties of the control and	p PCM regains for dedicated equipment for member conjumed protection.  During of the set equipment ships an experiment of the protection of the protection of the protection of the set of the set of the protection of the set of the	e.g. duplication of eating winding machine e.g. change of basin platform e.g. change of basin platform e.g. presented in basin's of annufacturing also or express single) and affirm of colorability e.g. duplications of the demands colorability e.g. duplications of the demands e.g. change of color of processes e.g. change of color of processes	с с в		1   1   1   1   1   1   1   1   1   1			• •	@• • ·	8.	• • • • • • • • • • • • • • • • • • •			· · ·		_		•						- · · · · · · · · · · · · · · · · · · ·	· @•	© Cage Ri  © Character  or Character  or Character  final facility	ISR/ delta correlation  terisation depends on impact of ion flow.
PAS-RD-ED-03  PAS-RD-PF-01  PAS-RD-PF-02  PAS-RD-PF-03	Production from a service of the control of the con	Processor to restance registered to processor to the company of t	s p. opforcion of easing under proteine  go charge of least particles  go winder of least partic	c c c c c c						8	8	· · · · · · · · · · · · · · · · · · ·	-	· · · · · · · · · · · · · · · · · · ·	· · ·		_		•					-		· @•	© Cage Ri  © Character  or Character  or Character  final facility	ISRI delta correlation  derivation depends on impact of stretation depends on impact of fifther.
PAS-RD-ED-03  PAS-RD-PF-01  PAS-RD-PF-02  PAS-RD-PF-03	Production or a transport of the control of the con	Processor to relative represent to the processor to the p	s p. opforcion of easing under proteine  go charge of least particles  go winder of least partic	c c c c c c		-   -   -   -   -   -   -   -   -   -				@• • · · · · · · · · · · · · · · · · · ·	8	· · · · · · · · · · · · · · · · · · ·		·	• • •		_									·	© Cage Ri  © Character  or Character  or Character  final facility	ISRI delta correlation  derivation depends on impact of stretation depends on impact of fifther.
PAS-RO-EQ-03 PAS-RO-EP-02 PAS-RO-EP-02 PAS-RO-EP-03 PAS-RO-EP-03	Production from a service of the control of the con	Processor to relative represent to the processor to the p	s p. opforcion of easing under proteine  go charge of least particles  go winder of least partic	C C C C					- 0	2 · · · · · · · · · · · · · · · · · · ·	@ · ·	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	· · ·		_									@•	© Cage Ri  © Character  or Character  or Character  final facility	ISRI delta correlation  derivation depends on impact of stretation depends on impact of fifther.
PAS-ID-EO-GO PAS-ID-ET-GO PAS-ID-ET-GO PAS-ID-ET-GO PAS-ID-GO-GO PAS-CER-AN-GO PAS-CER-AN-GO	Anadosis on a see equipment with the same to are thank schooling injustment of proportion of the same	Processor to entitude registering to the processor to entitle entite entite entitle entite entit	a.g. optionate of easing winday receives     a.g. change of two partitions     a.g. change of two partitions     a.g. change of two partitions     a.g. change of two partitions of the analysis of the a	c c c c c c s	<u>'</u>				- 6	8	@ · · · · · · · · · · · · · · · · · · ·	• • • • • • • • • • • • • • • • • • •					_										© Cage Ri  © Character  or Character  or Character  final facility	ISRI delta correlation  derivation depends on impact of stretation depends on impact of fifther.
PMS-ID-ED-GS  PMS-ID-ET-G1  PMS-ID-ET-GS  PMS-ID-GS-GS-GS-GS-GS-GS-GS-GS-GS-GS-GS-GS-GS-	Anadosis on a see equipment with the same to are thank schooling injustment of proportion of the same	P Congress for the desirate organism of the control	e.g. deplaced or of easing winding residence e.g. change of two problem  1.g. change of two problem  1.g. change of two problem  1.g. change of two of two changes e.g. change of two of two changes e.g. change of two of the changes e.g. change of two OSAs in any of the changes e.g. change of two OSAs in any of the changes e.g. change of two OSAs in any of the changes e.g. change of two OSAs in any of the changes e.g. change of two OSAs in any of the changes e.g. change of two OSAs in any of the changes e.g. change of two OSAs in any of the changes e.g. change of two OSAs in any of the changes e.g. change of two OSAs in any of the changes e.g. change of two OSAs in any of the changes e.g. change of two OSAs in any of the changes e.g. change of two OSAs in any of the changes e.g. change of two OSAs in any of the changes e.g. change of the change of the change of the change e.g. change of the change of the change of the change e.g. change of the change of the change of the change e.g. change of the change of the change of the change e.g. change of the change of the change of the change e.g. change of the change of the change of the change e.g. change of the change of the change of the change e.g. change of the change of the change of the change e.g. change of the change of the change of the change e.g. change of the change of the change of the change e.g. change of the change of the change of the change e.g. change of the change e.g. change of the change	c c c c c c s	An annual diagnostic part charge     To the company of the part charge     To each opposition.				• 6	8 · · · · · · · · · · · · · · · · · · ·	2 · · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·					_										© Cage Ri  © Character  or Character  or Character  final facility	ISRI delta correlation  derivation depends on impact of stretation depends on impact of fifther.
PAS-IND-ED-ED-ED-ED-ED-ED-ED-ED-ED-ED-ED-ED-ED	Anadosis on a see equipment with the same to are thank schooling injustment of proportion of the same	P Congress for the desirate organism of the control	Application of existing working receives     Application of existing working receives     Application of translationing working     Application of the process     Application of the process of the process     Application of the process of th	c c c c c c s	<u>'</u>												_										© Cage Ri  © Character  or Character  or Character  final facility	ISRI delta correlation  derivation depends on impact of stretation depends on impact of fifther.

MOLECUS 
MOL

CERAMIC / TANTALUM

CERAMIC / TANTALUM

					_																							
				Description of a new not previously covered parameter.  Posterioral change of the product.  (I): no influence (F): Risk assessment depending on change for sech application to provide evidence of additional parameters (stat. evaluation)																								
	PAS-CER-OS-03	Specification of additional parameters	1 1	No technical change of the product.  P (it: no influence	e.g. adding new (tested) parameter.	A										-		-				 					-	
				(P): Risk assessment depending on change for each application to provide evidence of																								
CERAMIC / TANTALIM CERAMIC / TANTALIM		MATERIAL.																oxdot	$\rightarrow$						$\sqcup$			
CERAMIC / TANTALUM	PAS-CER-MA-01	Change of material composition - Ceramic Binder	P I	P Binder material (ceramic) P Binder material (tental)		С		-	-		- :	-				-		-				 				-		
CERAMIC / TANTALUM		Change of material composition - Tantalum Binder	P	P Binder material (tental) Dielectric change (ceramic only)	e.g. change from wax 1 to wax 2	С						-				-		-				 				-	-	
	PAS-CER-MA-03	Change of material composition - Dielectric	P	Dielectric change (ceramic only) ceramic material class (Ba1903, Ca2r03, etc.) will not be changed, only dopands will be changed.	e.g. change from ceramic A into ceramic B	С			•		- •	•	-   -			-		-	В -	С -	•	 				-	-	
CERAMIC / TANTALLIM	PAS-CER-MA-04	Change of material composition - Electrode Attach		P Electrode attach (only tantal, glue, carbon, Ag)		С				_				_		С	_		В -	с •						+ +		
CERAMIC / TANTALUM CERAMIC / TANTALUM	PAS-CER-MA-05		P 1		e.g. change from spehric to flake shape (Ni paste)	c			•							-												
CENTRE / INTOLUM							Consider effect on usage on costed PSA (printed board assembly)																					k whether ACII at Tier 1 can be
	PAS-CER-MA-06	Change of material composition - Encapsulation	P	P Encapsulation	e.g. change from epoxy1 into epoxy2	С	S: in case component is used in coaled		-	• -			•   •	- •		-		-				 -	-   -			-	- Check	k whether AOI at Tier 1 can be led
CERAMIC / TANTALUM	PAS-CER-MA-07	Chance of material composition - Lead material / Termination	Р 1	P Lead material / Termination All changes outside ceramic/tantal body	e.g. change from SnPb to pure Sn e.g. change of soft termination material e.g. change of any galantic layer	В	Plak (printed coard assembly)								<del>                                     </del>				в -									
CERAMIC / TANTALUM				All changes outside ceramic/tantal body	e.g. change of any galanic layer																					+	Anne	motion material specification
CERAMIC / TANTALUM	PAS-CER-MA-08	Change of supplier of material	- 1	Change to a new or additional material supplier at component manufacturer.	e.g. for 2nd source purpose	с			•	•		•		• •		•	• •	•	В -		С -	 				-	@• remail	mption material specification ins unchanged. Otherwise see se of material.
CERAMIC / TANTALUM	PAS-CER-DE-01	DESIGN  Changes of termination, surface finish, shape, color, appearance or dimension shucture - Lead Diameter		- Channe of least diameter	e.c. change from 0.8mm into 0.6mm	A																						
CERAMIC / TANTALUM	PAS-CEROE-02	Dismiter  Changes of termination, surface finish, shape, color, appearance or dimension shuckure -	- '	(for soldered THT components)				•										-									-	
CERAMIC / TANTALUM	PAS-CER-0E-03		1 1	P Change of Termination area P Terminal interface	e.g. change in width of termination from 0.1-0.3mm into 0.2-0.4 mm	В			•		• •			-		-										-	-	
CERAMIC / TANTALLIM CERAMIC / TANTALLIM	PAS-CER-DE-04	Terrinal Interture			e.g. additional layer in termination	С				<del>: :</del>	+			•			<del></del>		B -	@• ·				1 1			@•	
CERAMIC / TANTALLIM	PAS-CER-0E-05	Changes of inner construction - Layer Trickness		P Layer thickness (delectric thickness)	e.g. Ni layer change from 2.5µm into 3.5µm e.g. Ceramic layer thickness changes from 3µm into 5µm.	С			•			•			• .	-		-	В -		С -	 				-		
	PAS-CER-OE-OS	Changes of inner construction - Number of Layers			see also layer thickness	с				СС					С -		СС				С -	 				-	-	
CERAMIC / TANTALLIM CERAMIC / TANTALLIM		PROCESS								_							_			_								
CERAMIC / TANTALUM	PAS-CER-PRO1 PAS-CER-PRO2	Changes in process technology or manufacturing methods - Dicing	-	P Change of dicing	e.g. change from cutting to sawing	c									•	- C			В -		С -	 	1			-	-	
CERAMIC / TANTALUM	PAS-CER-PRO2	Changes in process technology or manufacturing methods - Electrode apply	-	P Electrode apply (dielectric bayer process) p Change of firing profile		c			С								· ·		B,C -							+ +	-	
CERAMIC / TANTALLIM CERAMIC / TANTALLIM	PAS-CER-PROI	Changes in process technology or manufacturing methods - Pring  Changes in process technology or manufacturing methods - Lamination	-	p Change of lamination / press techinque	e.g. separation of decarbonization and firing profile. e.g. stemp press to isostatic press	c				• •							• •			•	C -						-	
	PAS-CER-PROS	Changes in process technology or manufacturing methods - Particle Size			e.g. change D50 from 0.5µm into 0.4µm	c						-				•			В -									
CERAMIC / TANTALLIM	PAS-CER-PR-05				e.g. change from screen printing into offset printing	c				_		С			c -		- C		B,C -		С -						-	
CERAMIC / TANTALUM	PAS-CER-PROT		_			В			_	-				_				_	-									
CERAMIC / TANTALUM	PAS-CER-PROT	Changes in process technology or manufacturing methods - Termination  Drowns intentive tenior within specification	-   '	Change for termination preparation like plating or apply of termination base layer.	e.g. change from dip in paste to plating (apply) e.g. process control			• •	•	• •	+ + + -		• •	• •		•		•	В -	• •				1 1				
CERAMIC / TANTALUM CERAMIC / TANTALUM		PACKING / SHIPPING - NEW MATERIAL, CRITICAL DIMENSIONS			With Parcellan Council	С																						
CERAMIC / TANTALLIM	PAS-CER-PN-01	Packing / shipping specification change (loosening of tolerances)	P I		e.g. number of pieces on reel.	В			-			-				-	-	-				 				-	-	
	PAS-CER-PN-02	Dry pack requirements change	_	Change of dry pack requirements. (B: Relaxation of dry pack requirements (P): Tightening of dry pack requirements	e.g. change in dry pack assurance (HC, MBB) (8): MSL 3 -> MSL 1 (P): MSL 1 -> MSL 3	В										-		-				 				-	-	
CERAMIC / TANTALUM	PAS-CER-PN-03	Change of carrier (hav. reel)	Р 1	(P): Tightening of dry pack requirements  P Change of carrier	(P): MSL 1> MSL 3 e.g. change by material e.g. change by geometry.	В									H . H .													
CERAMIC / TANTALUM CERAMIC / TANTALUM		PACKING / SHIPPING - VISUAL INSPECTION	_				<u> </u>																					
CERAMIC / TANTALLIM	PAS-CER-PV-01	Change of labeling	1	P Change of labeling, also on reel.	(f) e.g. additional information (RoHS stamp) (P) e.g. change of customer specific information	В						-				-		-				 				-	-	
	PAS-CER-PV-02			P Marking on device.	e.g. change of content of marking e.g. change of method of marking e.g. change of appearance of marking	В						-				-						 				-	-	
CERAMIC / TANTALUM	PAS-CER-PV-03		P	Change in packing specification which does not described a change of dimensions or material of the packing.	e.g. change of appearance of marking e.g. change of documentation in packing																							
CERAMIC / TANTALUM			Р	not described a change of dimensions or material of the packing.	specification				1																			
CERAMIC / TANTALIM		LOGISTICS / CAPACITY / TESTING - EQUIPMEMENT	Т	Change in process technique which is not												T							$\top$			$\top$	Test o	effort depends on final risk
	PAS-CER-EQ-01	Production from a new equipment/loof which uses a different technology or which due to its unique form or function can be expected to influence the integrity of the final product	P	Change in process technique which is not already covered above.  Note: Changes affecting the product not covered by the table require also a PCN.	e.g. change from wet to dry technology.	С		• •		• -		•		Α -		-	-	•	В -		С -	 				-	@• Perfo	arrent. rmance test according to affected
CERAMIC / TANTALLIM			_											_	$\vdash$								+				proce Test e	iss change. Iffort depends on final risk
CERAMIC / TANTALUM	PAS-CER-EQ-02	Production from a new equipment/bool which uses the same basic technology (replacement equipment or extension of existing equipment pool)	- 1	PCN required for dedicated equipment for sensitive component production.	e.g. elimination of manual handling processes	С		•		•	•   •	•		Α -		-		•	В -		С -	 				-	@• Perfo	ament. rrrance test according to affected as chance.
CERAMIC / TANTALUM			_	Change of final test equipment which use																								
CERAMIC / TANTALUM	PAS-CER-EQ-03	Change in final test equipment type that uses a different technology	P	Change of final test equipment which use different technology.  PCN required for dedicated equipment for secretary recovery.	e.g. change of tester platform	с		• • •				-				-		- 1	@B -			 -	-   -			-	@• Gage	RSR / delta correlation
CERAMIC / TANTALLM		LOGISTICS / CAPACITY / TESTING - PROCESS FLOW																										
	PAS-CER-PF-01	Manufacturing site transfer or movement of a part of production process to a different location/site	P	Change of manufacturing site. Includes transfer as well as additional site. Note: Reorganization inside one plantisite is	e.g. movement or transfer of manufacturing site or process step(s) to a different location/site.	В													в -		С -	 				@•	@•	
CERAMIC / TANTALUM	PAS-CER-PT-02		-	not arrected	e.o. dual source / fab shalegy									_		+ +												
CERAMIC / TANTALLIM		Elimination or addition of a manufacturing process step	- 1	P Change of manufacturing process sequence.	e.g. washing / cleaning process e.g. change of order of processes	С		• • •	-			-				-		-				 				-	@• Chara	iction flow.
CERAMIC / TANTALLIM		LOGISTICS / CAPACITY / TESTING - Q-GATE			e.g. change from 100% to sample inspection						Т Т					<del> </del>										<del> </del>	200	and Armed Is Annel as Armed
CERMINE	PAS-CER-QG-01	Change of feet coverage used by the supplier to ensure data sheet compliance (e.g., elementorisedation of electrical measurementhest flow block, restoutor/enhancement of monitoring procedure or sampling)	- 1	Change of test coverage.	e.g. change from 100% to sample inspection e.g. test flow block, reduction from three to two temperature measurements e.g. change in burn infran in process.	С			-			-				-		-				 				-	- R (sel	ctr. funct.): test coverage. liability) only for change in burn in es.
Film capacitors		FILM CAPACITORS		<del></del>	ng maga maan mara ngoons.		·																					
Film capacitors	PAS-FLM-AN-01	Any chance with impact on screed upon technical contractual screements		P Intended to be used if no other type of change is applicable but the change affects agreed																								
Film capacitors	PAS-FLM-AN-01 PAS-FLM-AN-02	Any change with impact on agreed upon technical contractual agreements  Any change with impact on processability/insenfacturability at customer, which is not covered in the matrix below.	P	is approace out me change affects agreed technical contractual assessments	Not relevant for technical evaluation.  Technical interface means component terminals.	В.										+								1		@•		
Film capacitors Film capacitors	. Aurianneal		- 1		means component terminals.	8																				@•		
	PAS-FLM-DS-01	Change of data/heet parameters/electrical specification (min/max/typ. values) and / or ACIDC specification	Р	Change of application relevant information Not included: Editorial changes.	e.g. tighten of electrical parameter distribution	A	Risk assessment depending on change for each application.					-				-						 				-	-	
Film capacitors		apendentation (	-+	No technical change of product, process or			ни ниси арресавол.									+										+		
				No technical change of product, process or test. New description of behavior which was not specified before or which is different from initial specification. Please inicials classify, that Infoncial contains this type of change!																								
	PAS-FLM-DS-02	Correction of data sheet or issue of errats	1	initial specification.  Please indicate clearly, that Infoncte contains	e.g. data sheet correction because of new information about component behavior	A			-			-				-		-				 -				-	-	
Film capacitors			_																									
				Description of a new not previously covered parameter.																								
	PAS-FLM-DS-03	Specification of additional parameters	1 1	No technical change of the product.  (i): no influence  (ii): Risk assessment descended on other technical	e.g. adding new (lexted) parameter.	A			-							-		-				 				-		
-				Description of a new not previously covered parameter. As the product. (It is not included a change of the product. (It is inflamose (F)F, flask assessment depending on change for such application to provide evidence of additional parametes (stat. evaluation).																								
Film capacitors Film capacitors		MATERIAL	_																									
				Typicaly change within spony or PU sealing			A in combination with PAS-FLM-DS-01 or if change of sealing compound with effect to mechanical properties.																					
	PAS-FLM-MA-01	Change of material composition - Sealing Compound	P	Typically change within eposy or PU sealing without effect to mechanical properties. Note: Change from eposy sealing into PU sealing (both direction) will lead to generate a new product.	e.g. change of epoxy or PU composition	с	A: in case of high voltage components (rated voltage == 100V) (final judgement by tier 1, if used in HV application)		•	• -		•	• • (	@• ·		-	•	-				 				-	- Consi	ider vibration in application
				new product.			(final judgement by Ser 1, if used in HV application)																					
Film capacitors	PAS-FLM-MA-02	Change of material composition - Package		P Change material of package	Change material of package, e.g. change from PBT to PPS e.g. change of glas fiber ratio	В								• @•	٠.				- @•									ider AOI and processability
Film capacitors	. Aurianana	Change of Hamilton Composition - Processes	- 1	- County material or package	e.g. change of glas fiber ratio	В	A: in combination with PAS-FLM-PK-AN			•		•	•	• @•	1 '			•	- @•								- Consi	Aut and processionsy
	PAS-FLM-MA-03	Change of material composition - Lead/Termination	Р	Change of Lead/Termination Note: If change of lead frame material leads to an ESR change, than change of data sheet (PAS-FLM-DS-01) has to be respected.	e.g. change of basis material from Cu to Fe e.g. change of finishing from SnPb to Sn	В													в -			 				@•	- Chang	ge of base material: Consider high frequency parameter
Film capacitors				(PAS-FLM-OS-01) has to be respected.			B. for color (DE)																					
	PAS-FLM-MA-OI	Change of material composition - Metal Spray (Schoop)	Р	Change of Metal Spray (Schoop): Use different material for metal spray process for bosed and raiked types	e.g. from 2h to Al	с	M. A. TORRO SALU		-	@• -	@• -	@•	(	ტ• -	@• @			@•				 				-	- Consi	ider ESR rability Test for naked SMD
Film capacitors	PAS-FLM-MA-05	Change of material composition - Film	Р.	D Change of film material for bosed and naked types		С	B: for naked SMD			@• -	- @•	@• <i>a</i>	Q• @•			@•			@• -								@•	
Film capacitors	PAS-FLM-MA-05	Change of material composition - Metal Foil	P	types  P Change of metal foil for inner electrode	(same raw malerial) e.g. change from Al to Al-Zh alby	c			-	@• -						-			@• -			 					@•	
Film capacitors	PAS-FLM-MA-07		- 1	Change to a new or additional material supplier		c	Check if other PAS-FLM-MA is affected					•																reption material specification ins unchanged. Otherwise see
	PASH DAHMAT	Change of supplier of material	-   '	Change to a new or additional material supplier at component manufacturer which are described above.	e.g. for and source purpose	c			•	•	•	•					•   •	•	•								chang	ns uncranged. Otherwise see ge of material.
Film capacitors																												

March   Marc	Film capacitors		Changes of termination, surface finish, shape, color, appearance or dimension structure - Lead	P Change of lead diameter thickness (for soldered TriT components)	e.g. change lead diameter from 0.5 to 0.4 mm e.g. change of thickness of terrstral	A		- @•	1 1		0. 0	ا ما	0.	0.		- @B		n. n.								
March   Marc		PRS-FEM-DE-01	Dameer / Incomes								@• @	• @•	- @•	-						-			-			-
March   Marc	Film capacitors		Changes of termination, surface finish, shape, color, appearance or dimension shucture - Termination Area	I P which are affecting the area for connection of component and PCB	e.g. change of termination layer thickness e.g. change in termination dimensions / shape	В						-				_				-			-		- @•	•
March   Marc	Film capacitors	PAS-FLM-DE-03	Changes of inner construction - Inner Connection	. p Change of inner connection	e.g. change from soldered connection to welded connection	С	•	- @•		- @•	@• -	@•	- @•	@• @•		- @•	- (	2• @•		-			-			
March   Marc	P	PAS-FLM-DE-04	Changes of lemination, surface finish, shape, color, appearance or dimension shucture - Appearance	Change of appearance.  (i): Change in appearance without impact on product integrity.  (ii): Change in appearance with impact on product integrity.  Note: Marking on device is defined assemble integrity.	e.g. change or adding of color on component	Check if MATERIAL is affected.						-   -					-	-   -		-			-	-   -		-
Marcon   M	Film connection	PAS-FLM-DE-05	Changes of inner construction - Film/Foil	. p Change of film or foll design	e.g. change to a different foil supplier.	A: in combination with PAS-PLM-DS-01		- •		@• •					- •	- B	-			-			-			@•
March   Marc	F	PAS-FLM-DE-06	Changes of inner construction - Insulation System	P Change of inner insulation to protect winding element against housing.	e.g. change of potting material e.g. change of number of inner insulation layers	с										- B	-			-			-			@•
Mathematic	Film capacitors	PAS-FLM-DE-07	Changes of termination, surface finish, shape, color, appearance or dimension shuckure -		(depending of insulation material thickness)  e.g. change of dimension or shape  e.g. change of surface.	В		- @•	- @•		@• @	• -	@• @•	@• -			@•			-			-			
March   Marc	Film capacitors		PROCESS																							
Martin	Film capacitors	PAS-FLM-PR-01	Changes in process technology or manufacturing methods - Package	P Change of resin filling or hardening process (releaset for bosed types only)	sequences, potting,) e.g. change in hardening process (temperature, time)	С	• •	• •			•	-	•				-			-			-			-
Part	F	PAS-FLM-PR-02	Changes in process technology or manufacturing methods - Terminal Attach	P Change Terminal Attach Process to winding element for bosed and nacked types.	e.g. spraying and / or galvanic process, e.g. welding / soldering	B: for naked SMD										- В	-			-						Consider ESR Solderability Test for naked SMD
March   Marc	Film capacitors	PAS-FLM-PR-03	Changes in process technology or manufacturing methods - Winding			С		• .		@• •		-				- B	-			-			-			components.
March   Marc	Film capacitors	PAS-FLM-PR-04	Process integrity: tuning within specification	- P Variation within process specification.	e.g. process control							-					-			-			-			•
	Film capacitors	PAS-FLM-PN-01	PACKING / SHIPPING - NEW MATERIAL, CRITICAL DIMENSIONS  Packing / shipping specification change (bosening of tolerances)	P P Change of packing specification.	e.g. number of pieces on reel.	В						- 1					-			-			1 - 1			
March   Marc	F	PAS-FLM-PN-02		Change of dry pack requirements.  I P (I): Relaxation of dry pack requirements.	e.g. change in dry pack assurance (HC, MBB) (B): MSL 3 -> MSL 1												-			-						
March   Sample   March   Mar	Film capacitors	DATE THAT THE CO.																	_							
March   Marc	Film capacitors	PAZPEZPEROZ		P P Cargo Caria	e.g. change by geometry.	В				1.1.		لنا	-   -	1 . 1 .	1 - 1 -	1 . 1 .	1 - 1			1 - 1		<u> </u>				<u> </u>
March   Marc	Pilm capacitors	PAS-FLM-PV-01		I P Change of labelling, also on real.	(i) e.g. additional information (Roh'S stamp) (P) e.g. change of customer specific information	В						-					-			-			-			-
	P	PAS-FLM-PV-02	Change of product marking	P Marking on device.	e.g. change of content of marking e.g. change of method of marking	В						- 1					-			-			-			
Maria California Paris California Pari	Film capacitors	PAS-FLM-PV-03	Change of gadding/shipping specification	Change in packing specification which does P P not described a change of dimensions or																						
Part	Film capacitors			material of the packing.	specification																					
March   Marc	Pilm capacitors		Production from a new equipmentition which uses a different technology or which due to its unique form or function can be expected to influence the integrity of the final product.	P Drange in process technique which is not already covered above.  Note: Changes affecting the product not covered by the table require also a PCN.	e.g. implementation of new machines	С	•			@•	@• @	•				- В				-			-			Performance test according to affect process change.
Part	Film capacitors	PAS-FLM-EQ-02				с	• • •			@•	@• @	$\cdot   \overline{\cdot}  $			$ \cdot $	- В	-			-			-			Test effort depends on final risk assessment.  Performance test according to affect process change.
Part	Film capacitors			P P Change of final test equipment which use different technology. PCN required for dedicated equipment for sensitive parameters.	e.g. change of tester platform	с						-				- @в	-			-			-			
March   Marc	Film capacitors				e.g. movement or transfer of manufacturing site or process steptial to a different to allocation														i							0.
March   Marc	Film capacitors			not affected	e n. dual anunce ( fab strategy				<u> </u>		•	•				• •	<b>L</b>	•		-					- @•	
Part	Film capacitors	PAS-FLM-PF-02		P Change of manufacturing process sequence.	e.g. washing / cleaning process e.g. change of order of processes	С	•					-					-			-			-			Characterisation depends on impact production flow.
Part	Film capacitors				e.g. change from 100% to sample inspection										П		Т			Т			Т Т			R (electr. funct is test coverage.
Part	Film capacitors	PAS-FLM-QG-01	monitoring procedure or sampling)	p Change of fast coverage.	e.g. see now book, reduction from three to two temperature measurements e.g. change in burn in/run in process.	С						-   -					-			-			-			<ul> <li>R (reliability) only for change in burn process.</li> </ul>
Maria	QUARTZ CRYSTAL / SAW		ANY																							
State   Stat	QUARTZ CRYSTAL / SAW	PAS-QUA-AN-01			Not relevant for technical evaluation.	•						-					-			-			-			-
Maria		PAS-QUA-AN-02		P P	Technical interface means component terminals.	В						-					-			-			-		- @•	-
Part					1																					
Part	QUARTZ CRYSTAL / SAW			Channel of marketing actions interesting		Part						1 1					Т			T			$\overline{}$			
Part			Change of datasheet parameters/electrical specification (min./max./typ. values) and / or ACIDC specification	P Change of application relevant information Not included: Editorial changes.	e.g. Sighten of electrical parameter distribution	A Risk assessment depending on change for each application.						-					-			-			-			
Section		PAS-QUA-05-02		No technical change of product, process or								-					-			-			-			-
**************************************		PAS-QUA-05-02		No technical change of product process or set.  set.  set.  process or set.  I process or set.  I process or set.  Please indicate there or which is different from the control of the con	e.g. data aheel correction because of new information about component behasion							-					-						-			
Model   Mode	QUARTZ ORYSTAL / SAW		Connection of data sheet of travel of errors  Connection of data sheet of travel of errors  Connectication of additional parameters	No technical change of product process or set.  set.  set.  process or set.  I process or set.  I process or set.  Please indicate there or which is different from the control of the con	e.g. data aheel correction because of new information about component behasion	A	• • • • • • • •					-					-			-			-			
Manufacture	CLARTZ CRYSTAL I SAW  CLARTZ CRYSTAL I SAW  CLARTZ CRYSTAL I SAW	PAS-QUA-OS-43	Connection of data shared or traces of ensults  Specification of additional personalers  Specification of additional personalers	We have been delivered in the product, process or building the selection of the select	e.g. data aheel correction because of new information about component behasion	A .	• · · · · · · · · · · · · · · · · · · ·						 							-			-			
March   Marc	CLIMITE CRYSTAL / SAW  CLIMITE CRYSTAL / SAW  CLIMITE CRYSTAL / SAW  CLIMITE CRYSTAL / SAW	PAS-QUA-OS-Q3 PAS-QUA-WA-01	Connection of data desert in sous of a male  Questionation of solidizing permitting  Questionation of solidizing permitting  MMSTANAL  MANTANAL  M	We believe designed in product, process   I   specified believe or which was not all specified believe or which the other was not been designed believe or which is different both the process of the	us, date deed consolidan hacusses of reas- estormation about component behavior and adding now (behavior) parameter.	A A																	-			CS may be informed
Maria and the property of th	CLIMITZ CRYSTAL I SAW	PAS-QUA-DS-Q3  PAS-QUA-MA-01  PAS-QUA-MA-02	Connection of data sheet or trace of errors  Security Connection of adultional parameters  Biolizable  Connection of adultional parameters  Biolizable  Connection of connections - Garde State  Connection of research compressions - State  Connection of research compressions - State	We whence through of problem prices are seen as the problem of the	e.g. disk deed connection backware of new reformation should be compressed advantur entertainty and compressed advanture expenses and compressed advanture expenses and compressed and com	A A A	• • • • • • • • • • • • • • • • • • •	- •	- @•	• .		-		• @•	@• -		@•			-						change
Part	CUMPEZ CRYSTOL I SANN  COMPEZ CRYSTOL I SANN	PAS-QUA-05-03  PAS-QUA-MA-01  PAS-QUA-MA-02  PAS-QUA-MA-02  PAS-QUA-MA-03	Considered of data desired or traces of ensuits  Topical function of additional parameters  METERIAL  Conteger of monitori compression - Quarte Traces  Conteger of monitori compression - Quarte Traces  Conteger of monitori compression - Conteger  Cont	Leading to the control of the contro	es, data shad connection because of man electrical solution composed talketer es, soliday man (bushed) promotive.	A A A B			- @•		•	•	• • • •	. @•	@• -	• B	@•						-			change
Part	CLANTE CRYSTAL I SAW  DUMITE CRYSTAL I SAW  CLANTE CRYSTAL I SAW	PAS-QUA-DIS-Q3  PAS-QUA-MA-01  PAS-QUA-MA-02  PAS-QUA-MA-02  PAS-QUA-MA-03  PAS-QUA-MA-04  PAS-QUA-MA-05	Consider of data desired or state of errors.  Search order of adallism of permission.  Search order or adallism of permission.  Search order ord	Delivery of the property of	eg cikh dadi correlato hosaaa di navi ederati a salisi correlato historia eg salisi gene (public) promete.  eg salisi gene (public) promete.  eg chinge tron corrent si opino.  eg chinge (public) promete.  eg chinge (public) promete.	A A B B B B B B B B B B B B B B B B B B			- @•		•	•	• • • •	. @•	@• -	• B	@•	• •		-	- @• - @•		-			X-Ray inspection may be influenced when sealing is containing Pb
## 1	CLANTE CRYSTAL I SAW  DAMES CRYSTAL I SAW  CLANTE CRYSTAL I SAW	PAS-QUA-DIS-Q3  PAS-QUA-MA-01  PAS-QUA-MA-02  PAS-QUA-MA-02  PAS-QUA-MA-03  PAS-QUA-MA-04  PAS-QUA-MA-05	Consider of data desired or state of errors.  Search order of adallism of permission.  Search order or adallism of permission.  Search order ord	Delivery of the property of	eg cikh dadi correlato hosaaa di navi ederati a salisi correlato historia eg salisi gene (public) promete.  eg salisi gene (public) promete.  eg chinge tron corrent si opino.  eg chinge (public) promete.  eg chinge (public) promete.	A A B B B B B B B B B B B B B B B B B B			- @•	•	• •	•	• • • •	. @•	@• -	• B • B • B • B	@•	• •		-	- @• - @•		-			X-Pay inspection may be influenced when sealing is constaining Pb
## 1	CLAMIZ CHISTAL / SAW	PAS-QUA-OS-Q3  PAS-QUA-MA-O1  PAS-QUA-MA-O1  PAS-QUA-MA-O2  PAS-QUA-MA-O2  PAS-QUA-MA-O3  PAS-QUA-MA-O5  PAS-QUA-MA-O6	Consider of data desired or trace of errors  Specification of additional parameters  Security of the Consideration of Conside	In the second of member of present present of the second	eg cide delet consiste historiae di mai elemente autori comprenent inflazioni especialistico della comprenenta inflazioni eg cidenge lamo (publica) promette.  4a cidenge lamo committe in spiro, eg cidenge plazioni comprenenta in comprenenta in eg cidenge plazioni comprenenta in comprenenta in eg cidenge plazioni comprenenta in comprenenta in eg cidenge plazioni comprenenta in comprenenta in comprenenta in eg cidenge plazioni comprenenta in comprenenta in comprenenta in eg cidenge plazioni comprenenta in comp	A A B B A C C		- · · · · · · · · · · · · · · · · · · ·	- @•	•	• •	•	• • • • • • • • • • • • • • • • • • •	. 0.	@• -	• B • B • @B • B • @B	@•	• •		-	- @• - @• - @Y		-			chance  X-Ray inspection may be influenced when sealing is containing Pb  Electrical function affected in case of
## 1 A STATE OF THE PARTY OF TH	CAMPIC CHIESTA, 1 SAM  CAMPIC CHIESTA  CAMPIC CHIESTA, 1 SAM  CAMPIC CHIESTA  CAMPIC	PRS-CUM-US-03  PRS-CUM-US-01  PRS-CUM-US-01  PRS-CUM-US-02  PRS-CUM-US-03  PRS-CU	Consider of data desire for each of entitle  Search of the Consider of partners  Search of the Consider of the Con	P   We have been dropped or selected pursuase or to be consistent with the consisten	eq. ching the content to be a content of the conten	A A A B B B A C C B B	  	@• @•	- @• - @• - @v - @v - @v		•	• • • • • • • • • • • • • • • • • • •	· · · · · · · · · · · · · · · · · · ·	• @•	@• -	- B - B - @B - B - @B - B		• •		-	- @• - @• - @Y		-			May impection may be influenced when washing is contributed the season of the sea
## 1 A STATE OF THE PARTY OF TH	CAMPIT CHITCH, 1 DAY  ALARMIC CHITCH, 1 DAY  CAMPIT CHITCH, 1 DAY	PRS-CUM-US-03  PRS-CUM-US-01  PRS-CUM-US-01  PRS-CUM-US-02  PRS-CUM-US-03  PRS-CU	Consider of data desire for each of entitle  Search of the Consider of partners  Search of the Consider of the Con	Description	eq. ching the content to be a content of the conten	A A A B B B A C C B B	  		- @• - @• - @Y - @Y - @Y		•	• • • • • • • • • • • • • • • • • • •	· · · · · · · · · · · · · · · · · · ·	• @•	@• -	- B - B - @B - B - @B - B		• •		-	- @• - @• - @Y		-			May impection may be influenced when washing is contributed the season of the sea
Mode   Control   Fine   Control	ALANTE CHISTA, 1 JAN  ALANTE CHISTA, 1 JAN  JANES C	PRS-CUA-OS-03  PRS-CUA-OS-03  PRS-CUA-MA-01  PRS-CUA-MA-02  PRS-CUA-MA-02  PRS-CUA-MA-03  PRS-CUA-MA-03  PRS-CUA-MA-03  PRS-CUA-MA-04  PRS-CUA-MA-04  PRS-CUA-MA-04	Consider of data design of entire in transition of entire in the control of the control of entire in the control of entir	Description	eg, cide shell consected frame of many and many	A A B B C C C C C			- @• - @• - @Y - @Y - @Y			-		· @•	@• -	- B - B - @B - B - @B - B - @B - B	@•	• • • • • • • • • • • • • • • • • • •		-	- @• - @• - @Y		-			May impection may be influenced when washing is contributed the season of the sea
Section   Sect	CAMPET CHROSIN, 1 SAME  GAMES CHROSIN CHROSIN CHROSIN CHROSIN  GAMES CHROSIN C	PROCULADO DE PROCULADA DE PROCULADA DE COMPANO DE PROCULADA DE PROCULA	Consistent of data desired or seaso of emails  Securitization of additional parameters  Securitization of additional parameters  Securitization of additional parameters  Security of mainst compressions—Cauda Datases  Consept of mainst compressions—Datases	P   Desput files before   P   Desput files before	e.g. dish shart comoden because of man abundance and recognised standard experience of the company of the company e.g. along two placked promotes e.g. change from consent in space, e.g. change of placked promotes of the e.g. change of placked placked and e.g. change of placked placked and e.g. change of placked placked and e.g. change of placked placked e.g. change of placked e.g. change of placked placked e.g. change of placked e.g.	A A A B B B A C C C B B		@• • • • • • • • • • • • • • • • • • •	- @• - @• - @Y - @Y - @Y				· · · · · · · · · · · · · · · · · · ·	· @•	@•	- B B - @B - B - @B - B - B	@•	• • • • • • • • • • • • • • • • • • •		-	- @• - @• - @Y		-			Anten.  Any register on the Villamont of the sadily in containing the entire of the sadily in containing the table the same and office of the table the same and office of the table the entire of the sadily in a transmission of the entire of the sadily in the entire of the sadi
Part   Control Contr	CAMPIC CHIEFER, 1 JAMP  SAMPIC CHIEFER, 1 JAMP  CAMPIC	PROCULA DISCO.  PROCULA MACO!  PROCU	Consists of data desired or lease of emails  Township of additional permeters  Well State  Congreg of manufact computers - Quelo State  Congreg of manufact computers - Quelo State  Congreg of manufact computers - Const Congregation  Congreg of manufact computers - Const State  Congreg of manufact computers - St	P   Desput files before   P   Desput files before	e.g. dish shart comoden because of man abundance and recognised standard experience of the company of the company e.g. along two placked promotes e.g. change from consent in space, e.g. change of placked promotes of the e.g. change of placked placked and e.g. change of placked placked and e.g. change of placked placked and e.g. change of placked placked e.g. change of placked e.g. change of placked placked e.g. change of placked e.g.	A A A B B B B B B B B B B B B B B B B B		@•						. @	@•	- B B - @B - B - @B - B - B	@•			-	- @• - @• - @Y		-			Anton.  X they requested may be influenced when well-get consistency of the continuous parts.  Exects out funding a street of the continuous parts.  Exects out funding with order of continuous parts and continuous parts are to be assessed. Mit. right be always.  **Special continuous parts of the continuous parts and the continuous parts and continuous parts and continuous parts.  **Special continuous parts and continuous part
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95-03-05-05 Orange of their combination - Cases Shark	CAMPET CHISTIN, 1 JAN  AMERIC CHISTIN, 1 JAN	PRE-CUA MED 1 PR	Consider of data design of entire in contents of entire in contents of data design of entire in contents or en	P   We whence they are present present or to be considered and an are of the considered with the conside	eg. citing the content to be come of man of	A A A B B B C C C B B B C C C B B B B C C C C B B B B C C C C C B B B B C			@• • • • • • • • • • • • • • • • • • •	@Y	@•		@ · · · · · · · · · · · · · · · · · · ·		@• · · · · · · · · · · · · · · · · · · ·		@•			-	- @• - @• - @• - @•					Adjustment on the influence of the
so change design of sign there	ALANTE CHISTAL, 1 JAN  ALANTE CHISTAL  ALANT	PRO-QUA-05-03  PRO-QUA-MIN-01  PRO-QUA-MIN-02  PRO-QUA-MIN-02  PRO-QUA-MIN-03  PRO-QUA-MIN-05	Consistent of data design of entire in contract of entire in Consistent of data design of entire in Consistent of Entire in Co	P   Despris Clark State   P   Despris Clark State   P   Despris Clark State   Despris	eg. citing the content to be come of man of	A A A B B B B B A A B B B B B B B B B B					@*		@Y	. 8.			@• · · · · · · · · · · · · · · · · · · ·			-	- @• - @• - @• - @•					Any representation for inflammation of the state of the s
	CAMPET CHIEFER, 1 JAMP  CAMPET	PRA-GUA DE GO PRA-GUA MA ED PRA-GUA MA ED PRA-GU	Consider of data design of entire of	P   P   Compare of the memory of a memory of the memory	eg. Other hand connection because of man whereast is statut component influence and man whereast is statut component influence as a statut component influence as a statut component in st	A A A B B B C C C B B B C C C B B B B C C C C B B B B C C C C C B B B C			@• • • • • • • • • • • • • • • • • • •	@* @* @* @* @* @* @* @* @* @* @* @* @* @	@ ·		@Y	. (a)	© - · · · · · · · · · · · · · · · · · ·	- B B - B B	@•	· · · · · · · · · · · · · · · · · · ·		-	- @• - @• - @• - @•					Adjustment on the influence of the
100.0000   100.000000   100.00000   100.000000   100.000000   100.000000   100.0000000   100.000000   100.0000000   100.000000000   100.000000000	CAMPET CHIEFER, 1 JAMP  MARKET CHIEFER, 1 JAMP  GARRET	PROCULA CISCO PROCULA MARCO PR	Consultant of data desert in town of employ  Security of the Consultant of adallisating parameters  Security of Consultant of adallisating parameters  Security of Consultant of American Consultant October Consultant Octobe	P   P   Compare of the memory of a memory of the memory	eg. Other hand connection because of man whereast is statut component influence and man whereast is statut component influence as a statut component influence as a statut component in st	A A A B B B C C B B B A A B B B C C C C			@	@Y	@*		@Y				@•			-	- @• - @Y - @•					Adjustment on the influence of the

QUARTZ CRYSTAL / SAW		Changes in process technology or manufacturing methods - Quartz Stank	. Р	Change of Quartz Blank process		С		•				-	-			-			• -	- B -	•						-			-	
QUARTZ CRYSTAL / SAW	PAS-QUA-PR-02	Changes in process technology or manufacturing methods - Blank Etching / Cleaning	. Р	Change of Blank Elich/Clean process Using different / new technology	e.g. change from liquid etching to plasma etching	С			100	-   -	-	-	-		-   -	-	- @•	-	@• -	- B -	-		-		1 - 7		-				
QUARTZ CRYSTAL / SAW	PAS-QUA-PR-03	Changes in process technology or manufacturing methods - Electrode Formation	. Р	Change of Electrode Formation process	e.g. change from evaporation to sputtering	С						-	-			-	•	-	@• -	- B -	•		-		- 7		-			- 1	
QUARTZ CRYSTAL / SAW	PAS-QUA-PRIOR	Changes in process technology or manufacturing methods - Trimming	. Р	Change of Auto Trim process (Method of fina frequency tuning)	e.g. change from evaporation to ion beam	с						-	-			-		-	@• -	- в -			-				-				
QUARIZ CRESIAL / SAW				Change of Stank bonding / annealing process	ı.								@Y												-						
QUARTZ CRYSTAL / SAW	PAS-QUA-PR-05	Changes in process technology or manufacturing methods - Bonding / Annealing	- P	Change of Blank bonding / annealing process Change of method how apply conductive material to base or blank		С		•									• •		• -	- B ·					@Y -		-				
QUARTZ CRYSTAL / SAW	PAS-QUA-PR-05	Changes in process technology or manufacturing methods - Can / Cap Attaching	. Р	Change of Cap/Can attaching process	e.g. change of the sealing process e.g. change from batch oven to reflow oven	С															•		-				-			-	
QUARTZ CRYSTAL / SAW	PAS-QUA-PR-07	Changes in process technology or manufacturing methods - Molding	. P	Change of Overmolding process. Not relevant	e.g. change of overmoid process parameter	с			- @	•	@•	•	@• 6	g• • .	. @•	-		-	•	- в •		• -	-				-			- 1	
	PAS-QUA-PR-08	Changes in process technology or manufacturing methods - Marking	. Р	Change of Marking process	e.g. change from inked marking to laser marking e.g. marking of pin 1	В						-	-										-		@• -		-			- ACI ct	heck recessary!
QUARTZ CRYSTAL / SAW	P45-01W-P9-09	Changes in process technology or manufacturing methods - Aging		Change of Aging process. Typically no aging	e.g. change of appearance (additional marking) If aging is done: e.g. change of times or	С				g• -	-	+	_		_					- B -				_	+	+		_	-		
QUARTZ CRYSTAL / SAW QUARTZ CRYSTAL / SAW	PAS-QUA-PR-10	Process integrity: tuning within specification	. P	done on quartz crystals. Variation within process specification.	e.g. change from loled meeting to laser marking e.g. marking of pix 1 e.g. change of appearance (additional marking) if aging is done. e.g. change of times or temporatures. e.g. process control	c			- (-			-				-					-				+++				-		
QUARTZ CRYSTAL / SAW		PAULING STOPPING - NEW INCIDENCE, CHITCHE DIRECTIONS					I																								
QUARTZ CRYSTAL / SAW	PAS-QUA-PN-01	Packing / shipping specification change (loosening of tolerances)	P P	Change of packing specification.	e.g. number of pieces on reel.	В			100	-   -	-	-	-			-		-			-		-		- 7		-			-	
	PAS-QUA-PN-02	Dry pack requirements change	ı P	Change of dry pack requirements. (8: Relaxation of dry pack requirements (P): Tightening of dry pack requirements	e.g. change in dry pack assurance (HC, MES) (8: MSL 3 -> MSL 1 (P): MSL 1 -> MSL 3	В						-	-																/		
QUARTZ CRYSTAL / SAW	PAS-QUA-PN-03	Change of carrier (law, reel)		(P): Tightening of dry pack requirements  Change of carrier	(P): MSL 1> MSL 3 e.g. change by material e.g. change by geometry.	В					+-	+	_		-	_	_		_	_	+		+ +	_	-	+	-			_	
QUARTZ CRYSTAL / SAW QUARTZ CRYSTAL / SAW	PASPAGNERAL	PACKING / SHIPPING - VISUAL INSPECTION		Casgo Cara	e.g. change by geometry.																									_	
	PAS-QUA-PV-01	Change of labeling	I P	Change of labeling, also on reel.	(f) e.g. additional information (RoHS stamp) (P) e.g. change of customer specific information	В						-	-										-				-				
QUARTZ CRYSTAL / SAW										+	+-	+ +				_			_		+		+ +	_	+	_					
QUARTZ CRYSTAL / SAW	PAS-QUA-PV-02	Change of product marking	I P	Marking on device.	e.g. change of content of marking e.g. change of method of marking e.g. change of appearance of marking	В					-	-	-			-		-					-			-	-			-	
	PAS-QUA-PV-03	Change of packing lahipping specification	РР	Change in packing specification which does not described a change of dimensions or material of the packing.	e.g. change of documentation in packing							-	-			-		-									-				
QUARTZ CRYSTAL / SAW QUARTZ CRYSTAL / SAW		LOGISTICS / CAPACITY / TESTING - EQUIPMEMENT		material of the packing.	specification						_						_				_			_		_			$\rightarrow$	_	
				Change in process technique which is not	e. g. new equipment supplier with different process concept																									Test of	effort depends on final risk
QUARTZ CRYSTAL / SAW	PAS-QUA-EQ-01	Production from a new equipment/loof which uses a different technology or which due to its unique form or function can be expected to influence the integrity of the final product	PP	Change in process technique which is not already covered above.  Note: Changes affecting the product not covered by the table require also a PCN.	concept	С												-		- @B ·										@• Perform	ormance test according to affected sex change.
QUARTZ CRYSTAL / SAW			H	PCN required for dedicated equipment for sensitive commonent renduction.	an additional analyses to immore the firm															-										Test of	effort depends on final risk sament. ormance test according to affected
QUARTZ CRYSTAL / SAW	PAS-QUA-EQ-02	Production from a new equipment/tool which uses the same basic technology (replacement equipment or extension of estating equipment pool)	- P		e.g. additional equipment to increase production capacity e.g. replacement of same equipment	С											-	-		- @B			-							@• Perform	sament. ormance test according to affected sss change.
	PAS-QUA-EQ-03	Change in final test equipment type that uses a different technology		Change of final test equipment which use different technology. PCN required for dedicated equipment for sensitive parameters.																- @B ·											RSR / delta correlation
QUARTZ CRYSTAL / SAW			PP	PCN required for dedicated equipment for sensitive parameters.	e.g. change of tester platform	С													1	- @B ·										@◆ Gage R	, sax / delta correlation
QUARTZ CRYSTAL / SAW	1	LOGISTICS / CAPACITY / TESTING - PROCESS FLOW			an magnetic bands of mandack-in-site-																				<del>-</del>					_	
	PAS-QUA-PF-01	Manufacturing sile transfer or movement of a part of production process to a different location/site	РР	Includes transfer as well as additional site.  Note: Reorganization inside one plantisite is	e.g. movement or transfer of manufacturing site or process step(s) to a different location/site. e.g. dual source / fab strategy	В					-	•	•		.   .				• -	• B		• -	-				-		- @•	@•	
QUARTZ CRYSTAL / SAW	PAS-QUA-PF-02	Elimination or addition of a manufacturing process step		not affected	e.g. dual source / fab shalegy e.g. washing / cleaning process	С				_		1 1	-		+									+	+	+			$\rightarrow$		acterisation depends on impact of action flow.
QUARTZ CRYSTAL / SAW QUARTZ CRYSTAL / SAW	PAS-QUA+F-QZ	LOGISTICS / CAPACITY / TESTING - Q-GATE		Change of manufacturing process sequence.		·													-   -										نند	product	tion flow.
COMP CATOLOGICA	PAS-QUA-QG-01	Change of test coverage used by the supplier to ensure data sheet compliance (e.g., elementarios) electrical measurement heat flow block, relaxed environment of monitoring procedure or sampling)	П.		e.g. change from 100% to sample inspection e. g. test flow block, reduction from three to two temperature mass remove.	С																								R (elec	ectr. funct.): test coverage. liability) only for change in burn in
QUARTZ CRYSTAL / SAW			. P	Change of fast coverage.	temperature measurements e.g. change in burn in/run in process.	e						-				-		-												- R (relat	ability) only for change in burn in as.
Al-Cap		ALUMIUM ELECTROLYTIC CAPACITORS			*		•																								
Al-Cap	Darsai I Lancot	ANY		Intended to be used if no other type of chang is applicable but the change affects agreed							_	Т				<del>- 1</del>		П							_				-	$\overline{}$	
Al-Cap											-	-	-			•		-					-				-				
Al-Cap	PAS-ALU-AN-02	Any change with impact on processability/manufacturability at customer, which is not covered in the matrix below.	P P		Technical interface means component terminals. See processability on board level.	В					-	-	-			-		-			-		-				-		- @•		
Al-Cap		DATASHEET		T		1	1		_			т т						т							_				$\overline{}$	_	
Al-Cap	PAS-ALU-DS-01	Change of datasheet parameters/electrical specification (min/max/lyp, values) and / or ACIDC specification	P P		e.g. Sighten of electrical parameter distribution	A	Plak assessment depending on change for each application.	100		-   -	-	-	-			-		-			-		-				-			-	
				No technical change of product, process or test.																											
	PAS-ALU-DS-02	Correction of data sheet or issue of errats	1 1	New description of behavior which was not specified before or which is different from initial specification.	e.g. data sheet correction because of new information about component behavior	A			100	-   -	-	-	-			-		-			-		-		- 7		-				
				apecified before or which is different from initial specification.  Please indicate clearly, that infoncts contains this type of change!  Assessment in anticration required!																											
м-сар																															
	PAS-ALU-DS-03	Specification of additional parameters		parameter. No technical change of the product. (i): no influence (iii): Risk assessment depending on change it	e.g. adding new (tested) parameter.	A																									
	- AND COLO	Specification or according to an enter a		(P): Risk assessment depending on change t each application to provide evidence of additional parameter (stat. evaluation)																											
Al-Cap		MATERIAL		additional parametes (stat. evaluation)								11																			
Al-Cap		MATERIAL					Consider effect on surface tension, mechanical robustness or thermal properties			$\overline{}$		Т						П	$\neg \neg$		$\overline{}$		т	$\neg$	$\overline{}$	$\overline{}$			$\overline{}$		
	PAS-ALU-MA-01	Change of material composition - Housing	РР	Change of housing	e.g. change Al alloy for housing	с	mechanical robustness or thermal properties						-				• @•						-				-				
Al-Cap							S: only if a cap holder holds the capacitor body by pressing.																								
							S: in case of external surface of sealing is changed.																								
	PAS-ALU-MA-02	Change of material composition - Sealing	PP	Change of sealing	e.g. change of rubber compound e.g. change of sealing disc material (solal, Snap in)	С	(Consider gluing, laquering, coating of PCB, nano coating, washing,)		•	•	'   -	•	•	•   •   •	•   •	•	- @•	@S	•								-				
Al-Cap	PAS-ALU-MA-03	Change of material composition - External Insulation		Change of external insulation / sleeving	e.g. change from PVC into PET e.g. change of color	с	B: Only for glued capacitors.		• @			+ - +	-					@S					+ +	_	+	_				Disser	ed Hurridity test can be done ut applying voltage.
Al-Cap	PADALDINA	Charge of Haseina Composed 1 * East has the diseason								, ,		÷	@●						-		_		+ - +		-	-				witout	tapplying voltage.
	PAS-ALU-MA-04	Change of material composition - Lead / Termination	P P	Change of lead or outer termination.	e.g. change of lead from iron into copper e.g. change of lead finish from tin/lead into tin	В	A: in case of change of lead material (consider vibration, valid only when the all caps are not additionally fixed in the annitration).		•		-		-		•	-	- •	•		• B -	•	•	-						- @•	- 1	
re-cap	PAS-ALU-MA-05	Chance of material composition - Internal Insulation / Paper	t. H	Change of paper type / internal insulation	e.o. change of paper thickness 50 um to 40 um															- B										0.	
Al-Cap	- MO-MLU-MA-65	ыныңы ы навити сопровооп - insuras insussion / Рарег	РР	wage or paper type / internal insulation	w.g. "mange or paper эписклева 50 µm to 40µm	е	A: Only if impedance increase (delta characterization). Check if datasheet is affected (PAS-ALU-OS-91).				_			•					•	- в										@•	
	PAS-ALU-MA-06	Change of material composition - Electrolyte	РР	Change of electrolyte	e.g. change in formulation	С	A: Only if impedance increase (delta characterization). Check if datasheet is			.   .	-		-			-		-		- в			-		1 - 1					@•	
Al-Cap Al-Cap	PAS-ALU-MA-07	Change of material composition - Tape Material	P P	Change of closing tape material	e.g. change of glue or basis material	С	affected (PAS-ALU-OS-01).			- @			- 6				- @•														
Al-Cap	PAS-ALU-MA-08	Change of material composition - Tape Material Change of material composition - Sase Plate	P P	Change of closing tape material Change of base plate material	e.g. change of used plastic material	В			•	- @	•		- [			-	- @•	@•					-			1	-				effort depends on final risk
	PAS-ALU-MA-09	Change of supplier of material	- P	Change to a new or additional material suppli at component manufacturer.	e.g. for 2nd source purpose	С				•   •		•	•		· •	•	• •	•	• -	• B •	•	•	-		1 7		-			@  Perform materia Assump	sames, ormance test according to affected rist. inplion material specification ins unchanged. Otherwise see on of material.
Al-Cap			$\sqcup \bot$		<u> </u>																									change	a uncranged. Otherwise see ye of material.
Al-Cap		DESIGN																							_						
Al-Cap	PAS-ALU-DE-01	Changes of termination, surface finish, shape, color, appearance or dimension shucture - Wire Diameter		Change of wire diameter	e.g. change from 0.5 into 0.5 mm wire diameter.	A		•			-	-	-		•	-	- •	-		• B	•	•	-								
Al-Cap	PAS-ALU-DE-02	Changes of termination, surface finish, shape, color, appearance or dimension shucture - Termination	I P	Change of fermination appearance For welded Al capacitors only.	e.g. change from malt lin into bright lin.	В					-		-			-		-		• B ·	•	• -	-		- 7		-		- @•		
	PAS-ALU-DE-03	Changes of termination, surface finish, shape, color, appearance or dimension structure - Appearance	I P	Orange of appearance  Note: Marking on device is defined as separate change (PAS-ALU-PV-02).	e.g. change of colon/appearance e.g. change of safety vent shape	В							-			-		-					-								
Al-Cap	PAS-ALU-DE-04		11.	seperate change (PAS-ALU-PV-02).  Change of rubber sealing stand-off shows its		Α.								@	0.0		- @•														
Al-Cap		Changes of termination, surface finish, shape, color, appearance or dimension structure - Rubber Sessing Changes of inner construction - Alaminum Foli	1 P	radial)	e.g. change of profile / design	C														- B			+							@•	
Al-Cap	PAS-ALU-DE-05	Changes of inner construction - Authority Folia Changes of inner construction - Separator	. P	Change of A fol width Change of seperator width Change of seperator density	e.g. change of width	С								:			- @•			- B -							-	: :			
Al-Cap			- P	Change of seperator density	e.g. change of separator density/resistivity	c													•	- B -	- 0		+ - +				-			@◆ Terrire	inal Strength (11) not for axial
Al-Cap	PAS-ALU-DE-08 PAS-ALU-DE-09	Changes of inner construction - Inner Connection  Changes of inner construction - Closing Tape	- P	Change of inner connection Change of closing tape	e.g. change of shape/dimension e.e. change of dimension	c				- @	@•				. @•	. (	- @•	. @•		- @B	@•	@•		- @•						сопра	inal Strength (11) not for satal conents without paddle tabs.
ALCon		Changes of inner construction - Licenty tape  Changes of inner construction - Poll	. P	Change of foil type	e.g. change of dimension e.g. change of etching level e.g. change of thickness	c			- @	9	-		- 1			- 1		- 1		- B -			-				- 1			@•	
Al-Cap		PROCESS										-													-	_					
ALC:en	PAS-ALU-PRO1	Changes in process technology or manufacturing methods - Terminal Attach	- Р	Change of terminal attach process	e.g. change of stitching / welding byout	С							-			-	• @•	•	@	- в	•	• -	-		1 - 17		-			- (14) no	inal Strength (11) and Vibration not for axial components without in take
W.C	PAS-ALU-PR-02			Change of winding process	e.g. change of material disposition (order of paper foli)	с					-					-		- 1		- в -			-				-			@•	
N Com				Change of impregantion	e.g. change of bulk process into individual	с					-		-			-				- B -			1 -	- •			-				e voltage test for high voltage conents only.
		Changes in process technology or manufacturing methods - Assembly	. Р	Change of assembly process	e.g. change of bulk process into individual improgration e.g. change of sealing method e.c. change of assembly process sequence	с					• -			@	<b>9•</b> -	-	- @•	-					-				-			- R: Der	spends on process change
	PAS-ALU-PR-OS	Changes in process technology or manufacturing methods - Aging / Testing	. Р	Change of aging leating process	e.g. change of liming, voltage or temperature of process	С							-			-				- @B ·			-		- 1		-				spends on process change

Separate segretary and the seg		1			1 1									- 1															_	
Separate Methodology of the property of the pr		Changes in process technology or manufacturing methods - Trim & Form Leaded	- P	Change of trim & form process (leaded)				•		-				@• -	-			-					-		-		-			Solderability may be i
Separate supersymmetry of the property of the	PAS-ALU-PROS	Process integrity: turing within specification	. P	Variation within process specification.		c				-	-				-			-												South Admin Strain Co.
Separate Methods		PACKING / SHIPPING - NEW MATERIAL, CRITICAL DIMENSIONS													-															
March   Marc	PAS-ALU-PN-01	Packing / anglesig specification change (scoreining or construction)				В				-		-			-			-			-		-		-		-			
March   Marc	PAS-ALU-PN-02	Dry pack requirements change	I P	Change of dry pack requirements. (it: Relaxation of dry pack requirements	e.g. change in dry pack assurance (HC, MBB) (R: MSL 3 -> MSL 1	В				-		-			-			-			-						-		-	
Semigram sugar sug	PAS-ALU-PN-03	Change of carrier (trav. reel)	р р	(P): Tightening of dry pack requirements  Change of carrier	(P): MSL 1> MSL 3 e.g. change by material	В						١.			-						-		٠.				٠.		-	
Separate Methodology of the properties of the pr		PACKING / SHIPPING - VISUAL INSPECTION		*																										
Market Ma	PAS-ALU-PV-01	Change of labeling	I P	Change of labeling, also on reel.	(f) e.g. additional information (RoHS stamp) (P) e.g. change of customer specific information	В				-		-			-			-			-		-		-		-		-	
Mathematical Mathe	PAS-ALU-PV-02	Change of product marking	I P	Marking on device.	e.g. change of content of marking e.g. change of method of marking	В						-			-			-			-									
Separate segretaries and the segretaries and t			_	Channe in reckion specification which does						-	_	+									+ +					_	+ +			
Separate segretaries and the segretaries and t	PAS-ALU-PV-03	Change of packing/shipping specification	P P	not described a change of dimensions or material of the packing.	e.g. change of documentation in packing specification					-		-			-			-			-		-		-		-		-	
		LOGISTICS / CAPACITY / TESTING - EQUIPEMENT																												
	PAS-ALU-EID-01	Production from a new equipment/tool which uses a different technology or which due to its unique	РР	Change in process technique which is not already cowered above.	e. g. new equipment supplier with different process.	с													- В		_								@•	Test effort depends or assessment. Performance test acc
Part		form or function can be expected to influence the integrity of the final product																											6	process change
Part	PAS-ALU-EID-02	Production from a new equipment/tool which uses the same basic technology (replacement	. Р	PCN required for dedicated equipment for	e.g. additional equipment to increase production capacity	с												l . l	- B				١.						@•	Test effort depends or assessment.
Separate superingeness of the separa		equipment or eleanation of eleaning equipment pool)			e.g. replacement of same equipment					-		$\vdash$							_		-					_		_	-	process change.
Separate superingeness of the separa	PAS-ALU-EID-03	Change in final test equipment type that uses a different technology	РР	Change of final test equipment which use different technology.	e.g. change of tester platform	С						-			-				- @E		-								@•	Gage R&R / delta con
Separate sugaries and the superior sugaries and the superior sugaries and the sugaries and				sensitive parameters.																										
See Legislate Se				Change of manufacturing site.	e.g. movement or transfer of manufacturing site or						_	П													_				_	
See Legislate Se	PAS-ALU-PF-01	Manufacturing site transfer or movement of a part of production process to a different location site	P P	Includes transfer as well as additional site.  Note: Reorganization inside one plant/site is not affected.				•	•	•	@•	•	• •		•			•	• B	$ \cdot \cdot $	-		•		-		-	- @•	@•	
Semigranum and the semigranum an	PAS-ALU-PF-02	Elimination or addition of a manufacturing process step	. Р	Change of manufacturing process sequence.	a.n. change of order of renowness			-		- 1		-									1 -		-		-		-		@•	Characterisation depe
Semigranum and the semigranum an	PAS-ALU-PF-03	Elimination of final electrical measurement / test flow block	I P	PCN required for dedicated final test resturitors for sensitive resemblers	e.g. elemination of additional impedance control	С				-		-			-			-			-		-		-		-		@•	Characterisation dep final test flow.
8   1		LOGISTICS / CAPACITY / TESTING - Q-GATE			I						$\overline{}$					-														
8   1	PAS-ALU-QG-01	Change of fest coverage used by the supplier to ensure data sheet compliance (e.g., elimination/addition of electrical measurement/lest flow block, relaxation/enhancement of	. Р	Change of fast coverage.	e.g. change from 100% to sample inspection e.g. test flow block, reduction from three to two temperature measurements	С						-			-			-			-		-		-		-			R (electr. funct.): te R (reliability) only fo
Separate segretaries of the separate segretaries segre		monitoring procedure or sampling)			e.g. change in burn in/run in process.							ш			ш						ш		Щ				Щ			process.
Separate segretaries of the separate segretaries segre		MY																												
	PAS-NTC-AN-01				Not relevant for technical evaluation.					-		-			-			-			-		-		-		-			
Note 1	PAS-NTC-AN-02	Any change with impact on processability/manufacturability at customer, which is not covered in the matrix holive	р р	CONTRACT SPECIFIC	Technical interface means component terminals.	В				-		- 1			-			-					-				-	- @•		
The state of the		DATASHEET			1		1							_										_						
	PAS-NTC-DS-01	Change of datasheet parameters/electrical specification (min./max./typ. values) and / or ACIDC specification	P P	Change of application relevant information Not included: Editorial changes.	e.g. tighten of electrical parameter distribution	A	Risk assessment depending on change for each application.			-		-			-			-			-		-		-		-		-	
				test. New description of behavior which was not																										
1   2   2   2   2   2   2   2   2   2	PAS-NTC-DS-02	Correction of data sheet or issue of errats	1 1	specified before or which is different from Initial specification.	e.g. data sheet correction because of new information about component behavior	A				-		-			-			-			-		-		-		-		-	
1   1   2   2   2   2   2   2   2   2																														
March   Marc				Description of a new not previously covered parameter.																										
March   Marc	PAS-NTC-DS-03	Specification of additional parameters	I P	No technical change of the product. (it: no influence	e.g. adding new (tested) parameter.	A				-		-			-			-			-		-		-		-		-	
March   Marc				each application to provide evidence of additional parameter (stat. evaluation)																										
Part	DASSATT-MALO!	MATERIAL													1 1	@-	0- 0-						1		1		1 1			
March   Marc		Unange of maserial composition - Ceramic tander	P P							-	÷	H			+ -	<u>@</u> ● .	@* @*	+		<del>                                     </del>	+		Ė		Ė					Parameter analyse on
Part	PAS-NTC-MA-02	Change of material composition - Ceramic	P P	crange or ceramic composition ceramic material class will not be changed, only dopands will be changed	e.g. changes in additives amount	С		•		-		-			-	•		-	• @E	• @s -	-		-		-		-		@•	an anticipated impact performance. S = SMD device only
Part			_							-+					+ +				_		+ +				+				_	
Part	PAS-NTC-MA-03	Change of material composition - Inner Electrode	РР	material). Valid in case of multilayer structures only.	e.g. change from AgPI material to AgPI material	С	A Did consensed on confession level of	•		•		٠.	• •		-			•	- в		-								@•	
Part	PAS-NTC-MA-04	Change of material composition - Encapsulation	РР	Change of encapsulation material.	e.g. change of coating	В	Interaction with other material expected.  Consider explicity usage where NTC is					@•					@• •		- @E	@•									@•	Parameter analyse or an anticipated impact performance.
See 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.					e.g. change or address in an insussion.							Ŭ					Ŭ		_	0										performance.
State   Part	PAS-NTC-MA-05	Change of material composition - Lead material / Termination	РР	Change of lead or outer termination. Change of lead (finish) material, termination material or	e.c. change from SnPb to pure Sn	В	Risk assessment needed to evaluate compatibility of soldering process.				- @•	@•	@• -	- @•		@• -		@• 6	a• @E	- 0.0									@•	
Second												1				_		+												
See	PAS-NTC-MA-05		- P	Change to a new or additional material supplier at component manufacturer.	e.g. for 2nd source purpose	С		•		•	- •	-	• -		•			-	• B	•   •   •	-		-		-		-		@•	remains unchanged. I change of material.
Note															-								$\overline{}$						•	
State   Stat	PAS-NTC-DE-01	Changes of termination, surface finish, shape, color, appearance or dimension shucture - Lead Diameter	I P	Change of lead diameter (for soldered THT components)	e.g. change lead diameter from 0.5 to 0.4 mm	A		•		-	- @•	-	- @•	@• @•	-			-	- @E	- @• @			-		-		-		@•	
Section   Property of the pr	PAS-NTC-DE-02	Changes of termination, surface finish, shape, color, appearance or dimension structure -			e.g. change of termination layer thickness	В				-	- @•	- 1	- @•	@• -				- 6	@• @E	- @• @			-				-		@•	SMD components on
	PAS-NTC-DE-03				e.g. change from soldered connection to welded											@• -									-					
Column   C	PAS-NTC-DE-04	Lonnection										T.																		
Comparison   Com		Apparation	, P	seperate change (PAS-FLM-PV-02).							خلات	$\vdash$																		
Property of the contact of the first of aging transmission and the contact of the first of aging transmission and the first of aging tra	PAS-NTC-DE-05	Changes of inner construction - Electrode	- P	Change of electrode layer thickness or geometry. For multi-layer technology only.	e.g. change of electrode design	С		•		@•	@• -	-		@• -	-		@• @•	-		- @• @	•		-		-		-		@•	
Property of the contact of the first of aging transmission and the contact of the first of aging transmission and the first of aging tra	PAS-NTC-DE-06	Changes of inner construction - Layer Thickness	. Р	Change of ceramic layer thickness. For multi- layer technology only.	e.g. change from 1.5µm into 1.0µm	С				@•	@• -	-		@• -	-		@• @•	-		- @• @			-		-		-			
MOST			-	Change of number of ceramic or electrode					_					_			+-+-	+ + +												
MOST	Ma-NTC-DE-07	Changes of inner construction - Number of Layers	- P	layers. For multi-layer technology only. Allways in combination with PAS-NTC-DE-06.	see also layer thickness	С		•		@•	@• -	-		@• -			@• @•	-		- @• @·	•		-				-			
Companies   Comp																			1											
Companies   Comp					e.g. stamp press to isostatic press																		-							
ACC   Part   Part   Acc   Par								•							<u> </u>			-							-		-			
Companies   Comp		Changes in process technology or manufacturing methods - Dicing				С		•									+	+			-		-		-		-			
Companies   Comp	AS-NTC-PR-04				e.g. change in plating technology (final termination) e.g. change from dip in paste to plating (apply)	В		•		-	- •	•	•	- •	-	• -		•	• B		-		-		-		-		@•	
Part	AS-NTC-PR-05	Changes in process technology or manufacturing methods - Electrode apply	. Р	Change of electrode apply. For multi layer technology only.	e.g. change of inner electrode by down method.	С			- @•	-		@•			-		@• @•	@•	- @E	- @• -	-		-		-		-		@•	
Part	AS-NTC-PR-05	Changes in process technology or manufacturing methods - Assembly	. Р	Change in assembly process for leaded or	e.g. soldering method for lead attach to element or	В																								
## MOUNT (SPRYME) - STRING (SPRYME) (SP	AS-NTC-PR-07	Process integrity: tuning within specification	. P	Variation within process specification.	e.g. process control													-					-		-		-			
P   Organ de rigo de sous de partie de la principa del principa de la principa de la principa del principa de la principa del la principa del la principa de la principa del la principa de la principa de la principa de la principa de la principa del la principa del la principa del la principa del la prin		PACKING / SHIPPING - NEW MATERIAL, CRITICAL DIMENSIONS					1				$\overline{}$																			
AND TOTAL   Comput denter (be), red	NS-NTC-PN-01	Packing / shipping specification change (loosening of tolerances)	P P	Change of packing specification.		В				-	خلت												-						-	
AND TOTAL   Comput denter (be), red	NAS-NTC-PN-02	Dry pack requirements change	I P	Change of dry pack requirements. (ii): Releasion of dry pack requirements (iii): Turblering of dry pack requirements	e.g. change in dry pack assurance (HCC, MEES) (I): MSL 3 -> MSL 1 (II): MSL 1> MSL 1	В				-		-			-			-			-		-		-		-		-	
MODINE (SPITTED - VISUAL MERCENDA)    Page of Madring date of the contract of Modine (Spitted Modine) date or was   1 + 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2											_	$\vdash$																		
AND EAVE Or Design of blading I P Design of blading due to real.  By a distingt information (FIX design) By a displaced reading due to real.  So Design of product reading I P Substitute of design			РР	unange of carrier	e.g. change by geometry.	В				-	<u> </u>		1 1	-   -	لنا	-   -						-   -	<u> </u>	-   -		-   -				
AND TAVISS Company dynamics remaining     P   Meeting on decase   n / n / n / n / n / n / n / n / n / n					(But additional information (But S starm)	-				. [		Т.Т			1.1		T - T -	T . T		T - T - T -			Τ				T . I			
Longue proport berong  1 P overence process: 1 Longue of product greater and the street of the stree			1 0	Channe of labelling, also on real																										
100     100	PAS-NTC-PV-01	Change of labeling			(P) e.g. change of customer specific information e.g. change of content of marking																									
	PAS-NTC-PV-01 PAS-NTC-PV-02	Change of labeling Change of product marking	I P	Marking on device.	e.g. change of content of marking e.g. change of method of marking e.o. change of spoearance of marking	В				-		-			-			-			-		-		-		-		-	

	Change in process technique which is not	1																								Test effort depends on final risk
PAS-NTC-DQ-01 Production from a new equipment/bool which uses a different technol form or function can be expected to influence the integrity of the final production.	or entrich due to its unique od p P Obarge in process technique which is not already covered above.  Note: Changes affecting the product not covered by the table require also a PCN.	e. g. change from well to dry technology.	С			100		-				-			- @B	-				-	-		-	-   -	- 1	@ Performance test according to all
																					_	_	-		_	Test effort depends on final risk assessment. Performance test according to all
PAS-NTC-EQ-02 Production from a new equipment/loci which uses the same basic tec equipment or extension of estating equipment pool)		e.g. elimination of manual handling processes	С			100		-				-			- @B	-				-	1 - 1				1 1	<ul> <li>assessment.</li> <li>Performance test according to all process change.</li> </ul>
PAS-NTC-DQ-03 Change in final test equipment type that uses a different technology	P P Change of final feet equipment which use different technology. PCN required for dedicated equipment for sensitive parameters.	e.g. change of tester platform	С												- @B											②● Gage RSR/ delta correlation
	PCN required for dedicated equipment for sensitive parameters.	e.g. crange or sater patrons	e					-							- @6										'للت	Cage Harri deta corressor
LOGISTICS / CAPACITY / TESTING - PROCESS FLOW	Change of manufacturing site.	e.g. movement or transfer of manufacturing site or				_		т т				т т								_	_	—	_	_	=	
PAS-NTC-PF-01 Manufacturing site transfer or movement of a part of production proc	Change of manufacturing site.  Change of manufacturing site.  Includes transfer as well as additional site.  Note Recognitization inside one plantitie is	e.g. movement or transfer of manufacturing alle or process step(s) to a different location/site.	В		• • •	•	• -	•	- •	• •	•	•	•   •		• B	•	•   •			-	-		/- /	1	@•	@•
PAS-NTC-PF-02 Elimination or addition of a manufacturing process step	P Change of manufacturing process sequence	e.g. washing / cleaning process e.g. change of order of processes	с					-				-				-					- 1		- 1		- 7	Characterisation depends on important or imp
LOGISTICS / CAPACITY / TESTING - Q-GATE		•																								
PAS-NTC-OG-01 Change of test coverage used by the supplier to ensure data sheet or elimination/addition of electrical measurement/test flow block, relaxed monitoring procedure or sampling)	plance (e.g., p Change of fast coverage.	<ul> <li>e.g. change from 100% to sample inspection</li> <li>e.g. test flow block, reduction from three to two temperature measurements</li> <li>e.g. change in burn infrum in process.</li> </ul>	с																						1 1	Characterisation depends on impliest coverage.  R (electr. funct.): test coverage.
moritoring procedure or sampling)	ervarcement or	temperature measurements e.g. change in burn infrun in process.						1				1				1										test coverage.  R (electr. funct.): test coverage.  R (reliability) only for change in b process.
PTC	* * *	<u> </u>				•																				*
PAS-PTC-AN-01 Any change with impact on agreed upon technical contractual agrees	Intended to be used if no other type of changes to P P is applicable but the change affects agreed	ge Not relevant for technical evaluation.						Т.Т				Т.Т				Т.Т							_			_
PAG-PTC-494-01 Any change with impact on agreed upon lectrical contractual agrees PAG-PTC-494-02 Any change with impact on processability/manufacturability at custom for main below.  DATASPIECET	which is not covered in O							+ - 1									$\rightarrow$				$\vdash$	_	-	+		
he matrix below.		Technical interface means component terminals. See processability on board level.	В					1 - 1			-   -	1 - 1	-   -	-   -		1 - 1	-   -				لنا	لنك	ىلت	ىنىد	@•	•
PAS-PTC-DS-01 Specification profitation profitation profitation (min./max./hg	values) and / or ACIDC P Change of application relevant information Not included: Editorial changes.	e.g. Sighten of electrical parameter distribution	A Rink for e	assessment depending on change each application.																						_
specification	Not included: Editorial changes.  No included: Editorial changes.	eg symmot encara paramen una cons	n for e	such application.		_		+				+-+				+++		_		1		4	4	سه	-	
	No inclinical change of product, process or test.  New description of behavior which was not specified below or which is different from intelligent them in the specified below or which is different from intelligent products.  Please holdstack clawly, that beforeits corbain this lyes of change in the specified by the products of the																								1 1	
PAS-PTC-DS-02 Correction of data sheet or issue of errata	initial specification.  Please indicate clearly, that infoncts contain	e.g. data sheet correction because of new information about component behavior to	A			-		-				-				-	-   -				1 - 1	/   -			1 1	•
	this type of change! Assessment in application required!!																									
PAS-PTC-DS-03 Specification of additional parameters	this lyse of change!  Assessment in audication result will  Description of a new set previously covered pursuants;  In the lactification of a new set previously covered pursuants;  In the lactification change of the product.  In the lactification change of the product of the lactification contribution of audication of the lactification of the																					الكراء		الواع		
PAS-PTC-DS-03 Specification of additional parameters	P (8: no influence (P): Risk assessment depending on change such annihilation to period.	e.g. adding new (tested) parameter. for	A					-				1 -		1		-			-   -							
MATERIAL.	each appealson to provide evidence of additional parameter (whit mediation)							لب															_		بلو	
PAS-PTC-MA-01 Change of material composition - Ceramic Binder	P P Change of Binder Material to bind ceramics.		с			-		- 1				@•	- @•	@• -		-				-	- 7		-		- 17	-
PAS-PTC-MA-02 Change of material composition - Ceramic	P P Change of ceramic composition P p ceramic material class will not be changed, only depands will be changed		С												• @B	. (	gs -									Parameter analyse only recessa an anticipated impact on electrics performance.
																	>-			- L			4	النبيد		5 = SMD device only
PAS-PTC-MA-03 Change of material composition - Polymer	P P Change of polymer composition	1	C A: R	tisk assessment on application level. If		@•	@• -	@•	@• @•		- @•	-	- @•		- @B	@•		-		-			4			@•
PAS-PTC-MA-04 Change of material composition - Encapsulation	p P Change of encapsulation material.	e.g. change of coating e.g. change of additives in an insulation.	B Cons	tisk assessment on application level, if raction with other material expected, sider explicity usage where PTC is mounted on PCB.					@• -			-	- @•		- @B	@•							. 7		- 1	Parameter analyse only necessar an anticipated impact on electrics performance.
			Plant.									$\perp$										44	_		-	performance.
PAS-PTC-MA-05 Change of material composition - Lead material / Termination	P Change of lead (finish) material, termination material or attachment material.	e.g. change from SnPb to pure Sn	B comp	assessment needed to evaluate patibility of soldering process.		-		@•	@• @•		@• -	@•		- @•	@• @B	- (	@•			-	- 1		/- /	1	- 1	•
PAS-PTC-MA-05 Change of supplier of material	<ul> <li>P Change to a new or additional material supplied of component manufacturer.</li> </ul>	Ber e.g. for 2nd source purpose	с			-						-			• B								/- /		- 1	Assumption material specification remains unchanged. Otherwise s
DESIGN																										chance of material.
PAS-PTC-DE-01 Changes of termination, surface finish, shape, color, appearance or Diameter	rension structure - Lead   P   Change of lead diameter (for soldered THT components)	e.g. change lead diameter from 0.5 to 0.4 mm	A			100		@•		@• @•	@• -	-			- @B	- (	@•			-	- 1		-		- 1	@•
PAS-PTC-DE-02 Changes of termination, surface finish, shape, color, appearance or Termination Area	sension shuckare -   P Change of termination area	e.g. change of termination layer thickness e.c. change in termination dimensions	В			-		@•		@• @•		-			@• @B	- (	@•				- 1		- 7		- 7	②● SMD components only!
Damies  PMS-PTC-DE-02  Damies of territorian, surface finish, shape, color, appearance or function for the property of territorian Area.  PMS-PTC-DE-02  Charges of territorian, surface finish, shape, color, appearance or connection.	rension shucture - Internal p Change of inner connection	e.g. change of termination layer trickness e.g. change in termination dimensions e.g. change from soldered connection to welded connection	С		• •	-		@•	@• @•		@• -	@•		- @•	@• @B	- (	@•				-				- 1	@•
PAS-PTC-DE-04 Changes of termination, surface finish, shape, color, appearance or Appearance	P   Senger of an extraction of the control of the	e.g. change or adding of color on component Mainly in combination with other changes!	В					-		@• -		-				-				-			- 1		- 1	
PAS-PTC-DE-05 Changes of Inner construction - Electrode	Powers of electrode byer trickness or appropriate.	e.g. change of electrode design	с				@• @•			- @•		-	- @•	@• -		- (	e @•				- 7		-		- 7	@•
PAS-PTC-06-06 Changes of Inner construction - Layer Thickness	p   position   p   p   p   p   p   p   p   p   p	6- e.g. change from 1.5µm into 1.0µm	с				@• @•					-		@• -			Q•				-		-		- 1	
	Change of number of ceramic or electrode																									
PAS-PTC-DE-07 Changes of inner construction - Number of Layers	Change of number of centralic or electrode  P byers. For mill-layer technology only. Alless in combination with PAS-PTC-DC-96.	ays: see also layer thickness	С		• •	-	@• @•	-		- @•		-	- @•	@• -		- 6	@•				1 - 1	/   -			1 1	•
PROCESS																										
PAS-PTC-PR-01 Changes in process technology or manufacturing methods - Laminati		e.g. stamp press to isostatic press	С		•	-			@• -						- @B							4				@•
PAS-PTC-PR-02 Changes in process technology or manufacturing methods - Firing	P Change of firing / sintering profile	e.g. temperature and / or time and / or atmosphere. e.g. from tunnel to batch kiln.			• •		@• @•			- @•				@• @•						-	-		-			@•
PAS-PTC-PR-03 Changes in process technology or manufacturing methods - Dicing	_ p Change of dicing / slicing	e.g. change from cutting to sawing	С		• •					@• @•											-		-		- 7	@•
PAS-PTC-PR-04 Changes in process technology or manufacturing methods - Termina	Change for termination preparation like plate or apply of termination base layer.	e.g. change in plating technology (final termination) e.g. change from dip in paste to plating (apply)	В			100		•			•	•		- •	• B	-				-	- 1	4   -	/- /		- 1	@•
PAS-PTC-PR-05 Changes in process technology or manufacturing methods - Electron		e.g. change of inner electrode by down method.	с			@•		-	@• -			-	- @•	@• @•	- @B	- (	g• -				-				- 7	@•
PAS-PTC-PR-05 Changes in process technology or manufacturing methods - Assemb		e.g. soldering method for lead attach to element or costing / encapsulation process	В																				- 1			
PAS-PTC-PR-07 Process integrity: tuning within specification	P Variation within process specification.	costing / encapsulation process e.g. process control	С																			+-	-	-		
PACKING / SHIPPING - NEW MATERIAL, CRITICAL DIMENSION																										
PAS-PTC-FN-01 Packing / hipping specification change (loosening of tolerances)	p Change of packing specification.		В			-		- 1				-				-					تلنا	4	آلک		تلف	-
PAS-PTC-PN-02 Dry pack requirements change	Change of dry pack requirements.    P   (8): Releaston of dry pack requirements   (P): Tohlening of dry pack requirements	a.g. change in dry pack assurance (HFC, MEES) (9): MSL 3 -> MSL 1 (P): MSL 1 -> MSL 3	В			-		-				-				-				-	- /		-		- 7	-
PAS-PTC-PN-03 Change of carrier (tray, reel)	P P Change of carrier	e.g. change by material e.g. change by geometry.	В			-		-				-				-				-	- 7		-		- 17	-
PACKING / SHIPPING - VISUAL INSPECTION												<del></del>									_		Ŧ			
PAS-PTC-PV-01 Change of labeling	I P Change of labeling, also on rest.	(f) e.g. additional information (RoHS stamp) (P) e.g. change of customer specific information	В																	-		لنب	4		4	
PAS-PTC-PV-02 Change of product marking	I P Marking on dealos.	e.g. change of content of marking e.g. change of method of marking e.g. change of appearance of marking	В			100		-				-				-				-	-		-			-
PAS-PTC-PV-03 Change of packing labsping specification	P P Charge in packing specification which does not described a charge of dimensions or material of the packing.	e.g. change of documentation in packing specification														-					- 1		- 7		- 7	
LOGISTICS / CAPACITY / TESTING - EQUIPMEMENT																					_					
	Change in process technique which is not already covered above														@0											Test effort depends on final risk
PAS-PTC-EO-01 Production from a new equipment fool which uses a different technol form or function can be expected to influence the integrity of the fine	or entich due to its unique p Change in process technique which is not already covered above.  Note: Changes affecting the product not covered by the table require also a PCN.	<ul> <li>g. change from well to dry technology.</li> </ul>	С												- @B			1				النزير		التالية		<ul> <li>Every contract according to all process change.</li> </ul>
PAG-PTC-EQ-02  Production from a new equipment/tool which uses the same basic tec- equipment or edention of estating equipment pool)		e.g. elimination of manual handing processes	с												- @B											Test effort depends on final risk assessment.
equipment or extension of existing equipment pool)			,												- 668						4	النب		التبيد	اللقة	process charge.  Test effort depends on final risk assessment.  Performance test according to all process charge.
PAS-PTC-DQ-03 Change in final test equipment type that uses a different technology	P P P P P P P P P P P P P P P P P P P	e.g. change of leater platform	с												- @B											②● Gage R&R / delta correlation
	PCN required for dedicated equipment for sensitive parameters.	-g- comign or many pullfolls	_ ا												- WB									انتهم	الماك	Garage mark/ data correlation
LOGISTICS / CAPACITY / TESTING - PROCESS FLOW																										
PAS-PTC-PT-01 Manufacturing site transfer or movement of a part of production proc	Change of manufacturing also. Includes transfer as well as additional also. Note: Recognization inside one phentitle is not efficient.	e.g. movement or transfer of manufacturing site or process step(s) to a different location/site.	В		•	•	• -	•	- •	• •	• -	•	•   •		• B	•	•   •			-	- 1				@•	@•
PAS-PTC-PT-02 Elimination or addition of a manufacturing process step	P Change of manufacturing process sequence	e.g. washing / cleaning process e.g. change of order of processes	с									-				-					- 7				- 7	Characterisation depends on important on important on important in the control of the contr
LOGISTICS / CAPACITY / TESTING - Q-GATE		*																					_			
PAS-PTC-GG-01  Change of fest coverage used by the supplier to ensure data sheet or elimination/addition of electrical measurement/set flow block, relocations or surrighting.	plance (e.g., enhancement of . p Change of test coverage.	e.g. change from 100% to sample inspection e.g. test flow block, reduction from three to two temperature measurements e.g. change in burn infrum in process.	С																		7 الجهار	المراء	آليه	المالية	7 ایس	Characterisation depends on impliest coverage.  R (electr. funct.): test coverage.
ermnason sodion of electrical measurement/lest flow block, relaxed monitoring procedure or sampling)	- P danger accomage	temperature measurements																								R (electrifunct.): test coverage. R (relability) only for change in b process.
		e.g. crange in ours invas in process.																								
VDR		e.g. change in ourn invan in process.																								
VDR ANY		*				1.						T . T				T . T				Τ.			〒			_
VOR ANY PMS-VCR-MV01 Any change with Impact on agreed upon lactivical contractal agrees	to P P P washington to be used if no other type of change to be about a prediction to the change affects agreed exchange affects agreed exchange affects agreed to the change agreed to the c	gii Not relevant for technical evaluation.				-		- 1				- 1	-   -				-   -			-			-		T	
VDR ANY	to P P Internated to be used if no other type of change the P P in applicable tool the change affects agreed	*	. В			ŀ		-	 			-	 			-				-	-		-		- @•	-

Pa	5-VDR-OS-01	Change of datasheet parameters/electrical specification (min./max./lyp. values) and / or AC/DC specification	P F	Change of application relevant information Not included: Editorial changes.	e.g. Sighten of electrical parameter distribution	A	Risk assessment depending on change for each application.		-				-		-		-			-	-		-			-	-	-			-		-			
py	S-VDR-05-02	Connection of data abbest or issues of emats		No isobnical change of product, process or test.  New description of behavior which was not specified before or which is different from sittled specification.  Please indicate clearly, that infoncise contains this type of change!  Assessment in application required!	e.g. data sheet correction because of new information about component behavior	A			-		-							-						-							-	-	-	-		
D	S-VDR-OS-03	Specification of additional parameters	ı F	Disscription of a new not previously covered parameter.  On technical change of the product.  (I): no influence (F): Risk assessment depending on change for sech application to provide evidence of additional parameters (stat. evaluation)	e.g. adding new (tested) parameter.	A					-						-	-			-		-	-				-				-	-	-		
		MATERIAL  Chance of material composition - Ceramic Binder		P Change of Sinder Material to bind ceramics.					1 .		1	1 1	_			- @•	1 1	@• @					1 1		_	_	1			=	_	1	_	_		4
			P F			С			+ •		-		+		-					-	-		-	-	-	-	-	-		+	÷	-	+	_		-
Pi	S-VDR-MA-02	Change of malerial composition - Ceramic	P F	Change of ceramic composition ceramic material class (ZhC, etc.) will not be changed, only dopands will be changed	e.g. changes in additives amount	С		٠ ٠	•		-				-	- @•	-	@• @			_	@• @S	-			-	•	-		4	-	-		@•		
Pi	S-VDR-MA-03			P Change of inner electrode material. Valid in case of multilayer structures only.	e.g. change from AgPt material to AgPd material	С			•	@• @•	_	- @•	@	3•	-			-	- @•		@B		-	-			-	•		4	-	-		@•		
Pi		Change of material composition - Encapsulation		Change of encapsulation material.	e.g. change of costing e.g. change of additives in an insulation.	В	A: Plak assessment on application level, if interaction with other material expected.  Plak assessment needed to evaluate compatibility of addering process.		•	@• @•	-	@• @•	+		-		+ +	@• @	_		-	@• -	-		-   -	-		-		4	-	-		@•		
Pi	S-VOR-MA-05	Change of material composition - Lead material / Termination	P F	maserial or assistment maserial.	e.g. change from SnPb to pure Sn	В	compatibility of soldering process.		•		-	@• @•	+		@•	- @•	-		- @•	-	@B	- @•	-			-		-		4	-	-		-		
Pi		Change of supplier of material DESIGN	- F	Change to a new or additional material supplier at component manufacturer.	e.g. for 2nd source purpose	С			•	• •	-	• •	<u> </u>	•   -   -	٠		•	•		•	В	• •	•	-	-   -	-		•		L.	-	-	ا نا	@• nerre	sumption material specificatio nains unchanged. Otherwise s ange of material.	100
Pi	5-VDR-06-01	DESIGN  Changes of termination, surface finish, shape, color, appearance or dimension structure - Lead Diameter	I F	Change of lead diameter	e.g. change lead diameter from 0.8 to 0.6 mm	A					-	@• -	Τ.	- @• @•	@•		-	-		- (	@B	- @•	@•	-				- 1		7	-		- 7	@•		7
P	5-VDR-06-02	Changes of termination, surface finish, shape, color, appearance or dimension structure -	1 5	(for soldered THT components)  Change of termination area	e.c. change of termination layer thickness	В						@• -	Н	- @• @•						@• (	_		@•												ID components only!	
				P Change of inner connection	e.c. change in termination dimensions e.g. change from soldered connection to welded	С					-	@• @•	. @		@•	- @•	-	-		@• (		- @•		-			-				-	-		@•		
Pi		Connection  Changes of termination, surface finish, shape, color, appearance or dimension structure - Appearance	1 F		connection e.g. change or adding of color on component Mainty in combination with other changes!	В			-		-			- @• -	-		-	-			-			-			-	-			-	-		-		
Pi	5-VDR-06-05	Changes of inner construction - Electrode	- F	Change of electrode layer thickness or geometry.	e.g. change of electrode design	С				- @•	@•			· - @•	-		-	@• @	)• -	-	В	- •	•					•			-	-	- 1	@•		
Pi	S-VDR-DE-05	Changes of inner construction - Layer Thickness	- F	Change of ceramic layer thickness. For multi- layer technology only.	e.g. change from 1.5µm into 1.0µm	С			-	- @•	@•			· - @•	-		-	@• @	)• -	-	В		•				-	•				-	- 7	@•		
Pi	5-VDR-06-07	Changes of Inner construction - Number of Layers	. г	Change of number of ceramic or electrode layers. For multi-layer technology only. Allways in combination with PAS-VDR-DE-06.	see also layer thickness	с					@•		٠.		-			@•		-	-	- @•										-		@•		
Pi	S-VOR-DE-DB	Changes of Inner construction - Grain size	. F	Change of grain size. Grain size is a result of process and / or material change.	e. g. change of grain size.	С			-		-		١.		-						В		-				-				-	-	-	@•		
P	5-VDR-06-09	Changes of inner construction - Grain boundary size	. F		e.c. change of grain boundary size.	С							١.		-		-				В										-		- 1	@•		
		PROCESS	_	material change.																		_	$\Box$						_	_						
Pi		Changes in process technology or manufacturing methods - Lamination	. F	P Change of lamination / press technique method	e.g. stamp press or isostatic press	С					@•	- @•			-		-	@• @		- (	@B	- @•						-			-	-	- 7	@•		
P	S-VOR-PR-02	Changes in process technology or manufacturing methods - Firing			e.g. temperature and / or time and / or atmosphere. e.g. from tunnel to batch kiln.	С			-					· - @•	-		-			-	В							•			-	-		@•		
Pi	S-VDR-PR-03	Changes in process technology or manufacturing methods - Dicing	. F	Change of dicing	e.g. change from cutting to xawing	С			-	@• •	-	@• •	-		-	@• @•	-			-	В	- •	•				-	•			-	-	- 7	@•		
		Changes in process technology or manufacturing methods - Termination		Change for termination preparation like plating or apply of termination base layer.	e.g. change in plating technology (final termination) e.g. change from dip in paste to plating (apply)	В		•	-				•		•		@•				В	. •		-				•		. ,	-	-	-	@•		
_		Changes in process technology or manufacturing methods - Electrode apply	. F		e.g. change of inner electrode lay down method.	С			-	@• -	-	- @•			-				e @•		@B	- @•	-				-				-	-		@•		
		Changes in process technology or manufacturing methods - Assembly	- F	Change in assembly process for leaded or encapsulated devices.	e.g. soldering method for lead attach to element or coating / encapsulation process	В		٠	-	@• @•				- @• @•		@• -				@•		@• -			-   -	-	-	-			-	-		-		
P	S-VDR-PR-07	Process integrily: tuning within specification  PACKING / SHIPPING - NEW MATERIAL, CRITICAL DIMENSIONS	- F	P Variation within process specification.	e.g. process control	С			-		١.			-   -   -	-		-	-	-   -	-	-			-		<u> </u>	٠.	-	-   -	نلك	-		-			_
P			РЕ	P Change of packing specification.	e.g. number of pieces on reel.	В			1		Ι.	T . T .	Τ.		. [		Ι	- 1			.			- 1			Τ.			_	Τ.	Ι.				_
Pi	5-VDR-PN-02	Dry pack requirements change	1 F		e.g. change in dry pack assurance (HC, MES) (I): MSL 3 -> MSL 1 IP: MSL 1 -> MSL 3	В							١.		-		-			-	-							-			-					
Pi	S-VDR-PN-03	Change of carrier (tray, reel)	P F	p Change of carrier	e.g. change by material e.g. change by geometry.	В							Τ.		-		-														-		- 1			
		PACKING / SHIPPING - VISUAL INSPECTION									_										=															
Pi	S-VDR-PV-01	Change of labeling	I F	P Change of labeling, also on reel.	(f) e.g. additional information (RoHS stamp) (P) e.g. change of customer specific information	В			-		-		-		-		-			-	-	-	-		-   -	-	-	-			-	-	-	-		
Pi	S-VDR-PV-02	Change of product marking	1 6	P Marking on dealco.	e.g. change of content of marking e.g. change of method of marking	В		-	-		-				- ]		- T			-	-		-					-				-	- 7			
Pi	5-VDR-PV-03	Change of packing/shipping specification	P F	Change in packing specification which does not described a change of dimensions or material of the packing.	e.c. chance of appearance of markins e.g. change of documentation in packing specification								T.		-		-			-	-							-					- 1	. 7		
		LOGISTICS / CAPACITY / TESTING - EQUIPEMENT		reserved on the packing.							_										_															
Pi	5-VDR-EQ-01	Production from a new equipment/loof which uses a different technology or which due to its unique form or function can be expected to influence the integrity of the final product	P F	Change in process technique which is not already cowered above.  Note: Changes affecting the product not covered by the table require also a PCN.	e. g. change from wet to dry technology.	С				- •					•					-	В		-			@•	-	•		4		-	-	@• Peri	at effort depends on final risk sessment. Hormance test according to a scess change.	Mected
Pi	5-V0R-61Q-02	Production from a new equipment/lool which uses the same basic technology (replacement equipment or edenation of eating equipment pool)	. F	PCN required for dedicated equipment for sensitive component production.	e.g. elimination of manual handling processes	С												-		-	В		-	-		@•	-					-	-	@• Test	at effort depends on final risk sessment. Hormance last according to a	Nected
Pi	5-VDR-EQ-03	Change in final test equipment type that uses a different technology	РЕ	Change of final test equipment which use different technology. PCN required for dedicated equipment for sensitive parameters.	e.g. change of leater platform	с							1							- (	@B		-				-						-	proc	ge RSR / delta correlation	
		LOGISTICS / CAPACITY / TESTING - PROCESS FLOW		PLN required for deactable equipment for sensitive parameters.  Chance of manufacturing site.																										1			4			
P	5-VDR-PF-01	Manufacturing site transfer or movement of a part of production process to a different location/site	P F	Change of manufacturing site. Includes transfer as well as additional site. Note: Reorganization inside one plant/site is	e.g. movement or transfer of manufacturing alls or process step(s) to a different location/bile.	В					-						•				В		•	@•			-	•					@•	@•		
Pi	S-VOR-PF-02	Elimination or addition of a manufacturing process step	. F	oni affected	e.n. deal source / fah straters e.g. washing / cleaning process e.g. change of order of processes	С					-		+		-		-				-		-				-	-		+	-	-			aracterisation depends on imp stuction flow.	act of
Pi		LOGSTICS / CAPACITY / TESTING - Q-GATE  Change of leaf coverage used by the supplier to ensure data sheet compliance (e.g., elementation diction of electrical measurement leaf flow block, relaxed to virulear centered of emotiving procedure or ensurging or	. ,	P Change of last coverage.	e.g. change from 100% to sample inspection e.g. test flow block, reduction from three to two temperature resourcements e.g. change in burn in/our in process.	С							Ť.							-	-		-					-			i .			- R(	electr. funct  : test coverage. reliability) only for change in I	aum in
		monitoring procedure or sampling)	_		e.g. change in burn in/run in process.						<u> </u>																							proc	AND.	
T	sts, which should I	be considered for the appropriate process change.											I.		-		-	-		-			-	-		-	-	-				-	-	-		
T	sts, which should I	be considered for the appropriate process change after selection of condition	table.								-				-		-			-	-		-				-	-				-	-	-		Ī
9	ppliers performed	tests (mark with an 'X' for done or 'C' for generic)											Ĺ												i											_
					-																															_

-	Not required
1	Information Note required
P	PCN required

A letter or \*\* indicates that performance of that stress test should be considered for the appropriate process change.

A \*(§\* is recommended additionally by ZVEI

CONDITIONS
Termination equipment
Ceramics only



B Crystelle das (Incharges in Jampel) regards

E Capable interes only

F Capable interes only

R Resistance only

R Resistance only

R Resistance only

Willeance products only

Willeance products only

Willeance products only

For parts mended with its off op clause

For parts mended with its off op clause

Only Lace of disrep mented parts shall be exempt.