MICROCHIP

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: RMES-31VQKE033

Date:
May 24, 2019

Qualification of GTBF as a new assembly site for selected products available in 3L TO-220 package using 277 x 221 mils paddle size.

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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of GTBF as a new assembly site for selected products available in 3L TO-220 package using 277 x 221 mils paddle size.
CN	ES289548
QUAL ID	Q19057 Rev. A
MP CODE	630039F8XB00
Part No.	DN2540N5-G
Bonding No.	BDM-002084 Rev. A
CCB No.	3458
Package	
Type	3L TO-220
Die thickness	11 mils
Die size	43.40 x 43.40 mils
Lead Frame	
Paddle size	277 x 221 mils
Material	LY80
Surface	Spot Ag
Process	Stamped
Lead Lock	Yes
Part Number	A1-TO220-3-3CFAGLC
Die attach material	
Epoxy	CRM-1800
Wire	Au wire
Mold Compound	EME-G600
Plating Composition	Matte Tin

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
GTBF194900032.000	TMPE218115653.600	19104MC
GTBF195000001.000	TMPE218115653.600	19114ME
GTBF195000002.000	TMPE218115653.600	19114PB

Result [X] Pass [ ] Fail [ ] ____________________

3L TO-220 assembled by GTBF pass reliability test per QCI-39000.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Electrical Test	**Electrical Test:**+25°C System: IMPACT	JESD22-A113	693(0)	693		Good Devices
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H Inspection: External crack inspection all units under 40X Optical magnification	JESD22-A104		231		
	Electrical Test: + 25°C System: IMPACT		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (> 4.0 grams)		15 (0)	0/15	Pass	
	Bond Shear (18.00 grams)		15 (0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		
	Electrical Test: +25°C System: IMPACT		231(0)	0/231	Pass	77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 42.0 Volts System: HAST 6000X	JESD22-A110		231		
	Electrical Test: +25°C System: IMPACT		231(0)	0/231	Pass	77 units / lot
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: SHEL LAB	JESD22-A103		45		45 units
	Electrical Test: +25°C System: IMPACT		45(0)	0/45	Pass	
Solderability **Temp 245°C**	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000 **Solder Dipping**: Solder Temp.245°C Solder material: Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B-102E	22 (0)	22 22 0/22	Pass	
Bond Strength **Data Assembly**	Wire Pull (> 4.0 grams)	M2011 JESD22-B116	30 (0) Wires	0/30	Pass	
	Bond Shear (18.00 grams)		30 (0) bonds	0/30	Pass	