



**MICROCHIP**

**QUALIFICATION REPORT  
RELIABILITY LABORATORY**

**PCN#: CYER-16ZTUP565**

Date:  
December 06, 2013

**Qualification of 6L SC70 package at ANAP (ATP) assembly site.**

Distribution

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## MICROCHIP PACKAGE QUALIFICATION REPORT

<b>Purpose</b>	Qualification of 6L SC70 package at ANAP (ATP) assembly site.
<b>CN</b>	BC131335
<b>QUAL ID</b>	Q13114
<b>MP CODE</b>	DEEC1YR5X050
<b>Part No.</b>	MCP40D17T-503E/LT
<b>Bonding No.</b>	BDM-000357 Rev. A
<b>CCB No.</b>	1328.03
<b><u>Package</u></b>	
<b>Type</b>	6L SC70_COL
<b>Die thickness</b>	8 mils
<b>Die size</b>	27.00 x 29.00 mils
<b><u>Lead Frame</u></b>	
<b>Paddle size</b>	34.00 x 36.00 mils
<b>Material</b>	CDA194
<b>Surface</b>	Ag spot plated
<b>Process</b>	Etched
<b>Lead Lock</b>	Yes
<b>Part Number</b>	101383506
<b>Treatment</b>	None
<b><u>Die attach material</u></b>	
<b>Epoxy</b>	8006NS
<b>Wire</b>	Au wire
<b>Mold Compound</b>	G700LS
<b>Plating Composition</b>	Matte Tin



# MICROCHIP PACKAGE QUALIFICATION REPORT

## Manufacturing Information

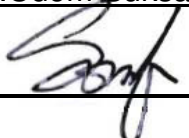
Assembly Lot No.	Wafer Lot No.	Date Code
ANAP142200221	GRSM412450332.120	1335AS7
ANAP142200223	GRSM412450332.120	1335ASD
ANAP142200225	GRSM412450332.120	1335ASH

**Result**       Pass       Fail       \_\_\_\_\_

6L SC70 assembled by ATP (ANAP) 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:** December 06, 2013 (Sr. Reliability Engineer)

(Mr. Udom Suksansakul)

**Approved By:**  **Date:** December 06, 2013 (Reliability Manager)

(Mr. Somnuek Thongprasert)

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
<b>Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)</b>	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 C J-STD-020D	135	0/135	Pass	

<b>Precondition Prior Perform Reliability Tests (At MSL Level 1)</b>	<b>Electrical Test</b> :+25°C and 125°C System: J750	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE			693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	<b>Electrical Test</b> :+25°C and 125°C System: J750			0/693	Pass	

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>Temp Cycle</b>	<b>Stress Condition:</b> -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H Inspection: External crack inspection all units under 40X Optical magnification <b>Electrical Test:</b> + 125°C System: J750	JESD22-A104		231		Parts had been pre-conditioned at 260°C
					231	Pass
<b>UNBIASED-HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. System: HAST 6000X <b>Electrical Test:</b> +25°C System: J750	JESD22-A118		231		Parts had been pre-conditioned at 260°C
			231(0)	0/231	Pass	77 units / lot
<b>HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. <b>Bias Volt:</b> 5.5 Volts System: HAST 6000X <b>Electrical Test:</b> +25°C and 125°C System: J750	JESD22-A110		231		Parts had been pre-conditioned at 260°C
			231(0)	0/231	Pass	77 units / lot
<b>High Temperature Storage Life</b>	Stress Condition: Bake 175°C, 504 hrs System: SHEL LAB <b>Electrical Test</b> :+25°C and 125°C System: J750	JESD22-A103		45		45 units
			45(0)	0/45	Pass	

## PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>Solderability Temp 215°C</b>	<b>Steam Aging:</b> Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63,Pb37 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22- B102	22 (0)	22  22 0/22	Pass	
<b>Solderability Temp 245°C</b>	<b>Steam Aging:</b> 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	JESD22- B102	22 (0)	22  22 0/22	Pass	
<b>Bond Line Thickness</b>	Bond Line Thickness	SPI-45528	15(0)	15(0)	Pass	5 units / lot
<b>Physical Dimensions</b>	Physical Dimension, 30 units from 1 lot	JESD22- B100/B108	30(0) Units	0/30	Pass	
<b>Bond Strength Data Assembly</b>	Wire Pull (> 2.5 grams)	M2011	30 (0) bonds	0/30	Pass	
	Bond Shear (15.00 grams)	JESD22- B116	30 (0) bonds	0/30	Pass	
<b>Die Shear</b>	Die Shear (1.0 kgf.)	QCI- 91021B	30 (0)	0/30	Pass	