



MICROCHIP

QUALIFICATION REPORT
RELIABILITY LABORATORY

PCN #: JAON-07PFIM777

Date
May 24, 2016

**Qualification of MTAI assembly site as an additional
site for selected Supertex products available in 5L
SOT-23 package.**

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MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MTAI assembly site as an additional site for selected Supertex products available in 5L SOT-23 package.
CN	BC160904
QUAL ID	Q16025
MP CODE	63051QC7XA00
Part No.	DN1509K1-G
Lot No.	MTAI163902054.000
Bonding No.	BDM-000735 Rev. D
CCB No.	1832

Package

Type	5L SOT-23
Die thickness	11 mils
Die size	35.5 x 35.5 mils

Lead Frame

Paddle size	66 x48 mils
Material	CDA194
Lead Lock	No
Part Number	10100502
Treatment	None

Die attach material

Epoxy (Silver paste)	8060T
Wire	Au wire
Mold Compound	G600V
Plating Composition	Matte Tin



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI163902054.000	TMPE216134823.140	1552SY4

Result

☒ Pass ☐ Fail ☐ _____

5L SOT-23 Fab 2 wafer assembled by MTAI pass reliability test per Supertex standard qual plan for SMD Package. This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020D standard.

Prepared By: Thinnapol Date: May 24, 2016 (Sr.Reliability Engineer)

(Mr.Thinnapol Nakkasun)

Approved By: Som Date: May 24, 2016 (Reliability Manager)

(Mr. Somnuek Thongprasert)

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard / Method	Qty. (Acc.)	Def/SS	Result	Remarks
Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 (IPC/JEDEC J-STD-020D)	IPC/JED EC J- STD- 020D	25	0/25	Pass	

<u>Precondition Prior Perform Reliability Tests (At MSL Level1)</u>	Electrical Test :+25°C System: IMPACT	JESD22- A113	250(0)	250		Good Devices
	Bake 150°C, 24 hrs System: CHINEE			250		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			250		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			250		
	Electrical Test :+25°C System: IMPACT			0/250	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
TEST 1: ASSEMBLY PROCESS CHARACTERIZATION						
1a. Die Shear	Die Shear (Minimum: 2.5 Kgf)	MIL-STD-883J-M2019.9	5(0)	0/5 Ppk=2.03	Pass	
1b. D/A Bondline Thickness	Epoxy Cured BLT (Dry) Control 0.6~0.9 mil	Per assembly site Specs	5(0)	0/5	Pass	
1c. Bond Shear	Bond Shear (Minimum: 18.0 grams)	JESD22-B116A	30 (0) Wires	0/30	Pass	
1d. Wire Bond Pull	Wire Pull (Minimum:4.0 grams)	MIL-STD-883J-M2011.9 Condition C or D	30 (0) Wires	0/30	Pass	
1e.X-ray	N/A	X-Ray	3 (0)	0/3	Pass	1 shot /lot
TEST 2: FINAL TEST						
Post-Assembly Final Test Yield	Per device spec Electrical Test: Post Test at MTAI	Per device spec >85% test yield	1026(0)	27/1026	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
TEST 3: PACKAGE INTEGRITY AND MECHANICAL TEST						
Visual Examination	Stress Condition: Supertex spec#QCGP-1001	Supertex spec#QCGP-1001	315(0)	0/315	Pass	315 units/lot Test Location: MTAI
TEST 4: PACKAGE INTEGRITY AND MECHANICAL TEST						
4a. Precondition Prior Perform Reliability Tests (At MSL Level 1)	Stress Condition: -Bake 150°C, 24 hrs System: CHINEE -85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH -3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 Electrical Test: Post test at MTAI	JESD22-A113F	250(0)	0/250	Pass	Test Location: Reliability MTAI
4b. Auto Clave	Stress Condition: 1) for SMD,MSL pre-conditioned prior to test 2) 121C/100%RH / 15PSIG / 168 hrs Electrical Test: Post test at MMT	JESD22-A102D	45 (0)	0/45	Pass	Test Location: Reliability MMT
4c. Thermal Shock	Stress Condition: 1) for SMD,MSL pre-conditioned prior to test 2) Cond B:-55 to 125C / 200 cyc Electrical Test: Post test at MMT	MIL-STD-883HM1011.9	45 (0)	0/45	Pass	45 units/lot Test Location: Reliability MMT
4d.Temperature Cycling	Stress Condition: 1) for SMD,MSL pre-conditioned prior to test 2) Cond C:-65 to 150C / 500 cyc Electrical Test: Post test at MTAI	MIL-STD-883HM1010.8	45 (0)	0/45	Pass	45 units/lot Test Location: Reliability MTAI
4.e HAST	Stress Condition: +130 °C/85%RH, 96 hrs. System: HAST 6000X Electrical Test: +25 °C System: IMPACT	JESD22-A110	45(0)	0/45 0/45	Pass Pass	Test Location: Reliability MTAI

JAON-07PFIM777 - CCB 1832 Final Notice: Qualification of MTAI assembly site as an additional site for selected Supertex products available in 5L SOT-23 package.

Affected Catalog Part Numbers (CPN)

PCN_JAON-07PFIM777
CATALOG_PART_NBR
DN1509K1-G
HV7800K1-G
HV7801K1-G
LND01K1-G
LP1030DK1-G