Product Change Notification - JAON-20ZEJE608

Date: 27 Feb 2015

Product Category:

Notification subject: CCB 1432.14, 1432.15, 1432.16 Final Notice: Qualification of all Supertex products in 3L SOT-23 package at MTAI Assembly site.

Notification text:

PCN Status:

Final notification

Microchip Parts Affected:

See attachments of affected catalog part numbers (CPN) labeled as…

PCN_JAON-20ZEJE608_Affected_CPN.xls

PCN_JAON-20ZEJE608_Affected_CPN.pdf

Description of Change:

Qualification of all Supertex products in 3L SOT-23 package at MTAI Assembly site.

Pre Change:

Assembled at NSEB (UTL) assembly site.

Post Change:

Assembled at MTAI and NSEB (UTL) assembly site.

Impacts to Data Sheet:

None

Reason for Change:

To Improve productivity as part of the integration of Supertex and Microchip.

Change Implementation Status:

In Progress

Estimated First Ship Date:

February 23, 2015 (date code: 1509)

NOTE: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Markings to Distinguish Revised from Unrevised Devices:

Traceability code

Revision History:

July 22, 2014: Issued initial notification.

August 07, 2014: Updated Affected CPN list.

January 29, 2015: Issued final notification. Attached the qualification report. Updated the description and scope to include all Supertex products in 3L SOT-23 package. Revised the estimated first ship date from October 15, 2014 to February 23, 2015.

February 27, 2015: Updated the subject to include CCB 1432.15 and 1432.16. Attached the second qualification report using 8060T die attach material (the first qualification report attached last January 29 used TS3332LD die attach material).

Attachment(s): PCN_JAON-20ZEJE608_Qual_Report_TS3332LD DA.pdf PCN_JAON-20ZEJE608_Qual_Report_8060T DA.pdf PCN_JAON-20ZEJE608_Affected_CPN.pdf PCN_JAON-20ZEJE608_Affected_CPN.xls

Please contact your local Microchip sales office with questions or concerns regarding this notification.

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PCN_JAON-20ZEJE608
CATALOG_PART_NBR
2N7002-G
DN3135K1-G
LND150K1-G
LND250K1-G
TN2106K1-G
TN2124K1-G
TN2124K1-G-D545
TN2130K1-G
TN5325K1-G
TN5335K1-G
TN5335K1-G-D589
TP0610T-G
TP2104K1-G
TP5322K1-G
TP5335K1-G
TP5335K1-G-D588
VN2110K1-G
VP2110K1-G
VP2110K1-G-D537

QUALIFICATION REPORT
RELIABILITY LABORATORY

PCN #: JAON-20ZEJE608

Date
Feb 4, 2015

Qualification of all Supertex products in 3L SOT-23 package at MTAI Assembly site

Distribution

Somnuek T.	Rangsun K.
V.Danginis	A. Navarro
Wichai K.	J. Fernandez
Arnel M.	S. Kelsall
Chaweng W.	S. Iliev
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MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of all Supertex products in 3L SOT-23 package at MTAI Assembly site
CN	BC141978
QUAL ID	Q14176
MP CODE	63002QC6XA00
Part No.	TN5325K1-G
Lot No.	MTAI153502819.000
Bonding No.	BDM-000674 rev.A
CCB No.	1432.14

Package

Type	3L SOT-23
Die thickness	8 mils
Die size	55.90 x 29.9 mils

Lead Frame

Paddle size	64 x38 mils (ASM-Singapore)
Material	C194
Surface	Ag Spot Plated
Process	Stamped
Lead Lock	Yes
Part Number	10100301
Treatment	None

Die attach material

Epoxy (Silver paste)	8060T (Henkel-USA)
Wire	Au wire (MKE-Korea)
Mold Compound	G600V (Sumitomo-Japan)
Plating Composition	Matte Tin

MICROCHIP

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI153502819.000	TMPE215065380.210	1448HHJ

Result [X] Pass [ ] Fail [ ] _____

3L SOT-23 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.

Note: Risk release qual report due to THB is on going

Prepared By: _____ **Date:** February 04, 2015 **(Reliability Engineer)**

(Mr.Wittawat Premniwat)

Approved By: _____ **Date:** February 04, 2015 **(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/JEDEC J-STD-020D	25	0/25	Pass	

<u>Precondition Prior Perform Reliability Tests</u> (At MSL Level 1)	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 : Post test Supertex Hongkong			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-M2019.8	5(0)	0/5	Pass	
1b. Bond Shear	Bond Shear (Minimum: 18.00 grams)	JESD22-B116A	30 (0) Wires	0/30	Pass	
1c. Wire Bond Pull	Wire Pull (Minimum: 4.0 grams)	MIL-STD-883J-M2011.9 Condition C or D	30 (0) Wires	0/30	Pass	
1d.X-ray	N/A	X-Ray	2 (0)	0/2	Pass	
1e. Terminal Plating Thickness	N/A	XRF or else	5 (0)	0/5 Units	Pass	
1f. Terminal Plating /Solder Ball Material	N/A	XRF,RoHS report or else	5 (0)	0/5 Units	Pass	
TEST 2: FINAL TEST						
Post-Assembly Final Test Yield	Per device spec Electrical Test: Supertex HK	Per device spec >85% test yield	1000 (0)	4/996	Pass	Test Location: Supertex Hongkong

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
TEST 3: PACKAGE INTEGRITY AND MECHANICAL TEST						
3a. Visual Examination	**Stress Condition:** Supertex spec#QCGP-1001	Supertex spec#QCGP-1001	315(0)	0/315	Pass	Test Location: Supertex Hongkong
3b. Physical Dimension	**Stress Condition:** Post Assembly	JESD22-B100B	8(0)	0/8	Pass	Test Location: Supertex Hongkong
3c. Solderability (Tin-alloy)	**Stress Condition:** 1) Condition C (Tin-alloy):8 hrs. Steam age; 2) Test Method 1:Dip&Look Test; Group 1:Test to SnPb solder (215+/-5 C); Group 2:Test to Pb-free solder (245+/-5C);	JESD22-B102E	8(0) 8(0)	0/8 0/8	Pass Pass	Test Location: Supertex Hongkong

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
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 Supertex HK	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 Supertex HK	JESD22-A102D	45 (0)	0/45	Pass	Test Location: Supertex Hongkong
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 Supertex HK	MIL-STD-883HM1011.9	50(0)	0/50	Pass	Test Location: 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 Supertex HK	MIL-STD-883HM1010.8	50(0)	0/50	Pass	Test Location: Reliability MTAI
4e. Temperature Humidity Bias (THB)	**Stress Condition:** 1) for SMD,MSL pre-conditioned prior to test 2) biased @ 85C / 85%RH for 168 / 500 1000 hrs Electrical Test: Post test at Supertex HK	JESD22-A101C	45(0)	-	On going	Test Location: Supertex Sunnyvale USA

QUALIFICATION REPORT
RELIABILITY LABORATORY

PCN #: JAON-20ZEJE608

Date
January 21, 2015

Qualification of all Supertex products in 3L SOT-23 package at MTAI Assembly site

Distribution

Somnuek T.	Rangsun K.
V.Danginis	A. Navarro
Wichai K.	J. Fernandez
Arnel M.	S. Kelsall
Chaweng W.	S. Iliev
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MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of all Supertex products in 3L SOT-23 package at MTAI Assembly site
CN	BC141979
QUAL ID	Q14177
MP CODE	63002QC6XA00
Part No.	TN5325K1-G
Lot No.	MTAI153402875.000
Bonding No.	BDM-000675 rev A
CCB No.	1432.14

Package

Type	3L SOT-23
Die thickness	8 mils
Die size	55.90 x 29.9 mils

Lead Frame

Paddle size	64 x38 mils (ASM-Singapore)
Material	C194
Surface	Ag Spot Plated
Process	Stamped
Lead Lock	Yes
Part Number	10100301
Treatment	None

Die attach material

Epoxy (Silver paste)	TS3332LD (Tanaka-Japan)
Wire	Au wire (MKE-Korea)
Mold Compound	G600V (Sumitomo-Japan)
Plating Composition	Matte Tin

MICROCHIP

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI153402875.000	TMPE215065380.210	14478P8

Result [X] Pass [ ] Fail [ ] _____

3L SOT-23 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.

Note: Risk release qual report due to THB is on going

Prepared By: _____ **Date:** January 21, 2015 **(Reliability Engineer)**

(Mr.Wittawat Premniwat)

Approved By: _____ **Date:** January 21, 2015 **(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/JEDEC J-STD-020D	25	0/25	Pass	

<u>Precondition Prior Perform Reliability Tests</u> (At MSL Level 1)	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 : Post test Supertex Hongkong			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-M2019.8	5 (0)	0/5	Pass	
1b. Bond Shear	Bond Shear (Minimum: 18.00 grams)	JESD22-B116A	30 (0) Wires	0/30	Pass	
1c. Wire Bond Pull	Wire Pull (Minimum: 4.0 grams)	MIL-STD-883J-M2011.9 Condition C or D	30 (0) Wires	0/30	Pass	
1d.X-ray	N/A	X-Ray			Pass	
1e. Terminal Plating Thickness	N/A	XRF or else	5(0)	0/5 Units	Pass	
1f. Terminal Plating /Solder	N/A	RF,RoHS report or else	5(0)	0/5 Units	Pass	
TEST 2: FINAL TEST						
Post-Assembly Final Test Yield	Per device spec Electrical Test: Supertex HK	Per device spec >85% test yield	1000 (0)	45/955	Pass	Test Location: Supertex Hongkong

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
TEST 3: PACKAGE INTEGRITY AND MECHANICAL TEST						
3a. Visual Examination	**Stress Condition:** Supertex spec#QCGP-1001	Supertex spec#QCGP-1001	315(0)	0/315	Pass	Test Location: Supertex Hongkong
3b. Physical Dimension	**Stress Condition:** Post Assembly	JESD22-B100B	8(0)	0/8	Pass	Test Location: Supertex Hongkong
3c. Solderability (Tin-alloy)	**Stress Condition:** 1) Condition C (Tin-alloy):8 hrs. Steam age; 2) Test Method 1:Dip&Look Test; Group 1:Test to SnPb solder (215+/-5 C); Group 2:Test to Pb-free solder (245+/-5C);	JESD22-B102E	8(0) 8(0)	0/8 0/8	Pass Pass	Test Location: Supertex Hongkong

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
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 Supertex HK	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 Supertex HK	JESD22-A102D	45 (0)	0/45	Pass	Test Location: Supertex Hongkong
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 Supertex HK	MIL-STD-883HM1011.9	50(0)	0/50	Pass	Test Location: 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 Supertex HK	MIL-STD-883HM1010.8	50(0)	0/50	Pass	Test Location: Reliability MTAI
4e. Temperature Humidity Bias (THB)	**Stress Condition:** 1) for SMD,MSL pre-conditioned prior to test 2) biased @ 85C / 85%RH for 168 / 500 1000 hrs Electrical Test: Post test at Supertex HK	JESD22-A101C	45(0)	-	On going	Test Location: Supertex Sunnyvale USA