PRODUCT/PROCESS CHANGE NOTIFICATION

PCN APM/07/2904
Notification Date 10/25/2007

New Molding compound for TO- 247 (Samsung Cheil SI7200DXC) in Morocco Plant

APM - APM

Table 1. Change Identification

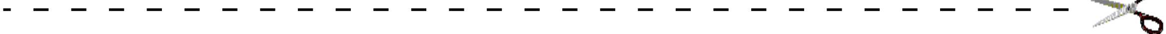
Product Identification (Product Family/Commercial Product)	Power MOSFET,Power BIPOLAR, IGBT
Type of change	Package assembly material change
Reason for change	To improve quality and service
Description of the change	APM Group is ready to announce in addition to the resin currently used, a new molding compound which will be used in the internal Plant of Casablanca . The new molding compound (Samsung Cheil SI7200DXC) will be used in TO-247 assembly process and it will impact Power Mosfet, Power Bipolar and IGBT devices produced in that package. ST ensures the traceability of the new resin at lot level. No change in processes or performances, while in the meantime we will improve quality and service.
Product Line(s) and/or Part Number(s)	See attached
Description of the Qualification Plan	See attached
Change Product Identification	Traceability guaranteed by trace code at lot level
Manufacturing Location(s)	

Table 2. Change Implementation Schedule

Forecasted implementation date for change	15-Jan-2008
Forecasted availabillity date of samples for customer	18-Oct-2007
Forecasted date for **STMicroelectronics** change Qualification Plan results availability	18-Oct-2007
Estimated date of changed product first shipment	24-Jan-2008

Table 3. List of Attachments

Customer Part numbers list	
Qualification Plan results	



Customer Acknowledgement of Receipt	**PCN APM/07/2904**
Please sign and return to STMicroelectronics Sales Office	**Notification Date 10/25/2007**

☐ Qualification Plan Denied	Name:
☐ Qualification Plan Approved	Title:
	Company:
☐ Change Denied	Date:
☐ Change Approved	Signature:

Remark

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DOCUMENT APPROVAL

Name	Function
Di falco, Luca	Division Marketing Manager
Giudice, Maurizio	Division Marketing Manager
Macauda, Michele	Division Marketing Manager
Porto, Michele Claudio	Division Product Manager
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RELIABILITY EVALUATION

ON

TO247 MADE WITH

SI7200DXC (CHEIL) MOLD COMPOUND

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Introduction

This report is aimed to qualify the package TO247 made in ST Casablanca Plant with SI7200DXC (CHEIL).

The Qualification Reliability test trials have been performed in ST Catania Site.

The evaluation results met ST products qualification targets, therefore the TO247 Package version with the mold compound SI7200DXC (CHEIL) is qualified.

Test Vehicles :

Product Lines PowerMos	**Main Sales Types**
EZ98	STW12NK90Z
EZ5L	STW20NK50Z
MD67	STW20NM60

Product Lines PowerBipolar	**Main Sales Types**
BA20	2STW4468
BV67	STW13009

Product Lines IGBT	**Main Sales Types**
IV67	STGW20NC60V
IW68	STGW40NC60WD
F127	STGW30NC120HD

Failure Criteria :

A failed component is a device which becomes inoperative during the test or it fails on meeting the end limits foreseen in the device specification, for one or more than the parameters here below reported :

Parameter PowerMOS

Drain Leakage Current (Idss)
Gate Leakage Current (Igss)
Threshold Voltage (Vgs(th))
Forward On Voltage (Vsd)
Drain Source On Voltage (Vds(on))
Drain Source Breakdown Voltage (Bvdss)

Parameter PowerBIP

Collector Leakage Current (Icbo or Iceo or Ices, etc...)
Emitter Leakage (Iebo)
H_{FE}, Vcesat, Vbesat, Vf
Breakdown Voltage (BVcbo, BVceo,Vbces, Bvebo)

Parameter IGBTs

Collector Leakage Current (Ices)
Gate Leakage Current (Igss)
Threshold Voltage (Vgs(th))
Collector Emitter On Voltage (Vcesat)
Collector Emitter Breakdown Voltage (BVces)

Reliability Evaluation Plan and results

D.U.T. :STW12NK90Z **Line:EZ98** **Package: TO-247**

Test	Conditions	S.S.	Requirement	Results
H.T.S.	TA=150°C	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
T.H.B.	TA=85°C - RH=85% Vbias= 100V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
H.T.R.B.	T.A.= 150°C Vdd = 720 V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
H.T.F.B.	TA=150°C Vgss=30V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
PRESSURE POT	TA=121°C - PA=2Atm	77 x 1 Lot	Parameter deviation within spec. limits at 96 hours.	*No parameter deviation out of spec. limits at 96 hours.*
THERMAL CYCLES AIR TO AIR	TA=-65°C TO 150°C 1 HOUR / CYCLE	77 x 1 Lot	Parameter deviation within spec. limits at 500 cycles.	*No parameter deviation out of spec. limits at 500 cy*
THERMAL FATIGUE	ΔTC=70°C - Pd=24W	77 x 1 Lot	Parameter deviation within spec. limits at 10k cycles.	*No parameter deviation out of spec. limits at 10Kcy.*

Reliability Evaluation Plan and results

D.U.T. : STW20NK50Z **Line: EZ5L** **Package: TO-247**

Test	Conditions	S.S.	Requirement	Results
H.T.S.	TA=150℃	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
T.H.B.	TA=85℃ - RH=85% Vbias= 100V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours..*
H.T.R.B.	T.A.= 150℃ Vdd = 400 V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
H.T.F.B.	TA=150℃ Vgss=30V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours..*
PRESSURE POT	TA=121℃ - PA=2Atm	77 x 1 Lot	Parameter deviation within spec. limits at 96 hours.	*No parameter deviation out of spec. limits at 96.*
THERMAL CYCLES AIR TO AIR	TA=-65℃ TO 150℃ 1 HOUR / CYCLE	77 x 1 Lot	Parameter deviation within spec. limits at 500 cycles.	*No parameter deviation out of spec. limits at 500 cycles*
THERMAL FATIGUE	ΔTC=70℃ - Pd=24W	77 x 1 Lot	Parameter deviation within spec. limits at 10k cycles.	No parameter deviation at 10Kcy.

Reliability Evaluation Plan and results

D.U.T. :STW20NM60 Line: MD67 Package: TO-247

Test	Conditions	S.S.	Requirement	Results
H.T.S.	TA=150°C	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
T.H.B.	TA=85°C - RH=85% Vbias= 100V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours..*
H.T.R.B.	T.A.= 150°C Vdd = 480 V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
H.T.F.B.	TA=150°C Vgss=30V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours..*
PRESSURE POT	TA=121°C - PA=2Atm	77 x 1 Lot	Parameter deviation within spec. limits at 96 hours.	*No parameter deviation out of spec. limits at 96.*
THERMAL CYCLES AIR TO AIR	TA=-65°C TO 150°C 1 HOUR / CYCLE	77 x 1 Lot	Parameter deviation within spec. limits at 500 cycles.	*No parameter deviation out of spec. limits at 500 cycles*
THERMAL FATIGUE	ΔTC=70°C - Pd=24W	77 x 1 Lot	Parameter deviation within spec. limits at 10k cycles.	No parameter deviation at 10Kcy.

Reliability Evaluation Plan and results

D.U.T.: 2STW4468 **Line: BA20** **Package: TO-247**

Test	Conditions	S.S.	Requirement	Results
H.T.S.	TA=150°C	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	No parameter deviation out of spec. limits at 1000 hours.
T.H.B.	TA=85°C - RH=85% Vbias= 100V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	No parameter deviation out of spec. limits at 1000 hours..
H.T.R.B.	T.A.=150°C Vdd=160V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	No parameter deviation out of spec. limits at 1000 hours.
PRESSURE POT	TA=121°C - PA=2Atm	77 x 1 Lot	Parameter deviation within spec. limits at 96 hours.	*No parameter deviation out of spec. limits at 96.*
THERMAL CYCLES AIR TO AIR	TA=-65°C TO 150°C 1 HOUR / CYCLE	77 x 1 Lot	Parameter deviation within spec. limits at 500 cycles.	*No parameter deviation out of spec. limits at 500 cycles*
THERMAL FATIGUE	ΔTC=70°C - Pd=24W	77 x 1 Lot	Parameter deviation within spec. limits at 10k cycles.	No parameter deviation at 10Kcy.

Reliability Evaluation Plan and results

D.U.T.: STW13009 Line: BV67 Package: TO-247

Test	Conditions	S.S.	Requirement	Results
H.T.S.	TA=150℃	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	No parameter deviation out of spec. limits at 1000 hours.
T.H.B.	TA=85℃ - RH=85% Vbias= 100V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	No parameter deviation out of spec. limits at 1000 hours..
H.T.R.B.	T.A.=150℃ Vbias=560V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	No parameter deviation out of spec. limits at 1000 hours.
PRESSURE POT	TA=121℃ - PA=2Atm	77 x 1 Lot	Parameter deviation within spec. limits at 96 hours.	*No parameter deviation out of spec. limits at 96.*
THERMAL CYCLES AIR TO AIR	TA=-65℃ TO 150℃ 1 HOUR / CYCLE	77 x 1 Lot	Parameter deviation within spec. limits at 500 cycles.	*No parameter deviation out of spec. limits at 500 cycles*
THERMAL FATIGUE	ΔTC=70℃ - Pd=24W	77 x 1 Lot	Parameter deviation within spec. limits at 10k cycles.	No parameter deviation at 10Kcy.

Reliability Evaluation Plan and results

D.U.T.: STGW20NC60V Line: BV67 Package: TO-247

Test	Conditions	S.S.	Requirement	Results
H.T.S	TA=150℃	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
T.H.B.	TA=85℃ - RH=85% Vbias = 100V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
H.T.R.B.	T.A.=150℃ ; Vces=480 V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
H.T.F.B.	TA = 150℃ Vges= 20V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
PRESSURE POT	TA=121℃ - PA=2Atm	77 x 1 Lot	Parameter deviation within spec. limits at 168 hours.	*No parameter deviation out of spec. limits at 168 hours.*
THERMAL CYCLES AIR TO AIR	TA=-65℃ TO +150℃ 1 HOUR / CYCLE	77 x 1 Lot	Parameter deviation within spec. limits at 500 cycles.	*No parameter deviation out of spec. limits at 500 cycles.*
THERMAL FATIGUE	ΔTC=70℃ - Pd=24W	77 x 1 Lot	Parameter deviation within spec. limits at 10k cycles.	*No parameter deviation out of spec. limits at 10 Kcycles.*

Reliability Evaluation Plan and results

D.U.T.: STGW40NC60WD Line: IW68 Package: TO-247

Test	Conditions	S.S.	Requirement	Results
H.T.S	TA=150℃	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
T.H.B.	TA=85℃ - RH=85% Vbias = 100V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
H.T.R.B.	T.A.=150℃ ; Vces=480 V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
H.T.F.B.	TA = 150℃ Vges= 30V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
PRESSURE POT	TA=121℃ - PA=2Atm	77 x 1 Lot	Parameter deviation within spec. limits at 168 hours.	*No parameter deviation out of spec. limits at 168 hours.*
THERMAL CYCLES AIR TO AIR	TA=-65℃ TO +150℃ 1 HOUR / CYCLE	77 x 1 Lot	Parameter deviation within spec. limits at 500 cycles.	*No parameter deviation out of spec. limits at 500 cycles.*
THERMAL FATIGUE	ΔTC=70℃ - Pd=24W	77 x 1 Lot	Parameter deviation within spec. limits at 10k cycles.	*No parameter deviation out of spec. limits at 10 Kcycles.*

Reliability Evaluation Plan and results

D.U.T.: STGW30NC120HD Line: F127 Package: TO-247

Test	Conditions	S.S.	Requirement	Results
H.T.S	TA=150℃	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
T.H.B.	TA=85℃ - RH=85% Vbias = 100V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
H.T.R.B.	T.A.=150℃ ; Vces=960 V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
H.T.F.B.	TA = 150℃ Vges= 20V	77 x 1 Lot	Parameter deviation within spec. limits at 1000 hours.	*No parameter deviation out of spec. limits at 1000 hours.*
PRESSURE POT	TA=121℃ - PA=2Atm	77 x 1 Lot	Parameter deviation within spec. limits at 96 hours.	*No parameter deviation out of spec. limits at 96 hours.*
THERMAL CYCLES AIR TO AIR	TA=-65℃ TO +150℃ 1 HOUR / CYCLE	77 x 1 Lot	Parameter deviation within spec. limits at 500 cycles.	*No parameter deviation out of spec. limits at 500 cycles.*
THERMAL FATIGUE	ΔTC=70℃ - Pd=24W	77 x 1 Lot	Parameter deviation within spec. limits at 10k cycles.	*No parameter deviation out of spec. limits at 10 Kcycles.*

Technological Characteristics

D.U.T. :STW12NK90Z   Line:EZ98   Package: TO-247

DIE	*Technology:* *Material:* *Metallization – Front :* *- Back :*	SuperMESH™Power MOSFET Silicon Al/Si (1%) Ti-Ni-Au	*Passivation :* *Dimensions :*	Nitride 7830 x 5670 um²
DIE ATTACH	Soft Solder	**FRAME**	*Frame and lead material:* *Frame coating :* *Lead coating :*	Raw copper Selective Ni/NiP Sn 100%
WIRE BOND	Ultrasonic	**WIRE**	*Material :* *Diameter :*	Gate: Al/Mg Source: Al 5 mils Gate 10 mils Source
SEALING	Molding	**PACKAGING**	*Material :*	Epoxy Resin

PRODUCTION PLACES: WAFER PROCESSING : SINGAPORE
ASSEMBLY LOCATION : CASABLANCA
Q.A. LOCATION : CASABLANCA

Technological Characteristics

D.U.T. : STW20NK50Z   Line: EZ5L   Package: TO-247

DIE	*Technology:* *Material:* *Metallization – Front :* *- Back :*	SuperMESH™Power MOSFET Silicon Al/Si (1%) Ti-Ni-Au	*Passivation :* *Dimensions :*	Nitride 6840 x 5060 um²
DIE ATTACH	Soft Solder	**FRAME**	*Frame and lead material:* *Frame coating :* *Lead coating :*	Raw copper Selective Ni/NiP Sn 100%
WIRE BOND	Ultrasonic	**WIRE**	*Material :* *Diameter :*	Gate: Al/Mg Source: Al 5 mils Gate 10 mils Source
SEALING	Molding	**PACKAGING**	*Material :*	Epoxy Resin

PRODUCTION PLACES: WAFER PROCESSING : SINGAPORE
ASSEMBLY LOCATION : CASABLANCA
Q.A. LOCATION : CASABLANCA

Technological Characteristics

D.U.T. :STW20NM60 Line: MD67 Package: TO-247

DIE	*Technology:*	MDmesh I Power MOSFET		
	Material:	Silicon	*Passivation :*	Nitride
	Metallization – Front :	Al/Si (1%)	*Dimensions :*	5690 x 4650 um²
	- Back :	Ti-Ni-Au		
DIE ATTACH	Soft Solder	**FRAME**	*Frame and lead material:*	Raw copper
			Frame coating :	Selective Ni/NiP
			Lead coating :	Sn 100%
WIRE BOND	Ultrasonic	**WIRE**	*Material :*	Gate: Al/Mg Source: Al
			Diameter :	5 mils Gate 10 mils Source
SEALING	Molding	**PACKAGING**	*Material :*	Epoxy Resin

PRODUCTION PLACES: WAFER PROCESSING : SINGAPORE
ASSEMBLY LOCATION : CASABLANCA
Q.A. LOCATION : CASABLANCA

Technological Characteristics

D.U.T.: 2STW4468 **Line: BA20** **Package: TO-247**

DIE	*Technology:* *Material:* *Metallization – Front :* *- Back :*	Planar Low Voltage NPN Silicon Al/Si (1%) AuAs-Cr-Ni-Au	*Passivation :* *Dimensions :*	P-Vapox 4380 x 4380 um²
DIE ATTACH	Soft Solder	**FRAME**	*Frame and lead material:* *Frame coating :* *Lead coating :*	Copper Ni/NiP Sn 100%
WIRE BOND	Ultrasonic	**WIRE**	*Material :* *Diameter :*	Base Al Emitter Al Base 10mils Emitter 10mils
SEALING	Molding	**PACKAGING**	*Material :*	Epoxy Resin

PRODUCTION PLACES: WAFER PROCESSING : SINGAPORE
ASSEMBLY LOCATION : CASABLANCA
Q.A. LOCATION : CASABLANCA

Technological Characteristics

D.U.T.: STW13009 Line: BV67 Package: TO-247

DIE	*Technology:* *Material:* *Metallization – Front :* *- Back :*	Planar High Voltage NPN Silicon Al/Si (1%) Ti/Ni/Au	 *Passivation :* *Dimensions :*	 P-vapox 4490 x 4240 um²
DIE ATTACH	Soft Solder	**FRAME**	Frame and lead material: Frame coating : Lead coating :	Copper Ni/NiP Sn 100%
WIRE BOND	Ultrasonic	**WIRE**	*Material :* *Diameter :*	Base Al/Mg Emitter Al Base 5 mils Emitter 15mils
SEALING	Molding	**PACKAGING**	*Material :*	Epoxy Resin

PRODUCTION PLACES: WAFER PROCESSING : SINGAPORE
ASSEMBLY LOCATION : CASABLANCA
Q.A. LOCATION : CASABLANCA

Technological Characteristics

D.U.T.: STGW20NC60V Line: IV67 Package: TO-247

DIE	*Technology:* N- Channel Enhancement Mode IGBT *Material:* Silicon *Passivation* : Nitride *Metallization – Front :* Al/Si (1%) *Dimensions* : 5610X4620 um² *- Back :* Ti-Ni-Au			
DIE ATTACH	Soft Solder	**FRAME**	*Frame and lead material:* *Frame coating :* *Lead coating :*	Copper Copper Ni/NiP
WIRE BOND	Ultrasonic	**WIRE**	*Material :* *Diameter :*	Gate Al/Mg Emitter Al Gate 5 mils Emitter 15mils
SEALING	Molding	**PACKAGING**	*Material :*	Epoxy Resin

PRODUCTION PLACES: WAFER PROCESSING : SINGAPORE
ASSEMBLY LOCATION : CASABLANCA
Q.A. LOCATION : CASABLANCA

Technological Characteristics

D.U.T.: STGW40NC60WD Line: IW68 Package: TO-247

DIE	*Technology:* N- Channel Enhancement Mode IGBT *Material:* Silicon *Metallization – Front :* Al/Si (1%) *- Back :* Ti-Ni-Au		*Passivation :* *Dimensions :*	Nitride 5320X6600 um²
DIE ATTACH	Soft Solder	**FRAME**	*Frame and lead material:* *Frame coating :* *Lead coating :*	Copper Copper Ni/NiP
WIRE BOND	Ultrasonic	**WIRE**	*Material :* *Diameter :*	Gate Al/Mg Emitter Al Gate 5 mils Emitter 15mils
SEALING	Molding	**PACKAGING**	*Material :*	Epoxy Resin

PRODUCTION PLACES: WAFER PROCESSING : CATANIA
ASSEMBLY LOCATION : CASABLANCA
Q.A. LOCATION : CASABLANCA

Technological Characteristics

D.U.T.: STGW30NC120HD Line: F127 Package: TO-247

DIE	*Technology:* PowerMESH™ IGBT *Material:* Silicon *Metallization – Front :* Al/Si (1%) *- Back :* Ti-Ni-Au		*Passivation :* Nitride *Dimensions :*	
DIE ATTACH	Soft Solder	**FRAME**	*Frame and lead material:* *Frame coating :* *Lead coating :*	Copper Copper Ni/NiP
WIRE BOND	Ultrasonic	**WIRE**	*Material :* *Diameter :*	Gate Al/Mg Emitter Al Gate 5 mils Emitter 15mils
SEALING	Molding	**PACKAGING**	*Material :*	Epoxy Resin

PRODUCTION PLACES: WAFER PROCESSING : CATANIA
ASSEMBLY LOCATION : CASABLANCA
Q.A. LOCATION : CASABLANCA

Reliability Test Description

High Temperature Reverse Bias (HTRB)

This test is performed in order to demonstrate the quality and reliability of devices subjected to an elevated temperature and simultaneously reverse biased. The purpose of this test is to detect surface defects such as poor passivation, presence of contaminants, etc...

High Temperature Forward Bias (HTFB) (HTGB)

This test is performed in order to demonstrate the quality and reliability of devices subjected to an elevated temperature and simultaneously forward gate biased. The purpose of this test is to detect surface and gate oxide defects.

High Temperature Storage (HTS)

This stress test is performed to check the device life in a high temperature ambient. Specimens are put for a period of time inside a stove in free air. Detectable failure mechanisms are presence of contaminants and metal corrosion.

Thermal Cycles/Shocks

The purpose of this test is to determine the resistance of devices to exposure to extreme changes in temperature. Specimens are first placed in a suitable environment at a low temperature and then transferred to one at high temperature. Effects of thermal cycles/shocks include cracking of die, breaking of wire bonding, mechanical damage to the device case.

Reliability Test Description (continued)

Temperature Humidity Bias (THB)

This test is performed to check the device life in a high humidity ambient. Specimens are subjected to a permanent bias in a climatic chamber in the presence of steam. Detectable failure mechanisms are metal corrosion and moulding defects.

Pressure Pot

This test is performed in order to check device life in a high humidity ambient in an accelerated way. Specimens are subjected for a period of time inside an autoclave in the presence of steam and pressure. Detectable failure mechanism is metal corrosion.

Thermal Fatigue

This test is performed to demonstrate the quality and reliability of devices exposed to cyclic variation in electrical stress between "on" and "off" conditions and resultant cyclic variation in device and case temperatures (thermo-mechanical stress). The purpose of this test is to detect assembly defects : improper die-attach, bonding weakness and thermal mismatch among various components of the package.

Environmental Sequence

The purpose of this test is to study the influence of corrosion mechanism when the die/package system has already been stressed by temperature cycling.

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