



Diodes Incorporated Discrete and Analog Semiconductors

Qualification Report – PCN-2156

**Manufacturer No.:**

PCN-2156 - Qualification of "Diodes Technology (Cheng Du) Company Limited" (CAT) as an Additional Assembly & Test Site for Discrete Products and Conversion to Copper Bond Wire on Select Discrete Products at Diodes SKE/DSH (Shanghai Kaihong Electronic Co./Diodes Inc. Shanghai) Assembly & Test Site (SAT).

Revision:

0

Date:

June 1, 2015

Qualified By:

Diodes Incorporated

Also Applicable To:

The part numbers listed in the associated PCN are Qualified by Similarity (QBS) to the devices listed in this report.

Please go to www.diodes.com for current data sheets on associated devices

Prepared By:

Diodes US Document Control

Date

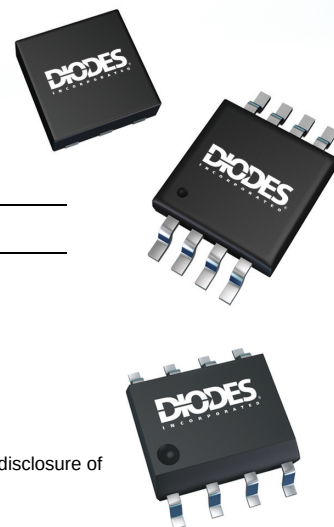
June 1, 2015

Approved By:

Diodes US QRA Department

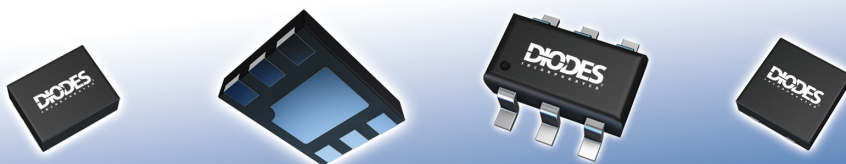
Date

June 1, 2015



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DIODES INCORPORATED 4949 Hedgcoxe Road, Suite # 200, Plano, TX 75024 USA www.diodes.com



diodes.com



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Quality and reliability data provided by Diodes Incorporated is intended to be an estimate of product performance based upon history only. It does not imply that any performance levels reflected in such data can be met if the product is operated outside the conditions expressly stated in the latest published data sheet for a device.

Existing industry standards for plastic encapsulated microcircuit qualification and reliability monitors are based upon historical data, experiments, and field experience with the use of these devices in commercial and industrial applications. The applicability of these standards in determining the suitability for use and safety performance in life support, military and aerospace applications has not been established. Due to the multiple variations in field operating conditions, a component manufacturer can only base estimates of product life on models and the results of package and die level qualification. The buyer's use of this data, and all consequences of such use, is solely the buyer's responsibility. Buyer assumes full responsibility to perform sufficient engineering and additional qualification testing in order to properly evaluate the buyer's application and determine whether a candidate device is suitable for use in that application. The information provided by Diodes Incorporated shall not be considered sufficient grounds on which to base any such determination.

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DATE: 1st June, 2015

PCN #: 2156

PCN Title: Qualification of "Diodes Technology (Cheng Du) Company Limited" (CAT) as an Additional Assembly & Test Site for Discrete Products and Conversion to Copper Bond Wire on Select Discrete Products at Diodes SKE/DSH (Shanghai Kaihong Electronic Co./Diodes Inc. Shanghai) Assembly & Test Site (SAT).

Dear Customer:

This is an announcement of change(s) to products that are currently being offered by Diodes Incorporated.

We request that you acknowledge receipt of this notification within 30 days of the date of this PCN. If you require samples for evaluation purposes, please make a request within 30 days as well. Otherwise, samples may not be built prior to this change. Please refer to the implementation date of this change as it is stated in the attached PCN form. Please contact your local Diodes sales representative to acknowledge receipt of this PCN and for any sample requests.

The changes announced in this PCN will not be implemented earlier than 90 days from the notification date stated in the attached PCN form.

Previously agreed upon customer specific change process requirements or device specific requirements will be addressed separately.

For questions or clarification regarding this PCN, please contact your local Diodes sales representative.

Sincerely,

Diodes Incorporated PCN Team

**PRODUCT CHANGE NOTICE****PCN-2156 REV 00**

Notification Date:	Implementation Date:	Product Family:	Change Type:	PCN #:
1 st June, 2015	1 st September, 2015	Discrete Semiconductors	Additional Assembly & Test Site / Bond Wire Material	2156
TITLE				
Qualification of "Diodes Technology (Cheng Du) Company Limited" (CAT) as an Additional Assembly & Test Site for Discrete parts, and Conversion to Copper Bond Wire on select Discrete products at Diodes SKE/DSH (Shanghai Kaihong Electronic Co./Diodes Inc. Shanghai) Assembly & Test Sites (SAT).				
DESCRIPTION OF CHANGE				
This PCN is being issued to notify customers that in order to assure continuity of supply, Diodes has qualified "Diodes Technology (Cheng Du) Company Limited" (CAT) located in Chengdu, China as an additional Assembly & Test Site for select Discrete parts using Copper bond wire at CAT.				
For part numbers listed in Table 2 below, Diodes has also qualified Copper bond wire at existing Diodes SKE/DSH (Shanghai Kaihong Electronic Co./Diodes Inc. Shanghai) Assembly & Test Sites (SAT).				
Full electrical characterization and high reliability testing has completed on representative part numbers built using Copper bond wire to ensure there is no change to device functionality or electrical specifications in the datasheet.				
IMPACT				
Continuity of Supply. No change in datasheet parameters and product performance.				
PRODUCTS AFFECTED				
Please see attached part lists in Table 1 and Table 2				
WEB LINKS				
Manufacturer's Notice:	http://www.diodes.com/quality/pcns			
For More Information Contact:	http://www.diodes.com/contacts			
Data Sheet:	http://www.diodes.com/products			
DISCLAIMER				
Unless a Diodes Incorporated Sales representative is contacted in writing within 30 days of the posting of this notice, all changes described in this announcement are considered approved.				

Table 1 - Affected Part List to add CAT as the additional A/T Site

D5V0L4B5SO-7	DMP2160UW-7	DMC4015SSD-13	DMN3190LDW-7	BZT52C3V3-7-F	DDZ8V2C-7
D5V0L4B5TS-7	DMN2065UW-7	DMN65D8L-7	DMN3190LDW-13	BZT52C3V6-13-F	DDZ9678-7
DRTR5V0U4TS-7	DMP32D4SW-7	DMP31D0U-7	DMG6301UDW-7	BZT52C3V6-7-F	DDZ9681-7
D5V0F4U6SO-7	DMP4025LSS-13	BSS84-13-F	DMN63D8LDW-13	BZT52C3V9-7-F	DDZ9682-7
DT1042-04SO-7	DMP2038USS-13	DMN53D0L-7	DMN53D0LDW-7	BZT52C43-7-F	DDZ9684-7
DT2042-04SO-7	DMN3025LSS-13	DMN5L06K-7	DMP2066LVT-7	BZT52C47-7-F	DDZ9685-7
DT1042-04TS-7	DMP3085LSS-13	2N7002K-13	DMP3065LVT-7	BZT52C4V3-7-F	DDZ9686-7
DT2042-04TS-7	DMN3016LSS-13	DMG301NU-7	DMP2033UVT-7	BZT52C4V7-13-F	DDZ9687-7
DT1446-04SO-7	DMP3036SSS-13	MMBF170-13-F	DMN3026LVT-7	BZT52C4V7-7-F	DDZ9689-13
DT1446-04TS-7	DMT6016LSS-13	2N7002A-13	DMG6602SVT-7	BZT52C51-7-F	DDZ9690-7
DMP2100U-7	DMP6110SSS-13	DMG301NU-13	DMG6601LVT-7	BZT52C5V1-7-F	DDZ9693-7
DMN6140L-7	DMP3050LSS-13	DMN53D0U-7	DMC2038LVT-7	BZT52C5V6-13-F	DDZ9694-7
DMN6140L-13	DMN6040SSS-13	DMN2300U-7	DMG6602SVTX-7	BZT52C5V6-7-F	DDZ9696-7
DMG2305UX-7	DMG4712SSS-13	DMN3730U-7	1N4148W-7-F	BZT52C6V2-7-F	DDZ9697-7
DMG2305UX-13	DMS3015SSS-13	DMP32D4S-13	BZT52B6V2-7-F	BZT52C6V8-7-F	DDZ9699-7
DMP3099L-7	DMC4040SSD-13	DMP32D4S-7	BZT52C10-7-F	BZT52C7V5-7-F	DDZ9700-7
DMP3099L-13	DMN6066SSD-13	BSS127S-7	BZT52C11-7-F	BZT52C8V2-13-F	DDZ9702-7
DMG3402L-7	DMN6066SSS-13	DMN3053L-7	BZT52C12-13-F	BZT52C8V2-7-F	DDZ9703-7
DMG3418L-7	DMC4050SSD-13	DMP2004K-7	BZT52C12-7-F	BZT52C9V1-7-F	DDZ9704-7
DMP3056LDM-7	ZXMN3F31DN8TA	DMN3300U-7	BZT52C13-7-F	DDZ10C-7	DDZ9705-7
DMP2130LDM-7	DMP4025LSD-13	DMN10H220L-7	BZT52C15-13-F	DDZ11C-7	DDZ9707-7
DMN2100UDM-7	DMN3018SSD-13	DMN10H220L-13	BZT52C15-7-F	DDZ12B-7	DDZ9708-7
DMN3115UDM-7	DMP3028LSD-13	DMN24H11DS-7	BZT52C16-13-F	DDZ12C-7	DDZ9709-7
DMN3051LDM-7	DMP3085LSD-13	DMN6075S-7	BZT52C16-7-F	DDZ13B-7	DDZ9711-7
DMN3033LDM-7	DMP3036SSD-13	ZXMN2F30FHTA	BZT52C18-7-F	DDZ14-7	DDZ9712-7
DMP3098LDM-7	DMC3025LSD-13	ZXMN2F34FHTA	BZT52C20-13-F	DDZ15-7	DDZ9713-7
DMP2066LDM-7	DMN6040SSD-13	ZXMP3F30FHTA	BZT52C20-7-F	DDZ16B-7	DDZ9714-7
DMG6402LDM-7	DMN6070SSD-13	ZXMN3F30FHTA	BZT52C22-7-F	DDZ17-7	DDZ9715-7
DMG6968UDM-7	DMN4026SSD-13	DMP2240UDM-7	BZT52C24-7-F	DDZ18C-7	DDZ9717-7
DMG9926UDM-7	DMC4029SSD-13	DMN5L06DMK-7	BZT52C27-7-F	DDZ21-7	DDZ9V1C-7
DMG6402LVT-7	DMC3028LSDX-13	DMN601DMK-7	BZT52C2V4-7-F	DDZ30D-7	BAV16W-7-F
DMN4060SVT-7	DMP4047SSD-13	DMN2004DMK-7	BZT52C2V7-13-F	DDZ31-7	BAV116W-7-F
DMN6040SVT-7	DMC6040SSD-13	DMP2004DMK-7	BZT52C2V7-7-F	DDZ33-7	1N4148W-13-F
DMP2035UVT-7	DMGD7N45SSD-13	DMN53D0LW-7	BZT52C30-7-F	DDZ36-7	1N4448W-7-F
DMP2305UVT-7	DMN2029USD-13	DMN3067LW-7	BZT52C33-13-F	DDZ39F-7	1N4448W-13-F
DMP3050LVT-7	DMS2085LSD-13	DMN3065LW-13	BZT52C33-7-F	DDZ43-7	BZT52C2V4-13-F
DMP3105LVT-7	DMC3016LSD-13	DMN3065LW-7	BZT52C36-7-F	DDZ5V6B-7	BZT52C51-13-F
DMP2240UW-7	DMC4047LSD-13	DMN63D8LDW-7	BZT52C39-7-F	DDZ7V5C-7	BZT52C13-13-F
DMN3150LW-7	DMC3026LSD-13	DMN5L06DWK-7	BZT52C3V0-7-F	DDZ8V2B-7	BZT52B4V7-7-F

Table 2 - Affected Part List to add CAT as the additional A/T Site and Convert to Cu wire at SAT					
D1213A-04SO-7	D1213A-02SO-7	ZXT10N50DE6TA	ZXT10P20DE6TC	ZXT13N20DE6TA	ZXT13P20DE6TA
D1213A-04TS-7	ZXT10N15DE6TA	ZXT10P12DE6TA	ZXT10P40DE6TA	ZXT13N50DE6TA	ZXT13P40DE6TA
D1213A-02SM-7	ZXT10N20DE6TA	ZXT10P20DE6TA	ZXT13N15DE6TA	ZXT13P12DE6TA	ZXTP2006E6TA

Assembly and Test Site	DIODES INC	Glass transition temperature (T _g)	110°C
DIC P/N	2N7002W-7-F	Lead material type	Cu Plated on Alloy 42
Package Type	SOT-323	Lead Material manufacturer	SLC
DIE P/N	ON14381	Lead plating/ coating	100% Matte Tin
Die line or process	MOSFET	Lead frame material type	SOT-323H
Wafer Diameter	8"	Header plating (Die land area)	Cu Plated
Wafer Fab Site(s)	HHNEC	Max junction temperature(T _j)	150°C
ID method (multiple sites)	NA	Max thermal resistance junction to case (θ _{JC})	N/A
Assembly Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Max thermal resistance junction to ambient (θ _{JA})*	625 °C/W
Test Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Front metal type (Top layer)	AlCu
Die attach Method / Material	EUTECTIC	Front metal thickness (Top layer)	4.0um
Bond wire material & dia.	Tanaka Cu 1.0mil	Back metal type (All layers)	TiAu
Bond type (at top side of the die)	Thermo sonic	Back metal thickness (all Layers)	0.1KA/5KA
Bond type (at leadframe)	Thermo sonic	Die conforming coating	Oxide
No. of bonds over active area	Gate *1 + Source *1	Die size (width x length x thickness) in mm	0.4*0.4*0.178mm
Package material type	CEL1702HF9SK	Die passivation thickness range	PE-SION 10000A
Package material manufacturer	HITACHI	No. of mask steps	7

*Show conditions (i.e. pad size, board material, copper thickness, etc.

Attachments:

- 1) Die Photo
- 2) Package outline drawing
- 3) Die cross-section drawing
- 4) Wire bond & die placement diagram
- 5) Test circuits, bias levels and conditions

Requirements:

A separate Certificate of Design, Construction and Qualification shall be submitted for each P/N and assembly location.
Document shall be signed by a responsible individual at the supplier who can verify that all of the above information is correct. Type name and sign.

Completed by		Date	Certified by	Date
Typed/Printed	Elephant Xiang	February 4, 2013	Gan Yao	February 4, 2013
Signature				
Title				

Reliability Test Summary

FACTORY:		PART NUMBER : 2N7002W-7-F	SWB1208001	CUSTOMER:		
		Package Description : SOT-323		DIODES INC.:		
LABORATORY (If Different):		PART DESCRIPTION : Qualification for HHNEC wafer: ON14381, SOT-323H Bare Cu LDF + 1.0 Cu wire + CEL1702HF9SK.				
DW-008 (AEC Q101) Test#	Test Description	Test Conditions	#Lots	#To Test	Results	REMARKS
7.3.2 (1)	PRE- AND POST- STRESS ELECTRICAL TEST (TEST)	Per Spec				
7.3.3 (2)	PRECONDITIONING (PC)	JSED22 A-113 N/A for Axial	1	308	0/308	
7.3.5.1 (3)	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	1	500	0/500	
7.3.5.2 (4)	PARAMETRIC VERIFICATION (PV)	Per Data Sheet Ta1=-55℃, Ta2=25℃, Ta3=85℃, Ta4=150℃ Characteristic BVDSS@VGS=0V, ID=10uA Characteristic IDSS@VDS=60V, VGS=0V Characteristic IGSS@VGS=±20V, VDS=0V Characteristic VGS(th)@VDS=VGS, ID=250uA Characteristic RDSON@VGS=10V, ID=0.5A	1 of 3	25	0/25	
	Lot #2	Characteristic RDSON@VGS=5.0V, ID=0.05A Characteristic IDON@VGS=10V, VDS=7.5V Characteristic yFS@VDS=10.0V,ID=0.2A	2 of 3	25	N/A	
	Lot #3		3 of 3	25	N/A	
7.3.5.3	FORWARD SURGE	MIL-750D, Method 4066	1	45	N/A	
7.3.5.4 (5)	HIGH TEMP. REVERSE BIAS (HTRB)	T=150℃ Vd=48V, PER JESD22 A-108				
	Pretest		1	77	0/77	
	@ 500 Hours	T=150℃ Vd=48V, PER JESD22 A-108	1	77	0/77	
	Final 1000 Hours	T=150℃ Vd=48V, PER JESD22 A-108	1	77	0/77	
(6)	HIGH TEMP GATE BIAS (HTGB)	T=150℃ Vg=20V, PER JESD22 A-108				
	Pretest		1	77	0/77	
	@ 500 Hours	T=150℃ Vg=20V, PER JESD22 A-108	1	77	0/77	
	Final 1000 Hours	T=150℃ Vg=20V, PER JESD22 A-108	1	77	0/77	
7.3.5.5 (7)	TEMPERATURE CYCLING (TC)	T=-65℃-150℃, PER JESD22 A-104				
	Pretest		1	77	0/77	
	@ 500 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77	
	Final 1000 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77	
7.3.5.6 (8)	AUTOCLAVE (AC)	T=121℃ 15PSIG 100%RH				
	Pretest		1	77	0/77	
	Final 96 Hours	T=121℃ 15PSIG 100%RH	1	77	0/77	
7.3.5.7 (9-1)	Highly Accelerated Stress Test(HAST)	T=130℃ RH=85% Vd=42V	1	77	0/77	The HAST test result refer to DMP2240UW-7 SWB1210022.
7.3.5.7 (9-2)	High Humidity High Temp. Reverse Bias(H ² TRB)	T=85℃ RH=85% Vd=48V				
	Pretest		1	77	0/77	
	@ 500 Hours	T=85℃ RH=85% Vd=48V	1	77	0/77	
	Final 1000 Hours	T=85℃ RH=85% Vd=48V	1	77	0/77	
7.3.5.8 (10)	INTERMITTENTOPERATING LIFE (IOL)	Vd=2V / Id=100mA; PER MIL-STD-750 METHOD 1037				2mins on/off
	Pretest		1	77	0/77	
	@ 7560 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77	
	Final 15000 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77	
(10a)	POWER AND TEMP. CYCLE (PTC)	JESD22 A-105, Per Table AEC-Q101, p11	1	77	N/A	
7.3.5.9 (11)	ESD CHARACTERIZATION (ESD)	PER AEC-Q101-001 & -002	1	60	pass	MM 50V HBM 100V
7.3.5.10 (12)	D.P.A. (DPA)	AEC Q101-004 SEC. 4	1	4	0/4	
7.3.5.11 (13)	PHYSICAL DIMENSION (PD)	PER JESD22 B-100	1	30	0/30	
7.3.5.12 (14)	TERMINAL STRENGTH (TS)	MIL-STD-750, Method 2036	1	30	N/A	
7.3.5.13 (15)	RESISTANCE TO SOLVENTS (RTS)	JESD22 B-107	1	30	N/A	
(16)	CONSTANT ACCELERATION (CA)	N/A, not hermetically sealed device.	N/A	N/A		
(17)	VIBRATION VARIABLE FREQUENCY (VVF)	N/A, not hermetically sealed device.	N/A	N/A		
(18)	MECHANICAL SHOCK (MS)	N/A, not hermetically sealed device.	N/A	N/A		
(19)	HERMETICITY (HER)	N/A, not hermetically sealed device.	N/A	N/A		
7.3.5.14 (20)	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106	1	30	0/30	260℃ @30sec
7.3.5.15 (21)	SOLDERABILITY (SD)	J-STD-002	1	10	0/10	245℃ @5sec
7.3.5.16 (22)	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 as appropriate	1	10	0/10	
7.3.5.17 (23)	WIRE BOND STRENGTH (WBS)	MIL-STD-750 METHOD 2037	1	25	0/25	
7.3.5.18 (24)	BOND SHEAR (BS)	AEC-Q101-003	1	25	0/25	
7.3.5.19 (25)	DIE SHEAR (DS)	MIL-STD-750 METHOD 2017	1	25	0/25	
(26)	UNCLAMPED INDUCTIVE SWITCHING (UIS)	N/A, not for Diode	N/A	N/A		
(27)	DIELECTRIC INTEGRITY (DI)	N/A, not for Diode	N/A	N/A		
Summary: The lot passed the precondition test and 1000hrs hi-rel tests.						
Submitted by: Jianhua Yang 12/18/12		Approved by: Adam Gu 12/18/12				

Assembly and Test Site	DIODES INC	Glass transition temperature (T_g)	110°C
DIC P/N	DMG4406LSS-13	Lead material type	SOP-8L A TYPE
Package Type	SOP-8L	Lead Material manufacturer	ASM
DIE P/N	AD0806SEAZ7-BN	Lead plating/ coating	100% Matte Tin
Die line or process	MOSFET	Lead frame material type	CDA194FH
Wafer Diameter	8"	Header plating (Die land area)	NA
Wafer Fab Site(s)	Maxchip	Max junction temperature(T_j)	150°C
ID method (multiple sites)	NA	Max thermal resistance junction to case (θ_{JC})	6.4 °C/W
Assembly Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Max thermal resistance junction to ambient (θ_{JA})*	80°C/W
Test Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Front metal type (Top layer)	AlCu
Die attach Method / Material	EPOXY / 84-1LMISR4	Front metal thickness (Top layer)	4.0um
Bond wire material & dia.	Cu 2.0 mil	Back metal type (All layers)	Ti/Ni/Ag
Bond type (at top side of the die)	Thermo sonic	Back metal thickness (all Layers)	1.3KA/4KA/15KA
Bond type (at leadframe)	Thermo sonic	Die conforming coating	Oxide
No. of bonds over active area	Gate: 1 wire; Source:12wires	Die size (width x length x thickness) in mm	1.58*0.92*0.16mm
Package material type	EME-G700	Die passivation thickness range	SiN 9000A
Package material manufacturer	SUMITOMO	No. of mask steps	6

*Show conditions (i.e. pad size, board material, copper thickness, etc.

Attachments:

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Completed by		Date	Certified by	Date
Typed/Printed	Elephant Xiang	October 20, 2012	Gan Yao	Oct 20,2012
Signature				
Title				

Reliability Test Summary

FACTORY:		PART NUMBER : DMG4406LSS-13		SWB1210007		CUSTOMER:	
		Package Description : SOP-8L		DIODES INC.:			
LABORATORY (If Different):		PART DESCRIPTION : Qualification for MAGNA wafer: AD0806SEAZ7-BN (2.0 Cu wire+ EME-G700).					
DW-008 (AEC Q101) Test#	Test Description	Test Conditions	#Lots	#To Test	Results	REMARKS	
7.3.2 (1)	PRE- AND POST- STRESS ELECTRICAL TEST (TEST)	Per Spec					
7.3.3 (2)	PRECONDITIONING (PC)	JSED22 A-113 N/A for Axial	1	308	0/308		
7.3.5.1 (3)	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	1	500	0/500		
7.3.5.2 (4)	PARAMETRIC VERIFICATION (PV)	Per Data Sheet Ta1=-55℃, Ta2=25℃, Ta3=85℃, Ta4=150℃ Characteristic BVDSS@VGS=0V, ID=250uA Characteristic IDSS@VDS=30V, VGS=0V Characteristic IGSS@VGS=±20V, VDS=0V Characteristic VGS(th)@VDS=VGS, ID=250uA Characteristic RDSON@VGS=4.5V, ID=10A Characteristic RDSON@VGS=10V, ID=12A Characteristic yFS@VDS=5V,ID=12A Characteristic VSD@VGS=0V, IS=1A	1 of 3	25	0/25		
	Lot #2		2 of 3	25	N/A		
	Lot #3		3 of 3	25	N/A		
7.3.5.3	FORWARD SURGE	MIL-750D, Method 4066	1	45	N/A		
7.3.5.4 (5)	HIGH TEMP. REVERSE BIAS (HTRB)	T=150℃ Vd=24V, PER JESD22 A-108					
	Pretest		1	77	0/77		
	@ 500 Hours	T=150℃ Vd=24V, PER JESD22 A-108	1	77	0/77		
	Final 1000 Hours	T=150℃ Vd=24V, PER JESD22 A-108	1	77	0/77		
(6)	HIGH TEMP GATE BIAS (HTGB)	T=150℃ Vg=20V, PER JESD22 A-108					
	Pretest		1	77	0/77		
	@ 500 Hours	T=150℃ Vg=20V, PER JESD22 A-108	1	77	0/77		
	Final 1000 Hours	T=150℃ Vg=20V, PER JESD22 A-108	1	77	0/77		
7.3.5.5 (7)	TEMPERATURE CYCLING (TC)	T=-65℃-150℃, PER JESD22 A-104					
	Pretest		1	77	0/77		
	@ 500 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77		
	Final 1000 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77		
7.3.5.6 (8)	AUTOCLAVE (AC)	T=121℃ 15PSIG 100%RH					
	Pretest		1	77	0/77		
	Final 96 Hours	T=121℃ 15PSIG 100%RH	1	77	0/77		
7.3.5.7 (9-1)	Highly Accelerated Stress Test(HAST)	T=130℃ RH=85% Vd=24V					
	Pretest		1	77	0/77		
	Final 96 Hours	T=130℃ RH=85% Vd=24V	1	77	0/77		
7.3.5.7 (9-2)	High Humidity High Temp. Reverse Bias(H ³ TRB)	T=85℃ RH=85% Vd=24V	1	77	N/A		
7.3.5.8 (10)	INTERMITTENTOPERATING LIFE (IOL)	Vd=5V / Id=200mA; PER MIL-STD-750 METHOD 1037				2mins on/off	
	Pretest		1	77	0/77		
	@ 7560 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77		
	Final 15000 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77		
(10a)	POWER AND TEMP. CYCLE (PTC)	JESD22 A-105, Per Table AEC-Q101, p11	1	77	N/A		
7.3.5.9 (11)	ESD CHARACTERIZATION (ESD)	PER AEC-Q101-001 & -002	1	60	pass	MM 300V HBM 700V	
7.3.5.10 (12)	D.P.A. (DPA)	AEC Q101-004 SEC. 4	1	4	0/4		
7.3.5.11 (13)	PHYSICAL DIMENSION (PD)	PER JESD22 B-100	1	30	0/30		
7.3.5.12 (14)	TERMINAL STRENGTH (TS)	MIL-STD-750, Method 2036	1	30	N/A		
7.3.5.13 (15)	RESISTANCE TO SOLVENTS (RTS)	JESD22 B-107	1	30	N/A		
(16)	CONSTANT ACCELERATION (CA)	N/A, not hermetically sealed device.	N/A	N/A			
(17)	VIBRATION VARIABLE FREQUENCY (VVF)	N/A, not hermetically sealed device.	N/A	N/A			
(18)	MECHANICAL SHOCK (MS)	N/A, not hermetically sealed device.	N/A	N/A			
(19)	HERMETICITY (HER)	N/A, not hermetically sealed device.	N/A	N/A			
7.3.5.14 (20)	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106	1	30	0/30	260℃ @30sec	
7.3.5.15 (21)	SOLDERABILITY (SD)	J-STD-002	1	10	0/10	245℃ @5sec	
7.3.5.16 (22)	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 as appropriate	1	10	0/10		
7.3.5.17 (23)	WIRE BOND STRENGTH (WBS)	MIL-STD-750 METHOD 2037	1	25	0/25		
7.3.5.18 (24)	BOND SHEAR (BS)	AEC-Q101-003	1	25	0/25		
7.3.5.19 (25)	DIE SHEAR (DS)	MIL-STD-750 METHOD 2017	1	25	0/25		
(26)	UNCLAMPED INDUCTIVE SWITCHING (UIS)	N/A, not for Diode	N/A	N/A			
(27)	DIELECTRIC INTEGRITY (DI)	N/A, not for Diode	N/A	N/A			
Summary: The lot passed the precondition test and 1000hrs hi-rel tests.							
Submitted by: Jianhua Yang 2/7/13		Approved by: Adam Gu 2/7/13					

Assembly and Test Site	DIODES INC	Glass transition temperature (T _g)	130°C
DIC P/N	DMG4413LSS-13	Lead material type	CDA194FH
Package Type	SOP-8L	Lead Material manufacturer	ASM
DIE P/N	ON14144 (first)/ON14141	Lead plating/ coating	Ag
Die line or process	MOSFET	Lead frame material type	SOP-8L A TYPE
Wafer Diameter	8"	Header plating (Die land area)	Silver Spot Plate
Wafer Fab Site(s)	HHNEC	Max junction temperature(T _j)	150°C
ID method (multiple sites)	NA	Max thermal resistance junction to case (θ _{JC})	2.5°C/W
Assembly Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Max thermal resistance junction to ambient (θ _{JA})*	56°C/W
Test Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Front metal type (Top layer)	AlCu
Die attach Method / Material	EPOXY 84-1LMISR4	Front metal thickness (Top layer)	4.0um
Bond wire material & dia.	Cu 2.0 mil	Back metal type (All layers)	TiNiAg
Bond type (at top side of the die)	Thermo sonic	Back metal thickness (all Layers)	1KA/2KA/10KA
Bond type (at leadframe)	Thermo sonic	Die conforming coating	Oxide
No. of bonds over active area	Gate: 1 wire; Source:15 wires	Die size (width x length x thickness) in mm	3.5*2.06*0.18
Package material type	EME-G700	Die passivation thickness range	SION 10KA
Package material manufacturer	SUMITOMO	No. of mask steps	6

*Show conditions (i.e. pad size, board material, copper thickness, etc.

Attachments:

- 1) Die Photo
- 2) Package outline drawing
- 3) Die cross-section drawing
- 4) Wire bond & die placement diagram
- 5) Test circuits, bias levels and conditions

Requirements:

A separate Certificate of Design, Construction and Qualification shall be submitted for each P/N and assembly location.
Document shall be signed by a responsible individual at the supplier who can verify that all of the above information is correct. Type name and sign.

Completed by		Date	Certified by	Date
Typed/Printed	Elephant Xiang	October 20, 2012	Gan Yao	Oct 20,2012
Signature				
Title				

Reliability Test Summary

FACTORY:		PART NUMBER : DMG4413LSS-13 SWR1207012		CUSTOMER:		
		Package Description : SOP-8L		DIODES INC.:		
LABORATORY (If Different):		PART DESCRIPTION : Qualification for HHNEC wafer: ON14141(2.0 Cu wire+ EME-G700).				
DW-008 (AEC Q101) Test#	Test Description	Test Conditions	#Lots	#To Test	Results	REMARKS
7.3.2 (1)	PRE- AND POST- STRESS ELECTRICAL TEST (TEST)	Per Spec				
7.3.3 (2)	PRECONDITIONING (PC)	JSED22 A-113 N/A for Axial	1	308	0/308	
7.3.5.1 (3)	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	1	500	0/500	
7.3.5.2 (4)	PARAMETRIC VERIFICATION (PV)	Per Data Sheet Ta1=-55℃, Ta2=25℃, Ta3=85℃, Ta4=150℃ Characteristic BVDSS@ID=-250uA Characteristic IDSS@VDS=-30V Characteristic IGSS@VGS=+/-20V Characteristic VGS@ID=-250uA Characteristic Rdon@ Vgs=-10V,ID=-13A Characteristic Rdon@ Vgs=-4.5V,ID=-10A Characteristic Gfs @ Vds=-15V,ID=-13A Characteristic VSD @ IS=-2.7A	1 of 3	25	0/25	
	Lot #2		2 of 3	25	N/A	
	Lot #3		3 of 3	25	N/A	
7.3.5.3	FORWARD SURGE	MIL-750D, Method 4066	1	45	N/A	
7.3.5.4 (5)	HIGH TEMP. REVERSE BIAS (HTRB)	T=150℃ Vd=24V, PER JESD22 A-108				
	Pretest		1	77	0/77	
	@ 500 Hours	T=150℃ Vd=24V, PER JESD22 A-108	1	77	0/77	
	Final 1000 Hours	T=150℃ Vd=24V, PER JESD22 A-108	1	77	0/77	
(6)	HIGH TEMP GATE BIAS (HTGB)	T=150℃ Vg=20V, PER JESD22 A-108				
	Pretest		1	77	0/77	
	@ 500 Hours	T=150℃ Vg=20V, PER JESD22 A-108	1	77	0/77	
	Final 1000 Hours	T=150℃ Vg=20V, PER JESD22 A-108	1	77	0/77	
7.3.5.5 (7)	TEMPERATURE CYCLING (TC)	T=-65℃-150℃, PER JESD22 A-104				
	Pretest		1	77	0/77	
	@ 500 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77	
	Final 1000 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77	
7.3.5.6 (8)	AUTOCLAVE (AC)	T=121℃ 15PSIG 100%RH				
	Pretest		1	77	0/77	
	Final 96 Hours	T=121℃ 15PSIG 100%RH	1	77	0/77	
7.3.5.7 (9-1)	Highly Accelerated Stress Test(HAST)	T=130℃ RH=85% Vd=24V				
	Pretest		1	77	0/77	
	Final 96 Hours	T=121℃ 15PSIG 100%RH	1	77	0/77	
7.3.5.7 (9-2)	High Humidity High Temp. Reverse Bias(H ³ TRB)	T=85℃ RH=85% Vd=24V	1	77	N/A	
7.3.5.8 (10)	INTERMITTENTOPERATING LIFE (IOL)	Vd=5V / Id=250mA; PER MIL-STD-750 METHOD 1037				2mins on/off
	Pretest		1	77	0/77	
	@ 7560 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77	
	Final 15000 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77	
(10a)	POWER AND TEMP. CYCLE (PTC)	JESD22 A-105, Per Table AEC-Q101, p11	1	77	N/A	
7.3.5.9 (11)	ESD CHARACTERIZATION (ESD)	PER AEC-Q101-001 & -002	1	60	pass	MM 400V HBM 1.5KV
7.3.5.10 (12)	D.P.A. (DPA)	AEC Q101-004 SEC. 4	1	4	0/4	
7.3.5.11 (13)	PHYSICAL DIMENSION (PD)	PER JESD22 B-100	1	30	0/30	
7.3.5.12 (14)	TERMINAL STRENGTH (TS)	MIL-STD-750, Method 2036	1	30	N/A	
7.3.5.13 (15)	RESISTANCE TO SOLVENTS (RTS)	JESD22 B-107	1	30	N/A	
(16)	CONSTANT ACCELERATION (CA)	N/A, not hermetically sealed device.	N/A	N/A		
(17)	VIBRATION VARIABLE FREQUENCY (VVF)	N/A, not hermetically sealed device.	N/A	N/A		
(18)	MECHANICAL SHOCK (MS)	N/A, not hermetically sealed device.	N/A	N/A		
(19)	HERMETICITY (HER)	N/A, not hermetically sealed device.	N/A	N/A		
7.3.5.14 (20)	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106	1	30	0/30	260℃ @30sec
7.3.5.15 (21)	SOLDERABILITY (SD)	J-STD-002	1	10	0/10	245℃ @5sec
7.3.5.16 (22)	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 as appropriate	1	10	0/10	
7.3.5.17 (23)	WIRE BOND STRENGTH (WBS)	MIL-STD-750 METHOD 2037	1	25	0/25	
7.3.5.18 (24)	BOND SHEAR (BS)	AEC-Q101-003	1	25	0/25	
7.3.5.19 (25)	DIE SHEAR (DS)	MIL-STD-750 METHOD 2017	1	25	0/25	
(26)	UNCLAMPED INDUCTIVE SWITCHING (UIS)	N/A, not for Diode	N/A	N/A		
(27)	DIELECTRIC INTEGRITY (DI)	N/A, not for Diode	N/A	N/A		
Summary: The lot passed the precondition test and 1000hrs hi-rel tests.						
Submitted by: Jianhua Yang 10/7/12			Approved by: Adam Gu 10/7/12			

Assembly and Test Site	DIODES INC	Glass transition temperature (T _g)	130°C
DIC P/N	DMMT5551S-7-F	Lead material type	EFTEC-64T
Package Type	SOT-26	Lead Material manufacturer	PBE / ASM
DIE P/N	C5983D23H	Lead plating/ coating	Pb free
Die line or process	Transistor	Lead frame material type	SOT-26E
Wafer Diameter	5 inch	Header plating (Die land area)	Silver Spot Plate
Wafer Fab Site(s)	Phenitac	Max junction temperature(T _j)	150°C
ID method (multiple sites)	N/A	Max thermal resistance junction to case (θ _{JC})	N/A
Assembly Locations(s)	Shanghai Kaihong Electronic Co., Ltd. No.999 Chenchun Road, Xinqiao Town, Songjiang, Shanghai, P.R. China 201612 DIODES INC. IN SHANGHAI, Plant1, NO.111-10 Songjiang Export Processing Zone, Shanghai, P.R.China 201600	Max thermal resistance junction to ambient (θ _{JA})*	N/A
Test Locations(s)	DIODES INC. IN SHANGHAI, Plant1, NO.111-10 Songjiang Export Processing Zone, Shanghai, P.R.China 201600	Front metal type (Top layer)	Al-Si
Die attach Method / Material	EPOXY	Front metal thickness (Top layer)	2.7um
Bond wire material & dia.	Copper Wire, 1.0mil	Back metal type (All layers)	Au+As-Au
Bond type (at top side of the die)	Thermo sonic	Back metal thickness (all Layers)	0.9um
Bond type (at leadframe)	Thermo sonic	Die conforming coating	NA
No. of bonds over active area	4	Die size (width x length x thickness) in mm	0.44*0.44*0.23
Package material type	CEL-1702HF9SK	Die passivation thickness range	9000A SiN
Package material manufacturer	HITACHI	No. of mask steps	N/A

*Show conditions (i.e. pad size, board material, copper thickness, etc.

Attachments:

- 1) Die Photo
- 2) Package outline drawing
- 3) Die cross-section drawing
- 4) Wire bond & die placement diagram
- 5) Test circuits, bias levels and conditions

Requirements:

A separate Certificate of Design, Construction and Qualification shall be submitted for each P/N and assembly location. Document shall be signed by a responsible individual at the supplier who can verify that all of the above information is correct. Type name and sign.

Completed by		Date	Certified by	Date
Typed/Printed	Yoyo Tan	November 15, 2012	Bill Tian	November 15, 2012



SHANGHAI KAIHONG ELECTRONIC CO.,LTD

Hi-Reliability Test Summary Report

FACTORY:		PART NUMBER: DMMT5551S-7-F SWR1112023		CUSTOMER:		
		Package: SOT26		DIODES INC.:		
LABORATORY (If Different):		PART DESCRIPTION: Phenitec wafer:C5983S 1GCV-6911,1.0 mil Copper wire+CEL-1702HF9 SKF				
DW-008 (AEC Q101) Test#	Test Description	Test Conditions	#Lots	#To Test	Results	REMARKS
7.3.2 (1)	PRE- AND POST- STRESS ELECTRICAL TEST (TEST)	Per Spec				
7.3.3 (2)	PRECONDITIONING (PC)	JSED22 A-113 N/A for Axial	1	308	0/308	
7.3.5.1 (3)	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	1	600	0/600	
7.3.5.2 (4)	PARAMETRIC VERIFICATION (PV)	Per Data Sheet Ta1=25C, Ta2=85C, Ta3=125, Ta4=150 BVCEO@IC= 10.0mA ICBO @VCB= 64V HFE@VCE= 5V,IC= 1A VCESAT@IC= 1A,IB= 100mA	N/A	N/A		
	Lot #2		N/A	N/A		
	Lot #3		N/A	N/A		
7.3.5.3	FORWARD SURGE	MIL-750D, Method 4066	N/A	N/A		
7.3.5.4 (5)	HIGH TEMP. REVERSE BIAS (HTRB)	T=150°C Vc=144V, PER JESD22 A-108	1	77		
	Pretest		1	77	0/77	
	@ 500 Hours	T=150°C Vc=144V, PER JESD22 A-108	1	77	0/77	
	Final 1000 Hours	T=150°C Vc=144V, PER JESD22 A-108	1	77	0/77	
7.3.5.4(6)	HIGH TEMP. Storage Life (HTS)	T=150°C , PER JESD22 A-103	1	45		
	Pretest		1	45	0/45	
	@ 500 Hours	T=150°C , PER JESD22 A-103	1	45	0/45	
	Final 1000 Hours	T=150°C , PER JESD22 A-103	1	45	0/45	
(6)	HIGH TEMP GATE BIAS (HTGB)	N/A for Diode	N/A	N/A		
7.3.5.5 (7)	TEMPERATURE CYCLING (TC)	T=-55°C-150°C, PER JESD22 A-104	1	77		
	Pretest		1	77	0/77	
	@ 500 Cycles	T=-55°C-150°C, PER JESD22 A-104	1	77	0/77	
	Final 1000 Cycles	T=-55°C-150°C, PER JESD22 A-104	1	77	0/77	
7.3.5.6 (8)	AUTOCLAVE (AC)	T=121°C 15PSIG 100%RH	1	77	0/77	96hrs
7.3.5.7 (9)	H ³ TRB	T=85°C RH=85% Vc=64V	N/A	N/A		
	Pretest		N/A	N/A		
	@ 500 Hours	T=85°C RH=85% Vc=64V	N/A	N/A		
	Final 1000 Hours	T=85°C RH=85% Vc=64V	N/A	N/A		
7.3.5.7 (9a)	Highly Accelerated Stress Test(HAST)	T=130°C RH=85% Vc=42V,PER JESD22 A-110	1	77		
	Pretest		1	77	0/77	
	After 96hrs	T=130°C RH=85% Vc=42V	1	77	0/77	
7.3.5.8 (10)	INTERMITTENT OPERATING LIFE (IOL)	Vc=30V Ic=10mA, PER MIL-STD-750 METHOD 1037	1	77		15000cycles@2mins on/off
	Pretest	MIL-STD-750 METHOD 1037	1	77	0/77	
	Midpoint 7560cycles	MIL-STD-750 METHOD 1037	1	77	0/77	
	After 15000cycles	MIL-STD-750 METHOD 1037	1	77	0/77	
(10a)	POWER AND TEMP. CYCLE (PTC)	JESD22 A-105, Per Table AEC-Q101, p11	N/A	N/A		
(Optional)	Pretest	JESD22 A-105, Per Table AEC-Q101, p11	N/A	N/A		
	Midpoint	JESD22 A-105, Per Table AEC-Q101, p11	N/A	N/A		
	After	JESD22 A-105, Per Table AEC-Q101, p11	N/A	N/A		
7.3.5.9 (11)	ESD CHARACTERIZATION (ESD)	PER AEC-Q101-001 & -002	N/A	N/A		MM 400V HBM 8KV
7.3.5.10 (12)	D.P.A. (DPA)	AEC Q101-004 SEC. 4	N/A	N/A		
7.3.5.11 (13)	PHYSICAL DIMENSION (PD)	PER JESD22 B-100	1	30	0/30	
7.3.5.12 (14)	TERMINAL STRENGTH (TS)	MIL-STD-750, Method 2036	N/A	N/A		
7.3.5.13 (15)	RESISTANCE TO SOLVENTS (RTS)	JESD22 B-107	N/A	N/A		
(16)	CONSTANT ACCELERATION (CA)	N/A, not hermetically sealed device.	N/A	N/A		
(17)	VIBRATION VARIABLE FREQUENCY (VVF)	N/A, not hermetically sealed device.	N/A	N/A		
(18)	MECHANICAL SHOCK (MS)	N/A, not hermetically sealed device.	N/A	N/A		
(19)	HERMETICITY (HER)	N/A, not hermetically sealed device.	N/A	N/A		
7.3.5.14 (20)	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106	1	45	0/45	260°C@10sec
7.3.5.15 (21)	SOLDERABILITY (SD)	J-STD-002	N/A	N/A		245°C@5sec
7.3.5.16 (22)	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 as appropriate	N/A	N/A		
7.3.5.17 (23)	WIRE BOND STRENGTH (WBS)	MIL-STD-750 METHOD 2037	1	25	0/25	
7.3.5.18 (24)	BOND SHEAR (BS)	AEC-Q101-003	1	25	0/25	
7.3.5.19 (25)	DIE SHEAR (DS)	MIL-STD-750 METHOD 2017	1	25	0/25	
(26)	UNCLAMPED INDUCTIVE SWITCHING (UIS)	N/A, not for Diode	N/A	N/A		
(27)	DIELECTRIC INTEGRITY (DI)	N/A, not for Diode	N/A	N/A		
Summary:		This lot passed 1000hrs hi-rel test.				
Submitted by: Sean Huang 04/03/12		Approved by: Adam Gu 04/03/12				

Assembly and Test Site	DIODES INC	Glass transition temperature (T_g)	110°C
DIC P/N	DMN66D0LDW-7	Lead material type	SOT-363 E TYPE 18ROW
Package Type	SOT-363	Lead Material manufacturer	ASM
DIE P/N	ON14201	Lead plating/ coating	100% Matte Tin
Die line or process	MOSFET	Lead frame material type	Alloy 42
Wafer Diameter	8"	Header plating (Die land area)	Ag
Wafer Fab Site(s)	HHNEC	Max junction temperature(T_j)	150°C
ID method (multiple sites)	NA	Max thermal resistance junction to case (θ_{JC})	N/A
Assembly Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Max thermal resistance junction to ambient (θ_{JA})*	500 °C/W
Test Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Front metal type (Top layer)	AlCu
Die attach Method / Material	EUTECTIC	Front metal thickness (Top layer)	4.0um
Bond wire material & dia.	Cu 0.8mil	Back metal type (All layers)	TiAu
Bond type (at top side of the die)	Thermo sonic	Back metal thickness (all Layers)	0.1KA/5KA
Bond type (at leadframe)	Thermo sonic	Die conforming coating	Oxide
No. of bonds over active area	2D4W	Die size (width x length x thickness) in mm	400*400*178um
Package material type	CEL-1702HF9SK	Die passivation thickness range	PE-SION 10000A
Package material manufacturer	HITACHI	No. of mask steps	7

*Show conditions (i.e. pad size, board material, copper thickness, etc.

Attachments:

- 1) Die Photo
- 2) Package outline drawing
- 3) Die cross-section drawing
- 4) Wire bond & die placement diagram
- 5) Test circuits, bias levels and conditions

Requirements:

A separate Certificate of Design, Construction and Qualification shall be submitted for each P/N and assembly location.
Document shall be signed by a responsible individual at the supplier who can verify that all of the above information is correct. Type name and sign.

Completed by		Date	Certified by	Date
Typed/Printed	Elephant Xiang	August 3, 2012	Gan Yao	Aug 3,2012
Signature				
Title				



SHANGHAI KAIHONG ELECTRONIC CO.,LTD

Reliability Test Summary

FACTORY:		PART NUMBER : DMN66D0LDW-7		SWB1210019 & SWB1308002		CUSTOMER:	
		Package Description : SOT-363		DIODES INC.:			
LABORATORY (If Different):		PART DESCRIPTION : Qualification for HHNEC wafer: ON14201, 0.8 Cu wire + CEL-1702HF9 SK.					
DW-008 (AEC Q101) Test#	Test Description	Test Conditions	#Lots	#To Test	Results	REMARKS	
7.3.2 (1)	PRE- AND POST- STRESS ELECTRICAL TEST (TEST)	Per Spec					
7.3.3 (2)	PRECONDITIONING (PC)	JSED22 A-113 N/A for Axial	1	385	0/385		
7.3.5.1 (3)	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	1	500	0/500		
7.3.5.2 (4)	PARAMETRIC VERIFICATION (PV)	Per Data Sheet Ta1=-55℃, Ta2=25℃, Ta3=85℃, Ta4=150℃ Characteristic BVDSS@VGS=0V, ID=10uA Characteristic IDSS@VDS=60V, VGS=0V Characteristic IGSS@VGS=±20V, VDS=0V Characteristic VGS(th)@VDS=VGS, ID=250uA Characteristic RDS(on)VGS=10V, ID=0.115A Characteristic RDS(on)VGS=5.0V, ID=0.115A Characteristic VSD@VGS=0V, IS=0.115A Characteristic yFS@VDS=10.0V,ID=0.115A	1 of 3	25	0/25		
	Lot #2		2 of 3	25	N/A		
	Lot #3		3 of 3	25	N/A		
7.3.5.3	FORWARD SURGE	MIL-750D, Method 4066	1	45	N/A		
7.3.5.4 (5)	HIGH TEMP. REVERSE BIAS (HTRB)	T=150℃ Vd=48V, PER JESD22 A-108					
	Pretest		1	77	0/77		
	@ 500 Hours	T=150℃ Vd=48V, PER JESD22 A-108	1	77	0/77		
	Final 1000 Hours	T=150℃ Vd=48V, PER JESD22 A-108	1	77	0/77		
(6)	HIGH TEMP GATE BIAS (HTGB)	T=150℃ Vg=20V, PER JESD22 A-108					
	Pretest		1	77	0/77		
	@ 500 Hours	T=150℃ Vg=20V, PER JESD22 A-108	1	77	0/77		
	Final 1000 Hours	T=150℃ Vg=20V, PER JESD22 A-108	1	77	0/77		
7.3.5.5 (7)	TEMPERATURE CYCLING (TC)	T=-65℃-150℃, PER JESD22 A-104					
	Pretest		1	77	0/77		
	@ 500 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77		
	Final 1000 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77		
7.3.5.6 (8)	AUTOCLAVE (AC)	T=121℃ 15PSIG 100%RH					
	Pretest		1	77	0/77		
	Final 96 Hours	T=121℃ 15PSIG 100%RH	1	77	0/77		
7.3.5.7 (9-1)	Highly Accelerated Stress Test(HAST)	T=130℃ RH=85% Vd=42V					
	Pretest		1	77	0/77		
	Final 96 Hours	T=130℃ RH=85% Vd=42V	1	77	0/77		
7.3.5.7 (9-2)	High Humidity High Temp. Reverse Bias(H ³ TRB)	T=85℃ RH=85% Vd=48V					
	Pretest		1	77	0/77		
	@ 500 Hours	T=85℃ RH=85% Vd=48V	1	77	0/77		
	Final 1000 Hours	T=85℃ RH=85% Vd=48V	1	77	0/77		
7.3.5.8 (10)	INTERMITTENTOPERATING LIFE (IOL)	Vd=1.5V / Id=83mA; PER MIL-STD-750 METHOD 1037				2mins on/off	
	Pretest		1	77	0/77		
	@ 7560 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77		
	Final 15000 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77		
(10a)	POWER AND TEMP. CYCLE (PTC)	JESD22 A-105, Per Table AEC-Q101, p11	1	77	N/A		
7.3.5.9 (11)	ESD CHARACTERIZATION (ESD)	PER AEC-Q101-001 & -002	1	60	pass	MM 150V HBM 2KV	
7.3.5.10 (12)	D.P.A. (DPA)	AEC Q101-004 SEC. 4	1	4	0/4		
7.3.5.11 (13)	PHYSICAL DIMENSION (PD)	PER JESD22 B-100	1	30	0/30		
7.3.5.12 (14)	TERMINAL STRENGTH (TS)	MIL-STD-750, Method 2036	1	30	N/A		
7.3.5.13 (15)	RESISTANCE TO SOLVENTS (RTS)	JESD22 B-107	1	30	N/A		
(16)	CONSTANT ACCELERATION (CA)	N/A, not hermetically sealed device.	N/A	N/A			
(17)	VIBRATION VARIABLE FREQUENCY (VVF)	N/A, not hermetically sealed device.	N/A	N/A			
(18)	MECHANICAL SHOCK (MS)	N/A, not hermetically sealed device.	N/A	N/A			
(19)	HERMETICITY (HER)	N/A, not hermetically sealed device.	N/A	N/A			
7.3.5.14 (20)	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106	1	30	0/30	260℃ @30sec	
7.3.5.15 (21)	SOLDERABILITY (SD)	J-STD-002	1	10	0/10	245℃ @5sec	
7.3.5.16 (22)	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 as appropriate	1	10	0/10		
7.3.5.17 (23)	WIRE BOND STRENGTH (WBS)	MIL-STD-750 METHOD 2037	1	25	0/25		
7.3.5.18 (24)	BOND SHEAR (BS)	AEC-Q101-003	1	25	0/25		
7.3.5.19 (25)	DIE SHEAR (DS)	MIL-STD-750 METHOD 2017	1	25	0/25		
(26)	UNCLAMPED INDUCTIVE SWITCHING (UIS)	N/A, not for Diode	N/A	N/A			
(27)	DIELECTRIC INTEGRITY (DI)	N/A, not for Diode	N/A	N/A			
Summary: The lot passed the precondition test and 1000hrs hi-rel tests.							
Submitted by: Jianhua Yang 9/10/13				Approved by: Adam Gu 9/10/13			

Assembly and Test Site	DIODES INC	Glass transition temperature (T _g)	130°C
DIC P/N	DMN3030LSS-13	Lead material type	CDA194FH
Package Type	SOP-8L	Lead Material manufacturer	ASM
DIE P/N	ON14344	Lead plating/ coating	Ag
Die line or process	MOSFET	Lead frame material type	SOP-8L A TYPE
Wafer Diameter	8"	Header plating (Die land area)	Silver Spot Plate
Wafer Fab Site(s)	HHNEC	Max junction temperature(T _j)	150°C
ID method (multiple sites)	NA	Max thermal resistance junction to case (θ _{JC})	NA
Assembly Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Max thermal resistance junction to ambient (θ _{JA})*	50 °C/W
Test Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Front metal type (Top layer)	AlCu
Die attach Method / Material	EPOXY 84-1LMISR4	Front metal thickness (Top layer)	4.0um
Bond wire material & dia.	Cu 2.0 mil	Back metal type (All layers)	TiNiAg
Bond type (at top side of the die)	Thermo sonic	Back metal thickness (all Layers)	1KA/2KA/10KA
Bond type (at leadframe)	Thermo sonic	Die conforming coating	Oxide
No. of bonds over active area	Gate: 1 wire; Source:8 wires	Die size (width x length x thickness) in mm	1.46*0.86*0.18
Package material type	EME-G700	Die passivation thickness range	SION 10KA
Package material manufacturer	SUMITOMO	No. of mask steps	6

*Show conditions (i.e. pad size, board material, copper thickness, etc.

Attachments:

- 1) Die Photo
- 2) Package outline drawing
- 3) Die cross-section drawing
- 4) Wire bond & die placement diagram
- 5) Test circuits, bias levels and conditions

Requirements:

A separate Certificate of Design, Construction and Qualification shall be submitted for each P/N and assembly location.
Document shall be signed by a responsible individual at the supplier who can verify that all of the above information is correct. Type name and sign.

Completed by		Date	Certified by	Date
Typed/Printed	Elephant Xiang	October 20, 2012	Gan Yao	Oct 20,2012
Signature				
Title				

Reliability Test Summary

FACTORY:		PART NUMBER : DMN3030LSS-13 SWR1206002		CUSTOMER:		
		Package Description : SOP-8L		DIODES INC.:		
LABORATORY (If Different):		PART DESCRIPTION : Qualification for HHNEC wafer: ON14344(2.0 Cu wire+ EME-G700).				
DW-008 (AEC Q101) Test#	Test Description	Test Conditions	#Lots	#To Test	Results	REMARKS
7.3.2 (1)	PRE- AND POST- STRESS ELECTRICAL TEST (TEST)	Per Spec				
7.3.3 (2)	PRECONDITIONING (PC)	JSED22 A-113 N/A for Axial	1	308	0/308	
7.3.5.1 (3)	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	1	500	0/500	
7.3.5.2 (4)	PARAMETRIC VERIFICATION (PV)	Per Data Sheet Ta1=-55℃, Ta2=25℃, Ta3=85℃, Ta4=150℃ Characteristic BVDSS@ID=250uA Characteristic IDSS@VDS=30V Characteristic IGSS@VGS=+/-20V Characteristic IGSS@VGS=+/-25V Characteristic VGS@ID=250uA Characteristic Rdon@ Vgs=10V,ID=9A Characteristic Rdon@ Vgs=4.5V,ID=7A Characteristic Gfs @ Vds=10V,ID=9A Characteristic VSD @ IS=2.1A	1 of 3	25	0/25	
	Lot #2		2 of 3	25	N/A	
	Lot #3		3 of 3	25	N/A	
7.3.5.3	FORWARD SURGE	MIL-750D, Method 4066	1	45	N/A	
7.3.5.4 (5)	HIGH TEMP. REVERSE BIAS (HTRB)	T=150℃ Vd=24V, PER JESD22 A-108				
	Pretest		1	77	0/77	
	@ 500 Hours	T=150℃ Vd=24V, PER JESD22 A-108	1	77	0/77	
	Final 1000 Hours	T=150℃ Vd=24V, PER JESD22 A-108	1	77	0/77	
(6)	HIGH TEMP GATE BIAS (HTGB)	T=150℃ Vg=25V, PER JESD22 A-108				
	Pretest		1	77	0/77	
	@ 500 Hours	T=150℃ Vg=25V, PER JESD22 A-108	1	77	0/77	
	Final 1000 Hours	T=150℃ Vg=25V, PER JESD22 A-108	1	77	0/77	
7.3.5.5 (7)	TEMPERATURE CYCLING (TC)	T=-65℃-150℃, PER JESD22 A-104				
	Pretest		1	77	0/77	
	@ 500 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77	
	Final 1000 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77	
7.3.5.6 (8)	AUTOCLAVE (AC)	T=121℃ 15PSIG 100%RH	1	77	0/77	96hrs
7.3.5.7 (9-1)	Highly Accelerated Stress Test(HAST)	T=130℃ RH=85% Vd=24V	1	77	0/77	96hrs
7.3.5.7 (9-2)	High Humidity High Temp. Reverse Bias(H ³ TRB)	T=85℃ RH=85% Vd=24V				
	Pretest		1	77	0/77	
	@ 500 Hours	T=85℃ RH=85% Vd=24V	1	77	0/77	
	Final 1000 Hours	T=85℃ RH=85% Vd=24V	1	77	0/77	
7.3.5.8 (10)	INTERMITTENTOPERATING LIFE (IOL)	Vd=5V / Id=250mA; PER MIL-STD-750 METHOD 1037				2mins on/off
	Pretest		1	77	0/77	
	@ 7560 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77	
	Final 15000 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77	
(10a)	POWER AND TEMP. CYCLE (PTC)	JESD22 A-105, Per Table AEC-Q101, p11	1	77	N/A	
7.3.5.9 (11)	ESD CHARACTERIZATION (ESD)	PER AEC-Q101-001 & -002	1	60	pass	MM 200V HBM 500V
7.3.5.10 (12)	D.P.A. (DPA)	AEC Q101-004 SEC. 4	1	4	0/4	
7.3.5.11 (13)	PHYSICAL DIMENSION (PD)	PER JESD22 B-100	1	30	0/30	
7.3.5.12 (14)	TERMINAL STRENGTH (TS)	MIL-STD-750, Method 2036	1	30	N/A	
7.3.5.13 (15)	RESISTANCE TO SOLVENTS (RTS)	JESD22 B-107	1	30	N/A	
(16)	CONSTANT ACCELERATION (CA)	N/A, not hermetically sealed device.	N/A	N/A		
(17)	VIBRATION VARIABLE FREQUENCY (VVF)	N/A, not hermetically sealed device.	N/A	N/A		
(18)	MECHANICAL SHOCK (MS)	N/A, not hermetically sealed device.	N/A	N/A		
(19)	HERMETICITY (HER)	N/A, not hermetically sealed device.	N/A	N/A		
7.3.5.14 (20)	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106	1	30	0/30	260℃ @30sec
7.3.5.15 (21)	SOLDERABILITY (SD)	J-STD-002	1	10	0/10	245℃ @5sec
7.3.5.16 (22)	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 as appropriate	1	10	0/10	
7.3.5.17 (23)	WIRE BOND STRENGTH (WBS)	MIL-STD-750 METHOD 2037	1	25	0/25	
7.3.5.18 (24)	BOND SHEAR (BS)	AEC-Q101-003	1	25	0/25	
7.3.5.19 (25)	DIE SHEAR (DS)	MIL-STD-750 METHOD 2017	1	25	0/25	
(26)	UNCLAMPED INDUCTIVE SWITCHING (UIS)	N/A, not for Diode	N/A	N/A		
(27)	DIELECTRIC INTEGRITY (DI)	N/A, not for Diode	N/A	N/A		
Summary: The lot passed the precondition test and 1000hrs hi-rel tests.						
Submitted by: Jianhua Yang 9/28/12 Approved by: Adam Gu 9/28/12						

CERTIFICATE OF DESIGN AND CONSTRUCTION

Printed specifications are not controlled documents. Verify revision before using.

Assembly and Test Site	CAT / DTC	Glass Transition Temperature (T_g)	105°C
DIC P/N	DMN6040SVT-7	Lead Frame Type	TSOT23-6 C
Package Type	TSOT23-6	Lead Frame Manufacturer	ASM
DIE P/N	AD0806SEAZY-BN	Lead Frame Material	CDA194
Die Line or Process	MOSFET	Terminal Finish (Plating) Material	100% matte Tin, annealed
Wafer Diameter	8"	Header Plating (Die Land Area)	Ag Plated
Wafer Fab Site(s)	MAXCHIP	Max Junction Temperature (T_j)	150°C
ID Method (multiple sites)	NA	Max Thermal Resistance Junction to Case (θ_{jc})	20°C/W
Assembly Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Max Thermal Resistance Junction to Ambient (θ_{ja})*	68 °C/W
Test Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Front Metal Type (Top Layer)	AlCu
Die attach Method / Material	EPOXY / 84-1LMISR4	Front Metal Thickness (Top Layer)	4um
Bond Wire/Clip Material & Wire Diameter	Cu 1.7mil	Back Metal Type (All Layers)	TiNiAg
Bond Type (at top side of the die)	Thermo sonic	Back Metal Thickness (all Layers)	1KA/3KA/10KA
Bond Type (at leadframe)	Thermo sonic	Die Conformal Coating (Passivation)	Oxide
No. of Bonds over Active Area	Gate *1 + Source *6	Die Passivation Thickness Range	SIN 9000A
Mold Compound Material Type	CEL-1702HF9 SK	Die Size (Width x Length x Thickness) in mm	1.58*0.92*0.158
Mold Compound Material Manufacturer	HITACHI	No. of Mask Steps	6

Completed by		Date	Certified by	Date
Typed/Printed	Elephant Xiang	October 3, 2013	Gan Yao	October 3, 2013
Signature	Elephant Xiang	October 3, 2013	Gan Yao	October 3, 2013
Title	Process Engineer		Engineering Manager	

Reliability Test Summary

FACTORY:		PART NUMBER : DMN6040SVT-7		SWB1210008		CUSTOMER:	
		Package Description : TSOT23-6		DIODES INC.:			
LABORATORY (If Different):		PART DESCRIPTION : Qualification for MAXCHIP wafer: AD0806SEAZY-BN(1.7 Cu wire+CEL-1702HF9 SK).					
DW-008 (AEC Q101) Test#	Test Description	Test Conditions	#Lots	#To Test	Results	REMARKS	
7.3.2 (1)	PRE- AND POST- STRESS ELECTRICAL TEST (TEST)	Per Spec					
7.3.3 (2)	PRECONDITIONING (PC)	JSED22 A-113 N/A for Axial	1	308	0/308		
7.3.5.1 (3)	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	1	500	0/500		
7.3.5.2 (4)	PARAMETRIC VERIFICATION (PV)	Per Data Sheet Ta1=-55℃, Ta2=25℃, Ta3=85℃, Ta4=150℃ Characteristic BVDSS@VGS=0V, ID=250uA Characteristic IDSS@VDS=60V, VGS=0V Characteristic IGSS@VGS=±20V, VDS=0V Characteristic VGS(th)@VDS=VGS, ID=250uA Characteristic RDSON@VGS=4.5V, ID=4A	1 of 3	25	0/25		
	Lot #2	Characteristic RDSON@VGS=10V, ID=4.3A Characteristic yFS@VDS=10V,ID=4.3A Characteristic VSD@VGS=0V, IS=1A	2 of 3	25	N/A		
	Lot #3		3 of 3	25	N/A		
7.3.5.3	FORWARD SURGE	MIL-750D, Method 4066	1	45	N/A		
7.3.5.4 (5)	HIGH TEMP. REVERSE BIAS (HTRB)	T=150℃ Vd=48V, PER JESD22 A-108					
	Pretest		1	77	0/77		
	@ 500 Hours	T=150℃ Vd=48V, PER JESD22 A-108	1	77	0/77		
	Final 1000 Hours	T=150℃ Vd=48V, PER JESD22 A-108	1	77	0/77		
(6)	HIGH TEMP GATE BIAS (HTGB)	T=150℃ Vg=20V, PER JESD22 A-108					
	Pretest		1	77	0/77		
	@ 500 Hours	T=150℃ Vg=20V, PER JESD22 A-108	1	77	0/77		
	Final 1000 Hours	T=150℃ Vg=20V, PER JESD22 A-108	1	77	0/77		
7.3.5.5 (7)	TEMPERATURE CYCLING (TC)	T=-65℃-150℃, PER JESD22 A-104					
	Pretest		1	77	0/77		
	@ 500 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77		
	Final 1000 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77		
7.3.5.6 (8)	AUTOCLAVE (AC)	T=121℃ 15PSIG 100%RH					
	Pretest		1	77	0/77		
	Final 96 Hours	T=121℃ 15PSIG 100%RH	1	77	0/77		
7.3.5.7 (9-1)	Highly Accelerated Stress Test(HAST)	T=130℃ RH=85% Vd=42V					
	Pretest		1	77	0/77		
	Final 96 Hours	T=130℃ RH=85% Vd=42V	1	77	0/77		
7.3.5.7 (9-2)	High Humidity High Temp. Reverse Bias(H ³ TRB)	T=85℃ RH=85% Vd=24V	1	77	N/A		
7.3.5.8 (10)	INTERMITTENTOPERATING LIFE (IOL)	Vd=5V / Id=200mA; PER MIL-STD-750 METHOD 1037				2mins on/off	
	Pretest		1	77	0/77		
	@ 7560 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77		
	Final 15000 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77		
(10a)	POWER AND TEMP. CYCLE (PTC)	JESD22 A-105, Per Table AEC-Q101, p11	1	77	N/A		
7.3.5.9 (11)	ESD CHARACTERIZATION (ESD)	PER AEC-Q101-001 & -002	1	60	pass	MM 250V HBM 800V	
7.3.5.10 (12)	D.P.A. (DPA)	AEC Q101-004 SEC. 4	1	4	0/4		
7.3.5.11 (13)	PHYSICAL DIMENSION (PD)	PER JESD22 B-100	1	30	0/30		
7.3.5.12 (14)	TERMINAL STRENGTH (TS)	MIL-STD-750, Method 2036	1	30	N/A		
7.3.5.13 (15)	RESISTANCE TO SOLVENTS (RTS)	JESD22 B-107	1	30	N/A		
(16)	CONSTANT ACCELERATION (CA)	N/A, not hermetically sealed device.	N/A	N/A			
(17)	VIBRATION VARIABLE FREQUENCY (VVF)	N/A, not hermetically sealed device.	N/A	N/A			
(18)	MECHANICAL SHOCK (MS)	N/A, not hermetically sealed device.	N/A	N/A			
(19)	HERMETICITY (HER)	N/A, not hermetically sealed device.	N/A	N/A			
7.3.5.14 (20)	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106	1	30	0/30	260℃ @30sec	
7.3.5.15 (21)	SOLDERABILITY (SD)	J-STD-002	1	10	0/10	245℃ @5sec	
7.3.5.16 (22)	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 as appropriate	1	10	0/10		
7.3.5.17 (23)	WIRE BOND STRENGTH (WBS)	MIL-STD-750 METHOD 2037	1	25	0/25		
7.3.5.18 (24)	BOND SHEAR (BS)	AEC-Q101-003	1	25	0/25		
7.3.5.19 (25)	DIE SHEAR (DS)	MIL-STD-750 METHOD 2017	1	25	0/25		
(26)	UNCLAMPED INDUCTIVE SWITCHING (UIS)	N/A, not for Diode	N/A	N/A			
(27)	DIELECTRIC INTEGRITY (DI)	N/A, not for Diode	N/A	N/A			
Summary: The lot passed the precondition test and 1000hrs hi-rel tests.							
Submitted by: Jianhua Yang 2/7/13		Approved by: Adam Gu 2/7/13					

Assembly and Test Site	DIODES INC	Glass transition temperature (T _g)	110°C
DIC P/N	DMP2035U-7	Lead material type	SOT-23R(SSOT-23)
Package Type	SSOT-23	Lead Material manufacturer	MHT
DIE P/N	ON14161	Lead plating/ coating	100% Matte Tin
Die line or process	MOSFET	Lead frame material type	CDA 194
Wafer Diameter	8"	Header plating (Die land area)	Ag
Wafer Fab Site(s)	HHNEC	Max junction temperature(T _j)	150°C
ID method (multiple sites)	NA	Max thermal resistance junction to case (θ _{JC})	NA
Assembly Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Max thermal resistance junction to ambient (θ _{JA})*	153.5 °C/W
Test Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Front metal type (Top layer)	AlCu
Die attach Method / Material	Epoxy / 84-1LMISR4	Front metal thickness (Top layer)	4um
Bond wire material & dia.	Cu 1.7mil	Back metal type (All layers)	TiNiAg
Bond type (at top side of the die)	Thermo sonic	Back metal thickness (all Layers)	Ti1000A/Ni2000A/Ag10000A
Bond type (at leadframe)	Thermo sonic	Die conforming coating	Oxide
No. of bonds over active area	5	Die size (width x length x thickness) in mm	1.16*0.96*0.178mm
Package material type	CEL1702HF9SK	Die passivation thickness range	PE-SION 10000A
Package material manufacturer	HITACHI	No. of mask steps	7

*Show conditions (i.e. pad size, board material, copper thickness, etc.

Attachments:

- 1) Die Photo
- 2) Package outline drawing
- 3) Die cross-section drawing
- 4) Wire bond & die placement diagram
- 5) Test circuits, bias levels and conditions

Requirements:

A separate Certificate of Design, Construction and Qualification shall be submitted for each P/N and assembly location.
Document shall be signed by a responsible individual at the supplier who can verify that all of the above information is correct. Type name and sign.

Completed by		Date	Certified by	Date
Typed/Printed	Xingliang Deng	April 7, 2013	Gan Yao	April 7, 2013
Signature				
Title				

Reliability Test Summary

FACTORY:		PART NUMBER : DMP2035U-7 SWB1211027		CUSTOMER:		
		Package Description : SOT-23		DIODES INC.:		
LABORATORY (If Different):		PART DESCRIPTION : Qualification for HHNEC wafer: ON14161 (1.7 Cu wire+ CEL-1702HF9 SK).				
DW-008 (AEC Q101) Test#	Test Description	Test Conditions	#Lots	#To Test	Results	REMARKS
7.3.2 (1)	PRE- AND POST- STRESS ELECTRICAL TEST (TEST)	Per Spec				
7.3.3 (2)	PRECONDITIONING (PC)	JSED22 A-113 N/A for Axial	1	308	0/308	
7.3.5.1 (3)	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	1	500	0/500	
7.3.5.2 (4)	PARAMETRIC VERIFICATION (PV)	Per Data Sheet Ta1=-55℃, Ta2=25℃, Ta3=85℃, Ta4=150℃ Characteristic BVDSS@VGS=0V, ID=-250uA Characteristic IDSS@VDS=-20V, VGS=0V Characteristic IGSS@VGS=±8V, VDS=0V Characteristic VGS(th)@VDS=VGS, ID=-250uA Characteristic RDSON@VGS=-4.5V, ID=-4A Characteristic RDSON@VGS=-2.5V, ID=-4A Characteristic RDSON@VGS=-1.8V, ID=-2A Characteristic yFS@VDS=-5V,ID=-4A Characteristic VSD@VGS=0V, IS=-1A	1 of 3	25	0/25	
	Lot #2		2 of 3	25	N/A	
	Lot #3		3 of 3	25	N/A	
7.3.5.3	FORWARD SURGE	MIL-750D, Method 4066	1	45	N/A	
7.3.5.4 (5)	HIGH TEMP. REVERSE BIAS (HTRB)	T=150℃ Vd=16V, PER JESD22 A-108				
	Pretest		1	77	0/77	
	@ 500 Hours	T=150℃ Vd=16V, PER JESD22 A-108	1	77	0/77	
	Final 1000 Hours	T=150℃ Vd=16V, PER JESD22 A-108	1	77	0/77	
(6)	HIGH TEMP GATE BIAS (HTGB)	T=150℃ Vg=8V, PER JESD22 A-108				
	Pretest		1	77	0/77	
	@ 500 Hours	T=150℃ Vg=8V, PER JESD22 A-108	1	77	0/77	
	Final 1000 Hours	T=150℃ Vg=8V, PER JESD22 A-108	1	77	0/77	
7.3.5.5 (7)	TEMPERATURE CYCLING (TC)	T=-65℃-150℃, PER JESD22 A-104				
	Pretest		1	77	0/77	
	@ 500 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77	
	Final 1000 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77	
7.3.5.6 (8)	AUTOCLAVE (AC)	T=121℃ 15PSIG 100%RH				
	Pretest		1	77	0/77	
	Final 96 Hours	T=121℃ 15PSIG 100%RH	1	77	0/77	
7.3.5.7 (9-1)	Highly Accelerated Stress Test(HAST)	T=130℃ RH=85% Vd=16V				
	Pretest		1	77	0/77	
	Final 96 Hours	T=130℃ RH=85% Vd=16V	1	77	0/77	
7.3.5.7 (9-2)	High Humidity High Temp. Reverse Bias(H ³ TRB)	T=85℃ RH=85% Vd=16V	1	77	N/A	
7.3.5.8 (10)	INTERMITTENTOPERATING LIFE (IOL)	Vd=4V / Id=200mA; PER MIL-STD-750 METHOD 1037				2mins on/off
	Pretest		1	77	0/77	
	@ 7560 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77	
	Final 15000 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77	
(10a)	POWER AND TEMP. CYCLE (PTC)	JESD22 A-105, Per Table AEC-Q101, p11	1	77	N/A	
7.3.5.9 (11)	ESD CHARACTERIZATION (ESD)	PER AEC-Q101-001 & -002	1	60	pass	MM 200V HBM 3KV
7.3.5.10 (12)	D.P.A. (DPA)	AEC Q101-004 SEC. 4	1	4	0/4	
7.3.5.11 (13)	PHYSICAL DIMENSION (PD)	PER JESD22 B-100	1	30	0/30	
7.3.5.12 (14)	TERMINAL STRENGTH (TS)	MIL-STD-750, Method 2036	1	30	N/A	
7.3.5.13 (15)	RESISTANCE TO SOLVENTS (RTS)	JESD22 B-107	1	30	N/A	
(16)	CONSTANT ACCELERATION (CA)	N/A, not hermetically sealed device.	N/A	N/A		
(17)	VIBRATION VARIABLE FREQUENCY (VVF)	N/A, not hermetically sealed device.	N/A	N/A		
(18)	MECHANICAL SHOCK (MS)	N/A, not hermetically sealed device.	N/A	N/A		
(19)	HERMETICITY (HER)	N/A, not hermetically sealed device.	N/A	N/A		
7.3.5.14 (20)	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106	1	30	0/30	260℃ @30sec
7.3.5.15 (21)	SOLDERABILITY (SD)	J-STD-002	1	10	0/10	245℃ @5sec
7.3.5.16 (22)	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 as appropriate	1	10	0/10	
7.3.5.17 (23)	WIRE BOND STRENGTH (WBS)	MIL-STD-750 METHOD 2037	1	25	0/25	
7.3.5.18 (24)	BOND SHEAR (BS)	AEC-Q101-003	1	25	0/25	
7.3.5.19 (25)	DIE SHEAR (DS)	MIL-STD-750 METHOD 2017	1	25	0/25	
(26)	UNCLAMPED INDUCTIVE SWITCHING (UIS)	N/A, not for Diode	N/A	N/A		
(27)	DIELECTRIC INTEGRITY (DI)	N/A, not for Diode	N/A	N/A		
Summary: The lot passed the precondition test and 1000hrs hi-rel tests.						
Submitted by: Jianhua Yang 4/7/13 Approved by: Adam Gu 4/7/13						

Assembly and Test Site	DIODES INC	Glass transition temperature (T _g)	110°C
DIC P/N	DMP2240UW-7	Lead material type	Cu Plated on Alloy 42
Package Type	SOT-323	Lead Material manufacturer	SLC
DIE P/N	ON14231	Lead plating/ coating	100% Matte Tin
Die line or process	MOSFET	Lead frame material type	SOT-323H
Wafer Diameter	8"	Header plating (Die land area)	Cu Plated
Wafer Fab Site(s)	HHNEC	Max junction temperature(T _j)	150°C
ID method (multiple sites)	NA	Max thermal resistance junction to case (θ _{JC})	N/A
Assembly Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Max thermal resistance junction to ambient (θ _{JA})*	500 °C/W
Test Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Front metal type (Top layer)	AlCu
Die attach Method / Material	EPOXY / 84-1LMISR4	Front metal thickness (Top layer)	4.0um
Bond wire material & dia.	Cu 1.3mil	Back metal type (All layers)	Ti/Ni/Ag
Bond type (at top side of the die)	Thermo sonic	Back metal thickness (all Layers)	1KA/2KA/10KA
Bond type (at leadframe)	Thermo sonic	Die conforming coating	Oxide
No. of bonds over active area	Gate *1 + Source *3	Die size (width x length x thickness) in mm	0.84*0.6*0.178mm
Package material type	CEL1702HF9SK	Die passivation thickness range	PE-SION 10000A
Package material manufacturer	HITACHI	No. of mask steps	5

*Show conditions (i.e. pad size, board material, copper thickness, etc.

Attachments:

- 1) Die Photo
- 2) Package outline drawing
- 3) Die cross-section drawing
- 4) Wire bond & die placement diagram
- 5) Test circuits, bias levels and conditions

Requirements:

A separate Certificate of Design, Construction and Qualification shall be submitted for each P/N and assembly location.
Document shall be signed by a responsible individual at the supplier who can verify that all of the above information is correct. Type name and sign.

Completed by		Date	Certified by	Date
Typed/Printed	Elephant Xiang	February 4, 2013	Gan Yao	February 4, 2013
Signature				
Title				



Reliability Test Summary

FACTORY:		PART NUMBER : DMP2240UW-7		SWB1210022 & SWB1303006		CUSTOMER:	
		Package Description : SOT-323				DIODES INC.:	
LABORATORY (If Different):		PART DESCRIPTION : Qualification for HHNEC wafer: ON14231 (1.3 Cu wire+ CEL-1702HF9SK).					
DW-008 (AEC Q101) Test#	Test Description	Test Conditions	#Lots	#To Test	Results	REMARKS	
7.3.2 (1)	PRE- AND POST- STRESS ELECTRICAL TEST (TEST)	Per Spec					
7.3.3 (2)	PRECONDITIONING (PC)	JSED22 A-113 N/A for Axial	1	308	0/308		
7.3.5.1 (3)	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	1	500	0/500		
7.3.5.2 (4)	PARAMETRIC VERIFICATION (PV)	Per Data Sheet Ta1=-55℃, Ta2=25℃, Ta3=85℃, Ta4=150℃ Characteristic BVDSS@VGS=0V, ID=-250uA Characteristic IDSS@VDS=-20V, VGS=0V Characteristic IGSS@VGS=±12V, VDS=0V Characteristic VGS(th)@VDS=VGS, ID=-250uA Characteristic RDSON@VGS=-4.5V, ID=-2A Characteristic RDSON@VGS=-2.5V, ID=-1.5A Characteristic RDSON@VGS=-1.8V, ID=-0.5A Characteristic yFS@VDS=-10V,ID=-810mA Characteristic VSD@VGS=0V, IS=-0.5A	1 of 3	25	0/25		
	Lot #2		2 of 3	25	N/A		
	Lot #3		3 of 3	25	N/A		
7.3.5.3	FORWARD SURGE	MIL-750D, Method 4066	1	45	N/A		
7.3.5.4 (5)	HIGH TEMP. REVERSE BIAS (HTRB)	T=150℃ Vd=16V, PER JESD22 A-108					
	Pretest		1	77	0/77		
	@ 500 Hours	T=150℃ Vd=16V, PER JESD22 A-108	1	77	0/77		
	Final 1000 Hours	T=150℃ Vd=16V, PER JESD22 A-108	1	77	0/77		
(6)	HIGH TEMP GATE BIAS (HTGB)	T=150℃ Vg=12V, PER JESD22 A-108					
	Pretest		1	77	0/77		
	@ 500 Hours	T=150℃ Vg=12V, PER JESD22 A-108	1	77	0/77		
	Final 1000 Hours	T=150℃ Vg=12V, PER JESD22 A-108	1	77	0/77		
7.3.5.5 (7)	TEMPERATURE CYCLING (TC)	T=-65℃-150℃, PER JESD22 A-104					
	Pretest		1	77	0/77		
	@ 500 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77		
	Final 1000 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77		
7.3.5.6 (8)	AUTOCLAVE (AC)	T=121℃ 15PSIG 100%RH					
	Pretest		1	77	0/77		
	Final 96 Hours	T=121℃ 15PSIG 100%RH	1	77	0/77		
7.3.5.7 (9-1)	Highly Accelerated Stress Test(HAST)	T=130℃ RH=85% Vd=16V					
	Pretest		1	77	0/77		
	Final 96 Hours	T=130℃ RH=85% Vd=16V	1	77	0/77		
7.3.5.7 (9-2)	High Humidity High Temp. Reverse Bias(H ³ TRB)	T=85℃ RH=85% Vd=16V	1	77	N/A		
7.3.5.8 (10)	INTERMITTENTOPERATING LIFE (IOL)	Vd=2V / Id=200mA; PER MIL-STD-750 METHOD 1037				2mins on/off	
	Pretest		1	77	0/77		
	@ 7560 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77		
	Final 15000 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77		
(10a)	POWER AND TEMP. CYCLE (PTC)	JESD22 A-105, Per Table AEC-Q101, p11	1	77	N/A		
7.3.5.9 (11)	ESD CHARACTERIZATION (ESD)	PER AEC-Q101-001 & -002	1	60	pass	MM 90V HBM 250V	
7.3.5.10 (12)	D.P.A. (DPA)	AEC Q101-004 SEC. 4	1	4	0/4		
7.3.5.11 (13)	PHYSICAL DIMENSION (PD)	PER JESD22 B-100	1	30	0/30		
7.3.5.12 (14)	TERMINAL STRENGTH (TS)	MIL-STD-750, Method 2036	1	30	N/A		
7.3.5.13 (15)	RESISTANCE TO SOLVENTS (RTS)	JESD22 B-107	1	30	N/A		
(16)	CONSTANT ACCELERATION (CA)	N/A, not hermetically sealed device.	N/A	N/A			
(17)	VIBRATION VARIABLE FREQUENCY (VVF)	N/A, not hermetically sealed device.	N/A	N/A			
(18)	MECHANICAL SHOCK (MS)	N/A, not hermetically sealed device.	N/A	N/A			
(19)	HERMETICITY (HER)	N/A, not hermetically sealed device.	N/A	N/A			
7.3.5.14 (20)	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106	1	30	0/30	260℃ @30sec	
7.3.5.15 (21)	SOLDERABILITY (SD)	J-STD-002	1	10	0/10	245℃ @5sec	
7.3.5.16 (22)	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 as appropriate	1	10	0/10		
7.3.5.17 (23)	WIRE BOND STRENGTH (WBS)	MIL-STD-750 METHOD 2037	1	25	0/25		
7.3.5.18 (24)	BOND SHEAR (BS)	AEC-Q101-003	1	25	0/25		
7.3.5.19 (25)	DIE SHEAR (DS)	MIL-STD-750 METHOD 2017	1	25	0/25		
(26)	UNCLAMPED INDUCTIVE SWITCHING (UIS)	N/A, not for Diode	N/A	N/A			
(27)	DIELECTRIC INTEGRITY (DI)	N/A, not for Diode	N/A	N/A			
Summary: The lot passed the precondition test and 1000hrs hi-rel tests.							
Submitted by: Jianhua Yang 5/31/13 Approved by: Adam Gu 5/31/13							

CERTIFICATE OF DESIGN AND CONSTRUCTION

Printed specifications are not controlled documents. Verify revision before using.

Assembly and Test Site	CAT / DTC	Glass Transition Temperature (T _g)	105°C
DIC P/N	DMP2305UVT-7	Lead Frame Type	TSOT23-6C
Package Type	TSOT23-6	Lead Frame Manufacturer	ASM
DIE P/N	ON14191	Lead Frame Material	CDA194
Die Line or Process	MOSFET	Terminal Finish (Plating) Material	100% matte Tin, annealed
Wafer Diameter	8"	Header Plating (Die Land Area)	Ag Plated
Wafer Fab Site(s)	HHNEC	Max Junction Temperature (T _j)	150°C
ID Method (multiple sites)	NA	Max Thermal Resistance Junction to Case (θ _{jc})	14 °C/W
Assembly Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Max Thermal Resistance Junction to Ambient (θ _{ja})*	76 °C/W
Test Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Front Metal Type (Top Layer)	AlCu
Die attach Method / Material	EPOXY / 84-1LMISR4	Front Metal Thickness (Top Layer)	4um
Bond Wire/Clip Material & Wire Diameter	Cu 1.7mil	Back Metal Type (All Layers)	TiNiAg
Bond Type (at top side of the die)	Thermo sonic	Back Metal Thickness (all Layers)	Ti1000A/Ni2000A/Ag10000A
Bond Type (at leadframe)	Thermo sonic	Die Conformal Coating (Passivation)	PE-SION
No. of Bonds over Active Area	Gate *1 + Source *5	Die Passivation Thickness Range	10000A
Mold Compound Material Type	CEL-1702HF9 SK	Die Size (Width x Length x Thickness) in mm	0.96*0.66*0.178
Mold Compound Material Manufacturer	HITACHI	No. of Mask Steps	6

Completed by		Date	Certified by	Date
Typed/Printed	Elephant Xiang	September 11, 2013	Gan Yao	September 11, 2013
Signature	Elephant Xiang	September 11, 2013	Gan Yao	September 11, 2013
Title	Process Engineer		Engineering Manager	

Reliability Test Summary

FACTORY:		PART NUMBER : DMP2305UVT-7 SWB1306030		CUSTOMER:		
		Package Description : TSOT26		DIODES INC.:		
LABORATORY (If Different):		PART DESCRIPTION : Qualification for HHNEC wafer: ON14191 (1.7 Cu wire+ CEL-1702HF9 SK).				
DW-008 (AEC Q101) Test#	Test Description	Test Conditions	#Lots	#To Test	Results	REMARKS
7.3.2 (1)	PRE- AND POST- STRESS ELECTRICAL TEST (TEST)	Per Spec				
7.3.3 (2)	PRECONDITIONING (PC)	JSED22 A-113 N/A for Axial	1	308	0/308	
7.3.5.1 (3)	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	1	500	0/500	
7.3.5.2 (4)	PARAMETRIC VERIFICATION (PV)	Per Data Sheet Ta1=-55℃, Ta2=25℃, Ta3=85℃, Ta4=150℃ Characteristic BVDSS@VGS=0V, ID=-250uA Characteristic IDSS@VDS=-20V, VGS=0V Characteristic IGSS@VGS=±8V, VDS=0V Characteristic VGS(th)@VDS=VGS, ID=-250uA Characteristic RDSON@VGS=-4.5V, ID=-4.2A Characteristic RDSON@VGS=-2.5V, ID=-3.4A Characteristic RDSON@VGS=-1.8V, ID=-2A Characteristic yFS@VDS=-5V,ID=-4.0A	1 of 3	25	0/25	
	Lot #2		2 of 3	25	N/A	
	Lot #3		3 of 3	25	N/A	
7.3.5.3	FORWARD SURGE	MIL-750D, Method 4066	1	45	N/A	
7.3.5.4 (5)	HIGH TEMP. REVERSE BIAS (HTRB)	T=150℃ Vd=16V, PER JESD22 A-108				
	Pretest		1	77	0/77	
	@ 500 Hours	T=150℃ Vd=16V, PER JESD22 A-108	1	77	0/77	
	Final 1000 Hours	T=150℃ Vd=16V, PER JESD22 A-108	1	77	0/77	
(6)	HIGH TEMP GATE BIAS (HTGB)	T=150℃ Vg=8V, PER JESD22 A-108				
	Pretest		1	77	0/77	
	@ 500 Hours	T=150℃ Vg=8V, PER JESD22 A-108	1	77	0/77	
	Final 1000 Hours	T=150℃ Vg=8V, PER JESD22 A-108	1	77	0/77	
7.3.5.5 (7)	TEMPERATURE CYCLING (TC)	T=-65℃-150℃, PER JESD22 A-104				
	Pretest		1	77	0/77	
	@ 500 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77	
	Final 1000 Cycles	T=-65℃-150℃, PER JESD22 A-104	1	77	0/77	
7.3.5.6 (8)	AUTOCLAVE (AC)	T=121℃ 15PSIG 100%RH				
	Pretest		1	77	0/77	
	Final 96 Hours	T=121℃ 15PSIG 100%RH	1	77	0/77	
7.3.5.7 (9-1)	Highly Accelerated Stress Test(HAST)	T=130℃ RH=85% Vd=16V				
	Pretest		1	77	0/77	
	Final 96 Hours	T=130℃ RH=85% Vd=16V	1	77	0/77	
7.3.5.7 (9-2)	High Humidity High Temp. Reverse Bias(H ³ TRB)	T=85℃ RH=85% Vd=16V	1	77	N/A	
7.3.5.8 (10)	INTERMITTENTOPERATING LIFE (IOL)	Vd=5V / Id=250mA; PER MIL-STD-750 METHOD 1037				2mins on/off
	Pretest		1	77	0/77	
	@ 7560 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77	
	Final 15000 Cycles	MIL-STD-750 METHOD 1037	1	77	0/77	
(10a)	POWER AND TEMP. CYCLE (PTC)	JESD22 A-105, Per Table AEC-Q101, p11	1	77	N/A	
7.3.5.9 (11)	ESD CHARACTERIZATION (ESD)	PER AEC-Q101-001 & -002	1	60	pass	MM: 100V HBM:300V
7.3.5.10 (12)	D.P.A. (DPA)	AEC Q101-004 SEC. 4	1	4	0/4	
7.3.5.11 (13)	PHYSICAL DIMENSION (PD)	PER JESD22 B-100	1	30	0/30	
7.3.5.12 (14)	TERMINAL STRENGTH (TS)	MIL-STD-750, Method 2036	1	30	N/A	
7.3.5.13 (15)	RESISTANCE TO SOLVENTS (RTS)	JESD22 B-107	1	30	N/A	
(16)	CONSTANT ACCELERATION (CA)	N/A, not hermetically sealed device.	N/A	N/A		
(17)	VIBRATION VARIABLE FREQUENCY (VVF)	N/A, not hermetically sealed device.	N/A	N/A		
(18)	MECHANICAL SHOCK (MS)	N/A, not hermetically sealed device.	N/A	N/A		
(19)	HERMETICITY (HER)	N/A, not hermetically sealed device.	N/A	N/A		
7.3.5.14 (20)	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106	1	30	0/30	260℃ @30sec
7.3.5.15 (21)	SOLDERABILITY (SD)	J-STD-002	1	10	0/10	245℃ @5sec
7.3.5.16 (22)	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 as appropriate	1	10	0/10	
7.3.5.17 (23)	WIRE BOND STRENGTH (WBS)	MIL-STD-750 METHOD 2037	1	25	0/25	
7.3.5.18 (24)	BOND SHEAR (BS)	AEC-Q101-003	1	25	0/25	
7.3.5.19 (25)	DIE SHEAR (DS)	MIL-STD-750 METHOD 2017	1	25	0/25	
(26)	UNCLAMPED INDUCTIVE SWITCHING (UIS)	N/A, not for Diode	N/A	N/A		
(27)	DIELECTRIC INTEGRITY (DI)	N/A, not for Diode	N/A	N/A		
Summary: The lot passed the precondition test and 1000hrs hi-rel tests.						
Submitted by: Jianhua Yang 9/5/13		Approved by: Adam Gu 9/5/13				

CERTIFICATE OF DESIGN AND CONSTRUCTION

Printed specifications are not controlled documents. Verify revision before using.

Assembly and Test Site	CAT / DTC	Glass Transition Temperature (T _g)	125°C
DIC P/N	DT1042-04SO-7	Lead Frame Type	TSOT23-6 R
Package Type	SOT-26	Lead Frame Manufacturer	ASM/NBKQ
DIE P/N	AN046C0-1	Lead Frame Material	CDA194
Die Line or Process	TVS	Terminal Finish (Plating) Material	Leadfree Pure Tin
Wafer Diameter	6"	Header Plating (Die Land Area)	COPPER
Wafer Fab Site(s)	BCD	Max Junction Temperature (T _j)	150°C
ID Method (multiple sites)	NA	Max Thermal Resistance Junction to Case (θ _{jc})	NA
Assembly Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Max Thermal Resistance Junction to Ambient (θ _{ja})*	NA
Test Locations(s)	DIODES TECHNOLOGY (CHENGDU) Co., Ltd. Plant 1, No.8 Kexin Road, Chengdu Hi-Tech Zone (West Park), Chengdu, Sichuang, P.R.China 611731	Front Metal Type (Top Layer)	ALCU
Die attach Method / Material	EPOXY / ABP8611	Front Metal Thickness (Top Layer)	1.85um
Bond Wire/Clip Material & Wire Diameter	CU 1.0MIL	Back Metal Type (All Layers)	NA
Bond Type (at top side of the die)	Thermo sonic	Back Metal Thickness (all Layers)	NA
Bond Type (at leadframe)	Thermo sonic	Die Conformal Coating (Passivation)	NA
No. of Bonds over Active Area	8 WIRES	Die Passivation Thickness Range	NA
Mold Compound Material Type	CEL-1700HF40SK-D3	Die Size (Width x Length x Thickness) in mm	0.886x0.490 *0.210 mm
Mold Compound Material Manufacturer	HITACHI	No. of Mask Steps	9

Completed by		Date	Certified by	Date
Typed/Printed				
Signature	Elephant Xiang	February 28, 2014	Gan Yao	02/28/2014
Title	Process Engineer		Eng. Manager	



SHANGHAI KAIHONG ELECTRONIC CO.,LTD

Reliability Test Summary Report

FACTORY:		PART NUMBER :DT1042-04SO SWB1401013 CUSTOMER Package: SOT26 DIODES INC.:				
LABORATORY (If Different):		PART DESCRIPTION:BCD wafer qual (AN046C0-1/139126.1 3#, 1.0Cu CEL-1700HF40SK-S3)				
DW-008 (AEC Q101) Test#	Test Description	Test Conditions	#Lots	#To Test	Results	REMARKS
7.3.2 (1)	PRE- AND POST- STRESS ELECTRICAL TEST (TEST)	Per Spec				
7.3.3 (2)	PRECONDITIONING (PC)	JSED22 A-113 N/A for Axial	1	308	0/308	
7.3.5.1 (3)	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	1	500	0/500	
7.3.5.2 (4)	PARAMETRIC VERIFICATION (PV)	Per Data Sheet Ta1=-55°C, Ta2=25°C, Ta3=85°C, Ta4=150°C Characteristic VZ@IZT=1mA Characteristic IR@VR=5V Characteristic VF@IF=15mA	1 of 3	25	0/25	
	Lot #2		2 of 3	25		
	Lot #3		3 of 3	25		
7.3.5.3	FORWARD SURGE	MIL-750D, Method 4066	1	45		
7.3.5.4 (5)	HIGH TEMP. REVERSE BIAS (HTRB)	T=150°C Vz=5V, PER JESD22 A-108	1	77		
	Pretest		1	77	0/77	
	@ 500 Hours	T=150°C Vz=5V, PER JESD22 A-108	1	77	0/77	
	Final 1000Hours	T=150°C Vz=5V, PER JESD22 A-108	1	77	0/77	
(6)	HIGH TEMP GATE BIAS (HTGB)	MIL-750D, Method 4066			N/A	
7.3.5.5 (7)	TEMPERATURE CYCLING (TC)	T=-65°C-150°C, PER JESD22 A-104				
	Pretest		1	77	0/77	
	@ 500 Cycles	T=-65°C-150°C, PER JESD22 A-104	1	77	0/77	
	Final 1000 Cycles	T=-65°C-150°C, PER JESD22 A-104	1	77	0/77	
7.3.5.6 (8)	AUTOCLAVE (AC)	T=121°C 15PSIG 100%RH	1	77	0/77	
7.3.5.7 (9)	HAST	T=130°C RH=85% Vz=5V	1	77		
	Pretest		1	77	0/77	
	@ 96 Hours	T=130°C RH=85% Vz=5V	1	77	0/77	
7.3.5.8 (10)	INTERMITTENT OPERATING LIFE (IOL)	Vz=4.8v/Iz=23mA, PER MIL-STD-750 METHOD 1037				15000cy @2min on/off
	Pretest	MIL-STD-750 METHOD 1037	1	77		
	Midpoint 7560CY	MIL-STD-750 METHOD 1037	1	77		
	After 15000CY	MIL-STD-750 METHOD 1037	1	77		
(10a)	POWER AND TEMP. CYCLE (PTC)	JESD22 A-105, Per Table AEC-Q101, p11	1	77		
(Optional)	Pretest	JESD22 A-105, Per Table AEC-Q101, p11	1	77		
	Midpoint	JESD22 A-105, Per Table AEC-Q101, p11	1	77		
	After	JESD22 A-105, Per Table AEC-Q101, p11	1	77		
7.3.5.9 (11)	ESD CHARACTERIZATION (ESD)	PER AEC-Q101-001 & -002	1	60	0/60	MM 400V HBM 16kV
7.3.5.10 (12)	D.P.A. (DPA)	AEC Q101-004 SEC. 4	1	2	0/2	
7.3.5.11 (13)	PHYSICAL DIMENSION (PD)	PER JESD22 B-100	1	30	0/30	
7.3.5.12 (14)	TERMINAL STRENGTH (TS)	MIL-STD-750, Method 2036	1	30		
7.3.5.13 (15)	RESISTANCE TO SOLVENTS (RTS)	JESD22 B-107	1	30		
(16)	CONSTANT ACCELERATION (CA)	N/A, not hermetically sealed device.	N/A	N/A		
(17)	VIBRATION VARIABLE FREQUENCY (VVF)	N/A, not hermetically sealed device.	N/A	N/A		
7.3.5.14 (20)	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106	1	30	0/30	260°C @30S
7.3.5.15 (21)	SOLDERABILITY (SD)	J-STD-002	1	10	0/10	245°C @5S
7.3.5.16 (22)	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 as appropriate	1	10	0/10	
7.3.5.17 (23)	WIRE BOND STRENGTH (WBS)	MIL-STD-750 METHOD 2037	1	30	0/30	
7.3.5.18 (24)	BOND SHEAR (BS)	AEC-Q101-003	1	30	0/30	
7.3.5.19 (25)	DIE SHEAR (DS)	MIL-STD-750 METHOD 2017	1	30	0/30	
Summary:		The lot passed PRE-con and 1000hrs full hi-rel test.				
Submitted by:		Joan Yu 04/18/14	Approved by:Adam Gu 04/18/14			

Assembly and Test Site	DIODES INC	Glass transition temperature (T _g)	125°C
DIC P/N	DT2042-04SO-7	Lead material type	EFTEC-64T
Package Type	SOT-26	Lead Material manufacturer	MHT/VAST/ASM/NBKQ
DIE P/N	AN034D0-1	Lead plating/ coating	100% Tin
Die line or process	TVS	Lead frame material type	EFTEC-64T
Wafer Diameter	6"	Header plating (Die land area)	Spot Ag
Wafer Fab Site(s)	BCD	Max junction temperature(T _j)	150°C
ID method (multiple sites)	NA	Max thermal resistance junction to case (θ _{JC})	NA
Assembly Locations(s)	DIODES INC. IN SHANGHAI, Plant1,NO.111-10 Songjiang Export Processing Zone, Shanghai,P.R.China 201600	Max thermal resistance junction to ambient (θ _{JA})*	417°C/W
Test Locations(s)	DIODES INC. IN SHANGHAI, Plant1,NO.111-10 Songjiang Export Processing Zone, Shanghai,P.R.China 201600	Front metal type (Top layer)	AlCu
Die attach Method / Material	Epoxy(ABP8611)	Front metal thickness (Top layer)	1.85um
Bond wire material & dia.	Cu wire, 1.0mill	Back metal type (All layers)	N/A
Bond type (at top side of the die)	Thermo sonic	Back metal thickness (all Layers)	N/A
Bond type (at leadframe)	Thermo sonic	Die conforming coating	N/A
No. of bonds over active area	8	Die size (width x length x thickness) in mm	0.892.4x0.782 *0.205 mm
Package material type	CEL1702HF9	Die passivation thickness range	N/A
Package material manufacturer	HITACHI	No. of mask steps	9

*Show conditions (i.e. pad size, board material, copper thickness, etc.

Attachments:

- 1) Die Photo
- 2) Package outline drawing
- 3) Die cross-section drawing
- 4) Wire bond & die placement diagram
- 5) Test circuits, bias levels and conditions

Requirements:

A separate Certificate of Design, Construction and Qualification shall be submitted for each P/N and assembly location.
Document shall be signed by a responsible individual at the supplier who can verify that all of the above information is correct. Type name and sign.

Completed by		Date	Certified by	Date
Typed/Printed	Liang Gao	June 7, 2013	Bill Tian	June 7, 2013
Signature				
Title	PE	June 7, 2013	PE Mgr	June 7, 2013



SHANGHAI KAIHONG ELECTRONIC CO.,LTD

Reliability Test Summary Report

FACTORY:		PART NUMBER :DT2042-04TS SWR1311273 CUSTOMER Package: TSOT26 DIODES INC.:				
LABORATORY (If Different):		PART DESCRIPTION:BCD wafer qual (AN034D01 , 1.0Cu,CEL-1702HF9SK)				
DW-008 (AEC Q101) Test#	Test Description	Test Conditions	#Lots	#To Test	Results	REMARKS
7.3.2 (1)	PRE- AND POST- STRESS ELECTRICAL TEST (TEST)	Per Spec				
7.3.3 (2)	PRECONDITIONING (PC)	JSED22 A-113 N/A for Axial	1	308	0/308	
7.3.5.1 (3)	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	1	500	0/500	
7.3.5.2 (4)	PARAMETRIC VERIFICATION (PV)	Per Data Sheet Ta1=-55°C, Ta2=25°C, Ta3=85°C, Ta4=150°C Characteristic VZ@IZT=1mA Characteristic IR@VR=5V Characteristic VF@IF=15mA	1 of 3	25	0/25	
	Lot #2		2 of 3	25		
	Lot #3		3 of 3	25		
7.3.5.3	FORWARD SURGE	MIL-750D, Method 4066	1	45		
7.3.5.4 (5)	HIGH TEMP. REVERSE BIAS (HTRB)	T=150°C Vz=5.5V, PER JESD22 A-108	1	77		
	Pretest		1	77	0/77	
	@ 500 Hours	T=150°C Vz=5.5V, PER JESD22 A-108	1	77	0/77	
	Final 1000Hours	T=150°C Vz=5.5V, PER JESD22 A-108	1	77	0/77	
(6)	HIGH TEMP GATE BIAS (HTGB)	MIL-750D, Method 4066			N/A	
7.3.5.5 (7)	TEMPERATURE CYCLING (TC)	T=-65°C-150°C, PER JESD22 A-104				
	Pretest		1	77	0/77	
	@ 500 Cycles	T=-65°C-150°C, PER JESD22 A-104	1	77	0/77	
	Final 1000 Cycles	T=-65°C-150°C, PER JESD22 A-104	1	77	0/77	
7.3.5.6 (8)	AUTOCLAVE (AC)	T=121°C 15PSIG 100%RH	1	77	0/77	
7.3.5.7 (9)	HAST	T=130°C RH=85% Vz=4V	1	77		
	Pretest		1	77	0/77	
	@ 96 Hours	T=130°C RH=85% Vz=4V	1	77	0/77	
7.3.5.8 (10)	INTERMITTENT OPERATING LIFE (IOL)	Vz=4.8v/Iz=23mA, PER MIL-STD-750 METHOD 1037				15000cy @2min on/off
	Pretest	MIL-STD-750 METHOD 1037	1	77		
	Midpoint 7560CY	MIL-STD-750 METHOD 1037	1	77		
	After 15000CY	MIL-STD-750 METHOD 1037	1	77		
(10a)	POWER AND TEMP. CYCLE (PTC)	JESD22 A-105, Per Table AEC-Q101, p11	1	77		
(Optional)	Pretest	JESD22 A-105, Per Table AEC-Q101, p11	1	77		
	Midpoint	JESD22 A-105, Per Table AEC-Q101, p11	1	77		
	After	JESD22 A-105, Per Table AEC-Q101, p11	1	77		
7.3.5.9 (11)	ESD CHARACTERIZATION (ESD)	PER AEC-Q101-001 & -002	1	60	0/60	MM 400V HBM 16kV
7.3.5.10 (12)	D.P.A. (DPA)	AEC Q101-004 SEC. 4	1	2	0/2	
7.3.5.11 (13)	PHYSICAL DIMENSION (PD)	PER JESD22 B-100	1	30	0/30	
7.3.5.12 (14)	TERMINAL STRENGTH (TS)	MIL-STD-750, Method 2036	1	30		
7.3.5.13 (15)	RESISTANCE TO SOLVENTS (RTS)	JESD22 B-107	1	30		
(16)	CONSTANT ACCELERATION (CA)	N/A, not hermetically sealed device.	N/A	N/A		
(17)	VIBRATION VARIABLE FREQUENCY (VVF)	N/A, not hermetically sealed device.	N/A	N/A		
7.3.5.14 (20)	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106	1	30	0/30	260°C @30S
7.3.5.15 (21)	SOLDERABILITY (SD)	J-STD-002	1	10	0/10	245°C @5S
7.3.5.16 (22)	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 as appropriate	1	10	0/10	
7.3.5.17 (23)	WIRE BOND STRENGTH (WBS)	MIL-STD-750 METHOD 2037	1	30	0/30	
7.3.5.18 (24)	BOND SHEAR (BS)	AEC-Q101-003	1	30	0/30	
7.3.5.19 (25)	DIE SHEAR (DS)	MIL-STD-750 METHOD 2017	1	30	0/30	
Summary:		The lot passed PRE-con and 1000hrs full hi-rel test.				
Submitted by:		Approved by:Adam Gu 02/20/14				



Certificate of Design, Construction & Qualification

	Category					Qual Device 1		Qual Device 2			
	Product	Part Number				1N4148W-7-F		BZT52C43-7/13-F			
	Assembly	Package Type				SOD-123		SOD-123			
	Assembly	Package Size				2.55*1.3*1.075		2.55*1.3*1.075			
	Wafer	Die Name(s)				B1003FM		Z5430			
	Wafer	Die Size (W/L/Thickness) - After Saw				0.262*0.262		0.41*0.41			
	Wafer	Die Process / Technology				SWITCH		ZENER			
	Wafer	Wafer FAB/ Location				KFAB / USA		KFAB / USA			
	Wafer	Wafer Diameter				6"		5"			
	Wafer	Front Metal Type				AlSiCu		Al-1%Si			
	Wafer	Front Metal Layer Number/ Thickness				3.5um		2.0um			
	Wafer	Back Metal Type (All Layers)				NiV / Au		NiV / Au			
	Wafer	Back Metal Thickness (All Layers)				125A NiV and 5150A Au		NiV 125A / Au 5150A			
	Wafer	Die Conforming Coating (Passivation)				PECVD Oxide,Nitride		SiO2			
	Wafer	Die passivation thickness range				1.5kA Nitride; 6kA Oxide		6000-9000A			
	Wafer	No of masks Steps				5		4			
	Assembly	Die quantity per package (e.g. single or dual dies)				1		1			
	Assembly	Die Attach Method (DB Epoxy/Solder Type)				Eutectic		Eutectic			
	Assembly	Die Attach Material/ Supplier				NA		NA			
	Assembly	Bond Wire/Clip Bond Material/ Supplier				Cu / TANAKA & HRS		Cu / TANAKA & HRS			
	Assembly	Bond Type (at Die)				Ball		Ball			
	Assembly	Bond Type (at LF)				Wedge		Wedge			
	Assembly	No. of bond over active area				1		1			
	Assembly	Glass Transistion Temp				160°C		160°C			
	Assembly	Terminal Finish (Plating) Material				100% matte tin		100% matte tin			
	Assembly	Header plating (Die Land Area)				Full copper plating		Full copper plating			
	Assembly	Wire Diameter				1.0mil		1.0mil			
	Assembly	Leadframe Type				SOD123 B TYPE 14ROW		SOD123 B TYPE 14ROW			
	Assembly	Leadframe Material				A42		A42			
	Assembly	Lead Frame Manufacturer				SHE / ASM		SHE / ASM			
	Assembly	Molding Compound Type				GR640HV-L1		GR640HV-L1			
	Assembly	Mold Compound Material Manufacturer				HENKEL		HENKEL			
	Assembly	Green Compound (Yes/No)				Yes		Yes			
	Assembly	Lead-Free (Yes/No)				Yes		Yes			
	Assembly	Assembly Site/ Location				CAT / ChengDu		CAT / ChengDu			
	Assembly	Test Site/ Location				CAT / ChengDu		CAT / ChengDu			
	Product	Max Junction Temp				150°C		150°C			
	Product	Max Thermal resistance Junc (amibent)				315°C/W		338°C/W			
	Product	DataSheet				DS30086		DS18004			
		Reliability and Characterization Testing									
# in AEC Q101 (D)	Test	Test Conditions	Duration / Limits			Accept on # Failed/ Sample Size per Lot	# of Lots	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail
2	MSL1 Pre-conditioning	Bake 125C	24 Hrs			SMD only, for Test #7, 8, 9 & 10	3 Assembly lots	X	Passed	X	Passed
		Soak 85C, 85% RH	168Hrs					X	Passed	X	Passed
		IR reflow 260C	3 cycles					X	Passed	X	Passed
3	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	PER SPEC	All qualification parts submitted for testing		X	Passed	X	Passed		
4	PARAMETRIC VERIFICATION (PV)	-55C, 25C, 85C, 125C, 150C	Operating Range, Per Data Sheet	0/25	3 wafer lots	X	Passed	X	Passed		
	FORWARD SURGE	MIL-750D, METHOD 4066	PER DATA SHEET	0/45	3 wafer lots	X	Passed				
5	HTRB	Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1	168 Hrs	0/77	3 wafer lots	X	Passed				
			500 Hrs	0/77		X	Passed				
			1000 Hrs	0/77		X	Passed				
5c	Steady State Operational (Zeners Only)	MIL-STD-750-1, M1038 Condition B (Zeners), at rated IZ max, TA to rated TJ, TEST before and after SSOP as a minimum.	168 Hrs	0/77	3 wafer lots			X	Passed		
			500 Hrs	0/77				X	Passed		
			1000 Hrs	0/77				X	Passed		
7	TC	Ta=-65C to 150C or Max Tj, PER JESD22A-104	168 Cycles	0/77	3 Assembly lots	X	Passed	X	Passed		
			500 Cycles	0/77		X	Passed	X	Passed		
			1000 Cycles	0/77		X	Passed	X	Passed		
8	PCT/AC	Ta=121°C 15PSIG 100%RH; PER JESD22-A102	96 Hrs	0/77	3 Assembly lots	X	Passed	X	Passed		
9	HAST	Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110	96 Hrs	0/77	3 wafer lots	X	Passed	X	Passed		
10	IOL	MIL-STD-750 Method 1037 (N/A for TVS)	2520 Cycles	0/77	3 wafer lots	X	Passed	X	Passed		
			7560 Cycles	0/77		X	Passed	X	Passed		
			15000 Cycles	0/77		X	Passed	X	Passed		
11	ESD	HBM (AEC-Q101-001)	PER DATA SHEET	0/30	1 wafer lot	X	Passed	X	Passed		
		CDM (AEC-Q100-005)	PER DATA SHEET	0/30	1 wafer lot	X	Passed	X	Passed		
12	DPA	AEC Q101-004 SEC. 4		0/2	1 Assembly lot	X	Passed	X	Passed		
20	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 A-111 (SMD), B-106 (PTH) (260C @30S)	PER SPEC	0/30	1	X	Passed	X	Passed		
21	Solderability	J-STD-002; JESD22B102 (245C +0/5S)	5 Seconds	0/10	1 Assembly lot	X	Passed	X	Passed		
22	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 AS APPROPRIATE	PER SPEC	0/10	1 Assembly lot	X	Passed	X	Passed		
23	Wire Bond Strength	MIL-STD-750 METHOD 2037 (JESD22-B116B)	Cpk>1.66	0/5	1 Assembly lot	X	Passed	X	Passed		
24	BOND SHEAR	AEC-Q101-003	Cpk>1.66	0/5	1 Assembly lot	X	Passed	X	Passed		
25	Die Shear	MIL-STD-750 (2017)	Cpk>1.66	0/5	1 Assembly lot	X	Passed	X	Passed		
	Remark:										
Summary:		David Tang 5/11/15									
Submitted By:		Mark Li 5/11/15									
Approved By:		Hiwen Hu 5/11/15									



Certificate of Design, Construction & Qualification

	Category				QBS Source Device 2/Qual device 1		QBS Source Device 3/Qual device 2		
	Product	Part Number			D5V0F4U6SO-7		DRTR5V0U4TS-7		
	Assembly	Package Type			SOT26		TSOT23-6		
	Assembly	Package Size			3.0*1.6*1.1 (mm)		1.6*2.9*0.92(mm)		
	Wafer	Die Name(s)			TVU5V5C2FC		TVU5V5CC4C		
	Wafer	Die Size (W/L/Thickness) - After Saw			440*440*200um		510x670x200um		
	Wafer	Die Process / Technology			Bipolar		Bipolar		
	Wafer	Wafer FAB			OFAB		OFAB		
	Wafer	Wafer Diameter			6"		6"		
	Wafer	Front Metal Type			AlSi		AlSi		
	Wafer	Front Metal Thickness			3.0um		3.0um		
	Wafer	Back Metal Type (All Layers)			Au		Au		
	Wafer	Back Metal Thickness (All Layers)			0.5um Au		0.5um Au		
	Wafer	No of masks Steps			10		10		
	Assembly	Die quantity per package (e.g. single or dual dies)			1		1		
	Assembly	Die Attach Method (DB Epoxy/Solder Type)			Epoxy		Epoxy		
	Assembly	Die Attach Material			84-1LMISR4		84-1LMISR4		
	Assembly	Bond Wire/Clip Bond Material			0.8 mils Cu		0.8 mils Cu		
	Assembly	Bond Type (at Die)			Thermosonic		Thermosonic		
	Assembly	Bond Type (at LF)			Thermosonic		Thermosonic		
	Assembly	No. of bond over active area			5		5		
	Assembly	Glass Transistion Temp			120°C		120°C		
	Assembly	Terminal Finish (Plating) Material			Matte Tin		Matte Tin		
	Assembly	Wire Diameter			0.8 mils		0.8 mils		
	Assembly	Leadframe Type			TSOT23-6L R		TSOT23-6L R		
	Assembly	Leadframe Material			A194		A194		
	Assembly	Lead Frame Manufacturer			ASM/SDI		ASM/SDI		
	Assembly	Molding Compound Type			CEL-1700HF40SK-D3		CEL-1700HF40SK-D3		
	Assembly	Mold Compound Material Manufacturer			HITACHI		HITACHI		
	Assembly	Green Compound (Yes/No)			Yes		Yes		
	Assembly	Lead-Free (Yes/No)			Yes		Yes		
	Assembly	Assembly Site			CAT		CAT		
	Assembly	Test Site			CAT		CAT		
	Product	Max Junction Temp			150°C		150°C		
	Product	Max Thermal resistance Junc (amibent)			500°C/W		500°C/W		
	Product	DataSheet			DS35472		DS36009		
		Reliability and Characterization Testing							
# in AEC-Q101 (D)	Test	Test Conditions	Duration / Limits		Fail/SS - Sample Size	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail
2	MSL1 Pre-conditioning	Bake 125C	24 Hrs		0/231	X	pass	X	pass
		Soak 85C, 85% RH	168Hrs		0/231	X	pass	X	pass
		IR reflow 260C	3 cycles		0/231	X	pass	X	pass
3	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	PER SPEC	0/500	X	pass	X	pass	
4	PARAMETRIC VERIFICATION (PV)	-55C, 25C, 85C, 125C, 150C	Operating Range, Per Data Sheet	0/25	X	pass	X	pass	
5	HTRB	T=150°C Vd=80%, PER JESD22 A-108	168 Hrs	0/77	X	pass	X	pass	
			500 Hrs	0/77	X	pass	X	pass	
			1000 Hrs	0/77	X	pass	X	pass	
7	TC	-65C to 150C PER JESD22A-104	168 Cycles	0/77	X	pass	X	pass	
			500 Cycles	0/77	X	pass	X	pass	
			1000 Cycles	0/77	X	pass	X	pass	
8	PCT/AC	T=121°C 15PSIG 100%RH	96 Hrs	0/77	X	pass	X	pass	
9	HAST	130C, 85%RH 33.3 psia 80% Bias	96 Hrs	0/77	X	pass	X	pass	
11	ESD	HBM (AEC-Q101-001)	PER DATA SHEET	0/30	X	pass	X	pass	
		MM (AEC-Q101-002)	PER DATA SHEET	0/30	X	pass	X	pass	
12	DPA	AEC Q101-004 SEC. 4		0/2	X	pass	X	pass	
13	PD	JESD22-B100B	Package Outline	0/30	X	pass	X	pass	
20	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106 (260C @30S)	PER SPEC	0/30	X	pass	X	pass	
21	Solderability	J-STD-002 (245C +0/5S)	5 Seconds	0/10	X	pass	X	pass	
22	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 AS APPROPRIATE	PER SPEC	0/10	X	pass	X	pass	
23	Wire Bond Strength	MIL-STD-750 METHOD 2037 (JESD22-B116B)	Cpk>1.66	0/30	X	pass	X	pass	
24	BOND SHEAR	AEC-Q101-003	Cpk>1.66	0/30	X	pass	X	pass	
25	Die Shear	MIL-STD-750 (2017)	Cpk>1.66	0/30	X	pass	X	pass	
	Remark:								
Summary: _____ Submitted By: Approved By:									



Certificate of Design, Construction & Qualification

	Category					QBS Source Device 2	
	Product	Part Number			DMN61D8LVT-7		
	Assembly	Package Type			TSOT-26		
	Assembly	Package Size			2.8*2.9*0.92		
	Wafer	Die Name(s)			ZXMS6007D		
	Wafer	Die Size (W/L/Thickness) - After Saw			0.66*0.66 *0.203		
	Wafer	Die Process / Technology			SVMOS3 MOSFET		
	Wafer	Wafer FAB/ Location			OFAB / Oldham		
	Wafer	Wafer Diameter			6 inch		
	Wafer	Front Metal Type			Ti/TiN/AlSiCu		
	Wafer	Front Metal Layer Number/ Thickness			1/3.25um		
	Wafer	Number of Poly Layers			2		
	Wafer	Back Metal Type (All Layers)			Ti/NiV/Ag		
	Wafer	Back Metal Thickness (All Layers)			300A /2600A /5500A		
	Wafer	Die Conforming Coating (Passivation)			Oxide		
	Wafer	Die passivation thickness range			Oxide 5KA/ Nitride 5KA		
	Wafer	No of masks Steps			9		
	Assembly	Die quantity per package (e.g. single or dual dies)			2		
	Assembly	Die Attach Method (DB Epoxy/Solder Type)			EPOXY		
	Assembly	Die Attach Material/ Supplier			9005SP / Yizbond		
	Assembly	Bond Wire/Clip Bond Material/ Supplier			Copper / Heareus		
	Assembly	Bond Type (at Die)			Thermosonic		
	Assembly	Bond Type (at LF)			Thermosonic		
	Assembly	No. of bond over active area			Gate: 1 wire/die Source: 2 wires/die		
	Assembly	Glass Transistion Temp			125°C		
	Assembly	Terminal Finish (Plating) Material			Pure Sn		
	Assembly	Header plating (Die Land Area)			Silver spot plating		
	Assembly	Wire Diameter			1.0mil		
	Assembly	Leadframe Type			TSOT23-6T		
	Assembly	Leadframe Material			CDA194 / EFTEC-64T		
	Assembly	Lead Frame Manufacturer			ASM		
	Assembly	Molding Compound Type			CEL-1702HF9 SK		
	Assembly	Mold Compound Material Manufacturer			Hitachi		
	Assembly	Green Compound (Yes/No)			Yes		
	Assembly	Lead-Free (Yes/No)			Yes		
	Assembly	Assembly Site/ Location			SAT / Shanghai		
	Assembly	Test Site/ Location			SAT / Shanghai		
	Product	Max Junction Temp			150°C		
	Product	Max Thermal resistance Junc (case)			42°C/W		
	Product	Max Thermal resistance Junc (amibent)			116°C/W		
	Product	DataSheet			DS37630		
		Reliability and Characterization Testing					
# in AEC Q101 (D)	Test	Test Conditions	Duration / Limits	Accept on # Failed/ Sample Size per Lot	# of Lots	X = Test Needed	Results Pass/Fail
2	MSL1 Pre-conditioning	Bake 125C	24 Hrs	SMD only, for Test #7, 8, 9 & 10	3 Assembly lots	X	Pass
		Soak 85C, 85% RH	168Hrs			X	Pass
		IR reflow 260C	3 cycles			X	Pass
3	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	PER SPEC	All qualification parts submitted for testing		X	Pass
4	PARAMETRIC VERIFICATION (PV)	-55C, 25C, 85C, 125C, 150C	Operating Range, Per Data Sheet	0/25	3 wafer lots	X	Pass
5	HTRB	Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1	168 Hrs	0/77	3 wafer lots	X	Pass
			500 Hrs	0/77		X	Pass
			1000 Hrs	0/77		X	Pass
6	HTGB (Gated Devices only)	Ta=150°C or Max Tj, Vg=100%, PER JESD22 A-108	168 Hrs	0/77	3 wafer lots	X	Pass
			500 Hrs	0/77		X	Pass
			1000 Hrs	0/77		X	Pass
7	TC	Ta=-65C to 150C or Max Tj, PER JESD22A-104	168 Cycles	0/77	3 Assembly lots	X	Pass
			500 Cycles	0/77		X	Pass
			1000 Cycles	0/77		X	Pass
7a	TC Hot Test (for MOSFET)	JESD22 A-104, Appendix 6	125C TEST after TC, followed by decap and wire pull from 5 devices with bond wire sizes < 5mil	0/77	3 Assembly lots	X	Pass
7b	Wire Bond Integrity	MIL-STD-750, Method 2037 (For bonding of dissimilar metals, eg: Au/Al)	500 Hrs	0/5	3 Assembly lots	X	Pass
8	PCT/AC	Ta=121°C 15PSIG 100%RH; PER JESD22-A102	96 Hrs	0/77	3 Assembly lots	X	Pass
9	HAST	Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110	96 Hrs	0/77	3 wafer lots	X	Pass
10	IOL	MIL-STD-750 Method 1037 (N/A for TVS)	2520 Cycles	0/77	3 wafer lots	X	Pass
			7560 Cycles	0/77		X	Pass
			15000 Cycles	0/77		X	Pass
11	ESD	HBM (AEC-Q101-001)	PER DATA SHEET	0/30	1 wafer lot	X	Pass
		CDM (AEC-Q100-005)	PER DATA SHEET	0/30	1 wafer lot	X	Pass
		MM (AEC-Q101-002)	PER DATA SHEET	0/30	1 wafer lot	X	Pass
12	DPA	AEC Q101-004 SEC. 4		0/2	1 Assembly lot	X	Pass
13	Package Physical Dimemions (PD)	JESD22-B100	Package Outline	0/30	1 Assembly lot	X	Pass
20	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 A-111 (SMD), B-106 (PTH) (260C @30S)	PER SPEC	0/30	1 Assembly lot	X	Pass
21	Solderability	J-STD-002; JESD22B102 (245C +0/5S)	5 Seconds	0/10	1 Assembly lot	X	Pass
22	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 AS APPROPRIATE	PER SPEC	0/10	1 Assembly lot	X	Pass
23	Wire Bond Strength	MIL-STD-750 METHOD 2037 (JESD22-B116B)	Cpk>1.66	0/5	1 Assembly lot	X	Pass
24	BOND SHEAR	AEC-Q101-003	Cpk>1.66	0/5	1 Assembly lot	X	Pass
25	Die Shear	MIL-STD-750 (2017)	Cpk>1.66	0/5	1 Assembly lot	X	Pass
	Remark:						
Summary: _____							
Submitted By: Charlie Tang							
Approved By:							



Certificate of Design, Construction & Qualification

Description: Add CAT as additional A/T Site for SOT-26, SOT-23 and TSOT26 MOSFETs

	Category					Full Qual Device 1		Full Qual Device 2		Full Qual Device 3		Full Qual Device 4	
	Product	Part Number				DMP3056LDM-7		DMG6402LDM-7		DMG6968UDM-7		DMG2305UX-7	
	Assembly	Package Type				SOT-26		SOT-26		SOT-26		SOT-23	
	Assembly	Package Size (mm)				3.0*2.8*1.15		3.0*2.8*1.15		2.8*3.0*1.15		2.9*2.4*1.05	
	Wafer	Die Name(s)				ON14401		AD0806AL811BXX-BN		ON14101		AD0806AL796AXX-BN	
	Wafer	Die Size (W/L/Thickness) - After Saw				1.46*0.86*0.178mm		0.96*0.66*0.158mm		1.07*0.67*0.178mm		0.96*0.66*0.158mm	
	Wafer	Die Process / Technology				MOSFET		MOSFET		MOSFET		MOSFET	
	Wafer	Wafer FAB				HHGrace		Sumpro		HHGrace		Sumpro	
	Wafer	Wafer Diameter				8"		8"		8"		8"	
	Wafer	Front Metal Type				AlCu		AlCu		AlCu		AlCu	
	Wafer	Front Metal Thickness				4.0um		4.0um		4um		4um	
	Wafer	Back Metal Type (All Layers)				TiNiAg		Ti/Ni/Ti/Ag		Ti/Ni/Ag		Ti/Ni/Ti/Ag	
	Wafer	Back Metal Thickness (All Layers)				1KA/2KA/10KA		1KA/3KA/100A/10KA		1KA/2KA/10KA		1KA/3KA/100A/10KA	
	Wafer	Die Conforming Coating (Passivation)				Oxide		Oxide		Oxide		Oxide	
	Wafer	Die passivation thickness range				PE-SION 10000A		TEOS Oxide 1.6KA/ Nitride 3.8KA		PE-SION 10000A		TEOS Oxide 1.6KA/ Nitride 3.8KA	
	Wafer	No of masks Steps				6		6		7		6	
	Assembly	e quantity per package (e.g. single or dual dies)				Single Die		Single Die		Dual		Single	
	Assembly	Die Attach Method (DB Epoxy/Solder Type)				EPOXY		EPOXY		EPOXY		EPOXY	
	Assembly	Die Attach Material				84-1LMISR4		84-1LMISR4		84-1LMISR4		84-1LMISR4	
	Assembly	Bond Wire/Clip Bond Material				Cu Wire		Cu Wire		Cu Wire		Cu Wire	
	Assembly	Bond Type (at Die)				Thermo sonic		Thermo sonic		Thermo sonic		Thermo sonic	
	Assembly	Bond Type (at LF)				Thermo sonic		Thermo sonic		Thermo sonic		Thermo sonic	
	Assembly	No. of bond over active area				Gate: 1 wire Source: 5wires		Gate: 1 wire Source: 6wires		Gate: 1 wire/die; Source: 4wires/die		Gate: 1wire; Source: 5wires	
	Assembly	Glass Transition Temp				130°C		130°C		130°C		130°C	
	Assembly	Terminal Finish (Plating) Material				Pb free		Pb free		Pb free		Pb free	
	Assembly	Header plating (Die Land Area)				Bare Copper		Bare Copper		Bare Copper		Bare Copper	
	Assembly	Wire Diameter				1.7mil		1.7mil		1.7mil		1.7mil	
	Assembly	Leadframe Type				TSOT23-6		TSOT23-6		TSOT23-6		SOT-23 R	
	Assembly	Leadframe Material				CDA194		CDA194		A194		A194	
	Assembly	Lead Frame Manufacturer				ASM		ASM		NBKQ		NBKQ	
	Assembly	Molding Compound Type				CEL-1700HF40SK-D3		CEL-1700HF40SK-D3		CEL-1700HF40SK-D3		CEL-1700HF40SK-D3	
	Assembly	Mold Compound Material Manufacturer				HITACHI		HITACHI		HITACHI		HITACHI	
	Assembly	Green Compound (Yes/No)				YES		YES		YES		YES	
	Assembly	Lead-Free (Yes/No)				YES		YES		YES		YES	
	Assembly	Assembly Site				CAT		CAT		CAT		CAT	
	Assembly	Test Site				CAT		CAT		CAT		CAT	
	Product	Max Junction Temp				150°C		150°C		150°C		150°C	
	Product	Max Thermal resistance Junc (case)				15.6°C/W		NA		NA		33°C/W	
	Product	Max Thermal resistance Junc (ambient)				100°C/W		111°C/W		147°C/W		90°C/W	
	Product	DataSheet				DS31449		DS31839		DS31758		DS36196	
Reliability and Characterization Testing													
# in AEC-Q101 (D)	Test	Test Conditions	Duration / Limits	Accept on # Failed/ Sample Size per Lot	# of Lots	X = Test Needed	Results Pass/Fail	QBS Test Completed	Results Pass/Fail	QBS Test Completed	Results Pass/Fail	X = Test Needed	Results Pass/Fail
2	MSL1 Pre-conditioning	Bake 125C	24 Hrs	SMD only, for Test #7, 8, 9 & 10		X	PASS	X	PASS	X	PASS	X	PASS
		Soak 85C, 85% RH	168Hrs			X	PASS	X	PASS	X	PASS		
		IR reflow 260C	3 cycles			X	PASS	X	PASS	X	PASS		
3	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	PER SPEC	All qualification parts submitted for testing		X	PASS	X	PASS	X	PASS	X	PASS
4	PARAMETRIC VERIFICATION (PV)	-55C, 25C, 85C, 125C, 150C	Operating Range, Per Data Sheet	0/25	3	X	PASS	X	PASS	X	PASS	X	PASS
5	HTRB	T=150°C Vd=80%, PER JESD22 A-108	168 Hrs	0/77	3	X	PASS	X	PASS	X	PASS	X	PASS
			500 Hrs	0/77		X	PASS	X	PASS	X	PASS		
			1000 Hrs	0/77		X	PASS	X	PASS	X	PASS		
6	HTGB (Gated Devices only)	T=150°C Vg=100%, PER JESD22 A-108	168 Hrs	0/77	3	X	PASS	X	PASS	X	PASS	X	PASS
			500 Hrs	0/77		X	PASS	X	PASS	X	PASS		
			1000 Hrs	0/77		X	PASS	X	PASS	X	PASS		
7	TC	-65C to 150C PER JESD22A-104	168 Cycles	0/77	3	X	PASS	X	PASS	X	PASS	X	PASS
			500 Cycles	0/77		X	PASS	X	PASS	X	PASS		
			1000 Cycles	0/77		X	PASS	X	PASS	X	PASS		
8	PCT/AC	T=121°C 15PSIG 100%RH	96 Hrs	0/77	3	X	PASS	X	PASS	X	PASS	X	PASS
9	HAST	130C, 85%RH 33.3 psia 80% Bias	96 Hrs	0/77	3	X	PASS	X	PASS	X	PASS	X	PASS
10	IOL	MIL-STD-750 Method 1037 (N/A for TVS)	2520 Cycles	0/77	3	X	PASS	X	PASS	X	PASS	X	PASS
			7560 Cycles	0/77		X	PASS	X	PASS	X	PASS		
			15000 Cycles	0/77		X	PASS	X	PASS	X	PASS		
11	ESD	HBM (AEC-Q101-001)	PER DATA SHEET	0/30	1	X	PASS	X	PASS	X	PASS	X	PASS
		MM (AEC-Q101-002)	PER DATA SHEET	0/30	1	X	PASS	X	PASS	X	PASS	X	PASS
12	DPA	AEC Q101-004 SEC. 4		0/2	1	X	PASS	X	PASS	X	PASS	X	PASS
13	PD	JESD22-B100B	Package Outline	0/30	1	X	PASS	X	PASS	X	PASS	X	PASS
20	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 B-106 (260C @30S)	PER SPEC	0/30	1	X	PASS	X	PASS	X	PASS	X	PASS
21	Solderability	J-STD-002 (245C +0/5S)	5 Seconds	0/10	1	X	PASS	X	PASS	X	PASS	X	PASS
22	THERMAL RESISTANCE (TR)	JESD 24-3, 24-4, 24-6 AS APPROPRIATE	PER SPEC	0/10	1	X	PASS	X	PASS	X	PASS	X	PASS
23	Wire Bond Strength	MIL-STD-750 METHOD 2037 (JESD22-B116B)	Cpk>1.66	0/30	1	X	PASS	X	PASS	X	PASS	X	PASS
24	BOND SHEAR	AEC-Q101-003	Cpk>1.66	0/30	1	X	PASS	X	PASS	X	PASS	X	PASS
25	Die Shear	MIL-STD-750 (2017)	Cpk>1.66	0/30	1	X	PASS	X	PASS	X	PASS	X	PASS
	Remark:												
Summary:													
Submitted By: Ruby Lin, 2014-08-22													
Approved By: Aya Chan (QRA), 2014-08-18													



Certificate of Design, Construction & Qualification

Description: Qualification of SOT26 at CAT for BJT parts

	Category						Qual Device 1		Qual Device 2		Qual Device 3	
	Product	Part Number				ZXT10P20DE6TA		ZXT13P20DE6TA		ZXT13P40DE6		
	Assembly	Package Type				SOT-26		SOT-26		SOT-26		
	Assembly	Package Size				3.0 x 1.6 mm		3.0 x 1.6 mm		3.0 x 1.6 mm		
	Wafer	Die Name(s)				FZT718T3D		ZX5T2D		CZ13P40DD		
	Wafer	Die Size (W/L/Thickness) - After Saw				0.914 x 0.863 mm		1.727 X 0.838 mm		1.803 x 1.0414 mm		
	Wafer	Die Process / Technology				Bipolar Gen3		Bipolar Gen5		Bipolar Gen3		
	Wafer	Wafer FAB/ Location				OFAB/UK		OFAB/UK		KFAB/USA		
	Wafer	Wafer Diameter				6		6		6		
	Wafer	Front Metal Type				AlSiCu		AlSi		AlSiCu		
	Wafer	Front Metal Layer Number/ Thickness				3.5um		6um		3.5um		
	Wafer	Back Metal Type (All Layers)				TiNiAg		TiNiAg		TiNiAg		
	Wafer	Back Metal Thickness (All Layers)				300/2600/5500A		300/2600/5500A		300/2600/5500A		
	Wafer	No of masks Steps				5		5		5		
	Assembly	Die quantity per package (e.g. single or dual dies)				1		1		1		
	Assembly	Die Attach Method (DB Epoxy/Solder Type)				Epoxy		Epoxy		Epoxy		
	Assembly	Die Attach Material/ Supplier				84-1LMISR4/ HENKEL		84-1LMISR4/ HENKEL		84-1LMISR4/ HENKEL		
	Assembly	Bond Wire/Clip Bond Material/ Supplier				Cu/ TANAKA		Cu/ TANAKA		Cu/ TANAKA		
	Assembly	Bond Type (at Die)				Thermosonic		Thermosonic		Thermosonic		
	Assembly	Bond Type (at LF)				Thermosonic		Thermosonic		Thermosonic		
	Assembly	No. of bond over active area				2		2		2		
	Assembly	Glass Transistion Temp				130		130		130		
	Assembly	Terminal Finish (Plating) Material				Matte Sn		Matte Sn		Matte Sn		
	Assembly	Header plating (Die Land Area)				Bare Copper Plated		Bare Copper Plated		Bare Copper Plated		
	Assembly	Wire Diameter				1.5 mil		1.7 mil		1.5 mil		
	Assembly	Leadframe Type				TSOT23-6L C		TSOT23-6L C		TSOT23-6L C		
	Assembly	Leadframe Material				CDA 194		CDA 194		CDA 194		
	Assembly	Lead Frame Manufacturer				ASM		ASM		ASM		
	Assembly	Molding Compound Type				CEL-1702HF9 SK		CEL-1702HF9 SK		CEL-1702HF9 SK		
	Assembly	Mold Compound Material Manufacturer				HITACHI		HITACHI		HITACHI		
	Assembly	Green Compound (Yes/No)				YES		YES		YES		
	Assembly	Lead-Free (Yes/No)				YES		YES		YES		
	Assembly	Assembly Site/ Location				CAT/Chengdu		CAT/Chengdu		CAT/Chengdu		
	Assembly	Test Site/ Location		CAT/Chengdu		CAT/Chengdu		CAT/Chengdu				
	Product	Max Junction Temp		150		150		150				
	Product	Max Thermal resistance Junc (amibent)		113°C/W		113°C/W		113°C/W				
	Product	DataSheet		DS33625		DS33638		DS33693				
		Reliability and Characterization Testing										
# in AEC Q101 (D)	Test	Test Conditions	Duration / Limits	Accept on # Failed/ Sample Size per Lot	# of Lots	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail	
2	MSL1 Pre-conditioning	Bake 125C	24 Hrs	SMD only, for Test #7, 8, 9 & 10	3 Assembly lots	X	PASS	X	PASS	X	PASS	
		Soak 85C, 85% RH	168Hrs			X	PASS	X	PASS	X	PASS	
		IR reflow 260C	3 cycles			X	PASS	X	PASS	X	PASS	
3	EXTERNAL VISUAL (EV)	MIL-STD-750 METHOD 2071	PER SPEC	All qualification parts submitted for testing		X	PASS	X	PASS	X	PASS	
4	PARAMETRIC VERIFICATION (PV)	-55C, 25C, 85C, 125C, 150C	Operating Range, Per Data Sheet	0/25	3 wafer lots	X	PASS	X	PASS	X	PASS	
5	HTRB	Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108	168 Hrs	0/77	3 wafer lots	X	PASS	X	PASS	X	PASS	
			500 Hrs	0/77		X	PASS	X	PASS	X	PASS	
			1000 Hrs	0/77		X	PASS	X	PASS	X	PASS	
7	TC	Ta=-65C to 150C or Max Tj, PER JESD22A-104	168 Cycles	0/77	3 Assembly lots	X	PASS	X	PASS	X	PASS	
			500 Cycles	0/77		X	PASS	X	PASS	X	PASS	
			1000 Cycles	0/77		X	PASS	X	PASS	X	PASS	
8	PCT/AC	Ta=121°C 15PSIG 100%RH; PER JESD22-A102	96 Hrs	0/77	3 Assembly lots	X	PASS	X	PASS	X	PASS	
9	HAST	Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110	96 Hrs	0/77	3 wafer lots	X	PASS	X	PASS	X	PASS	
10	IOL	MIL-STD-750 Method 1037 (N/A for TVS)	2520 Cycles	0/77	3 wafer lots	X	PASS	X	PASS	X	PASS	
			7560 Cycles	0/77		X	PASS	X	PASS	X	PASS	
			15000 Cycles	0/77		X	PASS	X	PASS	X	PASS	
11	ESD	HBM (AEC-Q101-001)	PER DATA SHEET	0/30	1 wafer lot	X	PASS	X	PASS	X	PASS	
		MM (AEC-Q101-002)	PER DATA SHEET	0/30	1 wafer lot	X	PASS	X	PASS	X	PASS	
12	DPA	AEC Q101-004 SEC. 4		0/2	1 Assembly lot	X	PASS	X	PASS	X	PASS	
20	RESISTANCE TO SOLDER HEAT (RSH)	JESD22 A-111 (SMD), B-106 (PTH) (260C @30S)	PER SPEC	0/30	1 Assembly lot	X	PASS	X	PASS	X	PASS	
23	Wire Bond Strength	MIL-STD-750 METHOD 2037 (JESD22-8116B)	Cpk>1.66	0/ min of 5	1 Assembly lot	X	PASS	X	PASS	X	PASS	
24	BOND SHEAR	AEC-Q101-003	Cpk>1.66	0/ min of 5	1 Assembly lot	X	PASS	X	PASS	X	PASS	
25	Die Shear	MIL-STD-750 (2017)	Cpk>1.66	0/5	1 Assembly lot	X	PASS	X	PASS	X	PASS	
29	HS	1000hrs Tamb = 150°C	UK spec	0/45	1 Assembly lot	X	PASS	X	PASS	X	PASS	
	Remark:											
Summary: _____												
Submitted By: Jon Stocker												
Approved By:												