QUALIFICATION REPORT

RELIABILITY LABORATORY

PCN#: JAON-25KYQT864

Date
November 24, 2014

Qualification of palladium coated copper (PdCu) bond wire at MMT assembly site for 120K wafer technology in 14L TSSOP package. The 90K and 121K wafer technology and 8L TSSOP package will qualify by similarity.

Distribution

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

Microchip Technology (Thailand) Co., Ltd.
14 Moo 1 T.Wangtakien A. Muangchacherngsao,
Chacherngsao, Thailand, 24000
Tel. (+66 38) 857119-45, 857311-19 ext. 1231
Fax (+66 38) 857149-50

PACKAGE QUALIFICATION REPORT

Purpose	To qualify 14L TSSOP (4.4mm) package 120K wafer technology using 0.8 mil PdCu wire at MMT (ALPH) Assembly
CN	BC141214
QUAL ID	Q14116
MP CODE	ABBL14D4XA00
Part No.	MCP6234-E/ST
Bonding No.	BDM-000463 Rev. B
CCB No.:	1381.01
Package	
Type	14L TSSOP
Package size	4.4 mm
Die thickness	11 mils
Die size	53.2 x 43.5 mils
Lead Frame	
Paddle size	118 x 153 mils (ASM-Singapore)
Material	C7025
Surface	Bare Cu
Process	Stamped
Lead Lock	No
Part Number	10101406
Treatment	BOT
Die attach material	
Epoxy	2200D (Henkel-Korea)
Wire	PdCu wire (Nippon-Japan)
Mold Compound	G600V (Sumitomo-Singapore)
Plating Composition	Matte Tin

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-151900011.000	TMPE214499585.300	1432RCK
MMT-151900012.000	TMPE214499585.300	1432RM7
MMT-151800413.000	TMPE214499585.300	1431MJG

Result [X] Pass [ ] Fail [ ] ____________________

14L TSSOP (4.4 mm) assembled by MMT (ALPH) pass reliability test per QCI-39000.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:____________________**Date:** November 24, 2014 **(Sr.Reliability Engineer)**

(Mr.Udom Suksansakul)

Approved By:____________________**Date:** November 24, 2014 **(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	135	0/135	Pass	
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test :**+25°C,85°C and 125°C System: ETS300 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 :**+25°C and 85°C (With 1 lot 125°C on MMT-151900011.000) System: ETS300	JESD22-A113	693(0)	693 693 693 693 0/693	Pass	Good Devices

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: :+ 85°C (With 1 lot 125°C on MMT-151900011.000) System: ETS300		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (> 2.5 grams)		15 (0)	0/15	Pass	
	Bond Shear (>15.00 grams)		15 (0)	0/15	Pass	
	Stress Condition: -65°C to +150°C,1000 Cycles System : TABAI ESPEC TSA-70H			231		
	Electrical Test: +85°C (With 1 lot 125°C on MMT-151900011.000) System: ETS300		231(0)	0/231	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: ETS300		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	Electrical Test: +25°C System: ETS300		231(0)	0/231	Pass	
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 5.0 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test:+25°C and 85°C (With 1 lot 125°C on MMT-151900011.000) System: ETS300		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH, 192 hrs. **Bias Volt:** 5.0 Volts System: HAST 6000X			231		
	Electrical Test:+25°C and 85°C (With 1 lot 125°C on MMT-151900011.000) System: ETS300		231(0)	0/231	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	Stress Condition: Bake 175°C, 504 hrs System: SHEL LAB	JESD22-A103		45		45 units
	Electrical Test :+25°C,85°C and 125°C System: ETS300		45(0)	0/45	Pass	
Bond Strength Data Assembly	Wire Pull (> 2.5 grams)	M2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>15.00 grams)	JESD22-B116	30 (0) bonds	0/30	Pass	