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## Product Change Notification - RMES-22ISPF896 (Printer Friendly)

**Date:** 10 Jan 2017

**Product Category:** USB Bridge; Successive Approximation Register (SAR) A/D Converters; Sigma - Delta A/D Converters; Digital Potentiometers; Linear Op Amps; Linear Comparators; Linear Programmable Gain Amplifiers; Capacitive Touch Sensors; 8-bit PIC Microcontrollers; 16-Bit - Microcontrollers and Digital Signal Controllers

**Notification subject:** CCB 2817 Final Notice: Qualification of C194 lead-frame for selected products in 14 TSSOP package at ANAP assembly site.

**Notification text:** **PCN Status:**  
Final notification

### Microchip Parts Affected:

Please open the attachments found in the attachments field below labeled as PCN\_#\_Affected\_CPN.

NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls).

### Description of Change:

Qualification of C194 lead-frame for selected products in 14 TSSOP package at ANAP assembly site.

### Pre Change:

C7025 lead frame

### Post Change:

C194 lead frame

### Pre and Post Change Summary:

	Pre Change	Post Change
<b>Assembly Site</b>	ANAP	ANAP
<b>Wire material</b>	Au	Au
<b>Die attach material</b>	8290	8290
<b>Molding compound material</b>	G700	G700
<b>Lead frame material</b>	C7025	C194

**Impacts to Data Sheet:**

None

**Change Impact:**

None

**Reason for Change:**

To improve productivity by qualifying C194 lead frame material.

**Change Implementation Status:**

In Progress

**Estimated First Ship Date:**

February 10, 2017 (date code: 1706)

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

**Time Table Summary:**

Workweek	January 2017				February 2017			
	01	02	03	04	05	06	07	08
Qualification Report Availability		X						
Final PCN Issue Date		X						
Estimated Implementation Date						X		

**Method to Identify Change:**

Traceability code

**Qualification Report:**

Please open the attachments included with this PCN labeled as PCN\_#\_Qual Report.

**Revision History:**

**January 10, 2017:** Issued final notification.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

**Attachment(s):**

- [PCN\\_RMES-22ISPF896\\_Qual Report.pdf](#)
- [PCN\\_RMES-22ISPF896\\_Affected CPN.pdf](#)
- [PCN\\_RMES-22ISPF896\\_Affected CPN.xls](#)

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RMES-22ISPF896 - CCB 2817 Final Notice: Qualification of C194 lead-frame for selected products in 14 TSSOP package at ANAP assembly site.

Affected Catalog Part Numbers (CPN)

PCN_RMES-22ISPF896
CATALOG_PART_NBR
HA1020-I/ST
HA1020T-I/ST
HA4923-I/ST
HA4923T-I/ST
HA4986-I/ST
HA4986T-I/ST
MCP2221A-I/ST
MCP2221AT-I/ST
MCP2221-I/ST
MCP2221T-I/ST
MCP3004-I/ST
MCP3004T-I/ST
MCP3204-BAI/ST
MCP3204-CI/ST
MCP3204T-BAI/ST
MCP3204T-CI/ST
MCP3302-BI/ST
MCP3302-CI/ST
MCP3302T-BI/ST
MCP3302T-CI/ST
MCP3424-E/ST
MCP3424T-E/ST
MCP3428-E/ST
MCP3428T-E/ST
MCP42010-E/ST
MCP42010-I/ST
MCP42010T-E/ST
MCP42010T-I/ST
MCP42050-E/ST
MCP42050-I/ST
MCP42050T-E/ST
MCP42050T-I/ST
MCP42100-E/ST
MCP42100-I/ST
MCP42100T-E/ST
MCP42100T-I/ST
MCP4231-103E/ST
MCP4231-104E/ST
MCP4231-502E/ST
MCP4231-503E/ST
MCP4231T-103E/ST
MCP4231T-104E/ST
MCP4231T-502E/ST

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Affected Catalog Part Numbers (CPN)

PCN_RMES-22ISPF896
CATALOG_PART_NBR
MCP4231T-503E/ST
MCP4241-103E/ST
MCP4241-104E/ST
MCP4241-502E/ST
MCP4241-503E/ST
MCP4241T-103E/ST
MCP4241T-104E/ST
MCP4241T-502E/ST
MCP4241T-503E/ST
MCP4251-103E/ST
MCP4251-104E/ST
MCP4251-502E/ST
MCP4251-503E/ST
MCP4251T-103E/ST
MCP4251T-104E/ST
MCP4251T-502E/ST
MCP4251T-503E/ST
MCP4261-103E/ST
MCP4261-104E/ST
MCP4261-502E/ST
MCP4261-503E/ST
MCP4261T-103E/ST
MCP4261T-104E/ST
MCP4261T-502E/ST
MCP4261T-503E/ST
MCP4332-103E/ST
MCP4332-104E/ST
MCP4332-502E/ST
MCP4332-503E/ST
MCP4332T-103E/ST
MCP4332T-104E/ST
MCP4332T-502E/ST
MCP4332T-503E/ST
MCP4342-103E/ST
MCP4342-104E/ST
MCP4342-502E/ST
MCP4342-503E/ST
MCP4342T-103E/ST
MCP4342T-104E/ST
MCP4342T-502E/ST
MCP4342T-503E/ST
MCP4352-103E/ST
MCP4352-104E/ST

RMES-22ISPF896 - CCB 2817 Final Notice: Qualification of C194 lead-frame for selected products in 14 TSSOP package at ANAP assembly site.

Affected Catalog Part Numbers (CPN)

PCN_RMES-22ISPF896
CATALOG_PART_NBR
MCP4352-502E/ST
MCP4352-503E/ST
MCP4352T-103E/ST
MCP4352T-104E/ST
MCP4352T-502E/ST
MCP4352T-503E/ST
MCP4362-103E/ST
MCP4362-104E/ST
MCP4362-502E/ST
MCP4362-503E/ST
MCP4362T-103E/ST
MCP4362T-104E/ST
MCP4362T-502E/ST
MCP4362T-503E/ST
MCP4432-103E/ST
MCP4432-104E/ST
MCP4432-502E/ST
MCP4432-503E/ST
MCP4432T-103E/ST
MCP4432T-104E/ST
MCP4432T-502E/ST
MCP4432T-503E/ST
MCP4442-103E/ST
MCP4442-104E/ST
MCP4442-502E/ST
MCP4442-503E/ST
MCP4442T-103E/ST
MCP4442T-104E/ST
MCP4442T-502E/ST
MCP4442T-503E/ST
MCP4452-103E/ST
MCP4452-104E/ST
MCP4452-502E/ST
MCP4452-503E/ST
MCP4452T-103E/ST
MCP4452T-104E/ST
MCP4452T-502E/ST
MCP4452T-503E/ST
MCP4462-103E/ST
MCP4462-104E/ST
MCP4462-502E/ST
MCP4462-503E/ST
MCP4462T-103E/ST

RMES-22ISPF896 - CCB 2817 Final Notice: Qualification of C194 lead-frame for selected products in 14 TSSOP package at ANAP assembly site.

Affected Catalog Part Numbers (CPN)

PCN_RMES-22ISPF896
CATALOG_PART_NBR
MCP4462T-104E/ST
MCP4462T-502E/ST
MCP4462T-503E/ST
MCP4631-103E/ST
MCP4631-104E/ST
MCP4631-502E/ST
MCP4631-503E/ST
MCP4631T-103E/ST
MCP4631T-104E/ST
MCP4631T-502E/ST
MCP4631T-503E/ST
MCP4641-103E/ST
MCP4641-104E/ST
MCP4641-502E/ST
MCP4641-503E/ST
MCP4641T-103E/ST
MCP4641T-104E/ST
MCP4641T-502E/ST
MCP4641T-503E/ST
MCP4651-103E/ST
MCP4651-104E/ST
MCP4651-502E/ST
MCP4651-503E/ST
MCP4651T-103E/ST
MCP4651T-104E/ST
MCP4651T-502E/ST
MCP4651T-503E/ST
MCP4661-103E/ST
MCP4661-103PE/ST
MCP4661-104E/ST
MCP4661-502E/ST
MCP4661-503E/ST
MCP4661T-103E/ST
MCP4661T-104E/ST
MCP4661T-502E/ST
MCP4661T-503E/ST
MCP6004-E/ST
MCP6004-I/ST
MCP6004-I/STAAA
MCP6004T-E/ST
MCP6004T-I/ST
MCP6004T-I/STAAA
MCP6044-E/ST

RMES-22ISPF896 - CCB 2817 Final Notice: Qualification of C194 lead-frame for selected products in 14 TSSOP package at ANAP assembly site.

Affected Catalog Part Numbers (CPN)

PCN_RMES-22ISPF896
CATALOG_PART_NBR
MCP6044-I/ST
MCP6044T-E/ST
MCP6044T-I/ST
MCP604-E/ST
MCP604-I/ST
MCP604-I/STAAA
MCP604T-E/ST
MCP604T-I/ST
MCP604T-I/STAAA
MCP609-I/ST
MCP609T-I/ST
MCP6144-E/ST
MCP6144-I/ST
MCP6144T-E/ST
MCP6144T-I/ST
MCP6234-E/ST
MCP6234T-E/ST
MCP6244-E/ST
MCP6244T-E/ST
MCP6274-E/ST
MCP6274T-E/ST
MCP6284-E/ST
MCP6284T-E/ST
MCP6294-E/ST
MCP6294T-E/ST
MCP6404-E/ST
MCP6404T-E/ST
MCP6564-E/ST
MCP6564T-E/ST
MCP6569-E/ST
MCP6569T-E/ST
MCP660-E/ST
MCP660T-E/ST
MCP664-E/ST
MCP664T-E/ST
MCP6H04-E/ST
MCP6H04T-E/ST
MCP6L04T-E/ST
MCP6L4T-E/ST
MCP6L74T-E/ST
MCP6L94T-E/ST
MCP6S26-I/ST
MCP6S26T-I/ST



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Affected Catalog Part Numbers (CPN)

PCN_RMES-22ISPF896
CATALOG_PART_NBR
MTCH105-I/ST
MTCH105T-I/ST
PIC16F1455-E/ST
PIC16F1455-I/ST
PIC16F1455T-I/ST
PIC16F1503-E/ST
PIC16F1503-I/ST
PIC16F1503T-E/ST
PIC16F1503T-E/ST053
PIC16F1503T-I/ST
PIC16F1503T-I/ST053
PIC16F1613-E/ST
PIC16F1613-I/ST
PIC16F1613T-I/ST
PIC16F1703-E/ST
PIC16F1703-I/ST
PIC16F1703T-I/ST
PIC16F1705-E/ST
PIC16F1705-I/ST
PIC16F1705T-E/ST
PIC16F1705T-I/ST
PIC16F1823-E/ST
PIC16F1823-E/STC07
PIC16F1823-H/ST
PIC16F1823-I/ST
PIC16F1823-I/STC06
PIC16F1823-I/STC08
PIC16F1823T-E/ST
PIC16F1823T-E/STC07
PIC16F1823T-H/ST
PIC16F1823T-I/ST
PIC16F1823T-I/ST036
PIC16F1823T-I/STC06
PIC16F1823T-I/STC08
PIC16F1824-E/ST
PIC16F1824-I/ST
PIC16F1824-I/STRA5
PIC16F1824T-E/ST
PIC16F1824T-E/ST037
PIC16F1824T-E/ST038
PIC16F1824T-E/ST040
PIC16F1824T-E/ST041
PIC16F1824T-I/ST

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Affected Catalog Part Numbers (CPN)

PCN_RMES-22ISPF896
CATALOG_PART_NBR
PIC16F1824T-I/STRA5
PIC16F1825-E/ST
PIC16F1825-H/ST
PIC16F1825-I/ST
PIC16F1825-I/ST027
PIC16F1825-I/ST036
PIC16F1825-I/STC02
PIC16F1825T-E/ST
PIC16F1825T-H/ST
PIC16F1825T-I/ST
PIC16F1825T-I/ST026
PIC16F1825T-I/ST027
PIC16F1825T-I/ST036
PIC16F1825T-I/STC02
PIC16F505-E/ST
PIC16F505-I/ST
PIC16F505T-E/ST
PIC16F505T-I/ST
PIC16F505T-I/ST061
PIC16F506-E/ST
PIC16F506-I/ST
PIC16F506T-I/ST
PIC16F506T-I/STC01
PIC16F526-E/ST
PIC16F526-I/ST
PIC16F526T-I/ST
PIC16F526T-I/ST059
PIC16F610-E/ST
PIC16F610-I/ST
PIC16F610T-E/ST
PIC16F610T-I/ST
PIC16F610T-I/ST023
PIC16F610T-I/ST024
PIC16F610T-I/ST025
PIC16F610T-I/ST026
PIC16F610T-I/ST027
PIC16F610T-I/ST028
PIC16F610T-I/ST029
PIC16F610T-I/ST032
PIC16F610T-I/ST038
PIC16F610T-I/ST040
PIC16F610T-I/ST041
PIC16F610T-I/ST042

RMES-22ISPF896 - CCB 2817 Final Notice: Qualification of C194 lead-frame for selected products in 14 TSSOP package at ANAP assembly site.

Affected Catalog Part Numbers (CPN)

PCN_RMES-22ISPF896
CATALOG_PART_NBR
PIC16F610T-I/ST043
PIC16F616-E/ST
PIC16F616-H/ST
PIC16F616-I/ST
PIC16F616-I/ST036
PIC16F616T-E/ST
PIC16F616T-I/ST
PIC16F616T-I/ST026
PIC16F616T-I/ST027
PIC16F616T-I/ST037
PIC16F616T-I/ST039
PIC16F616T-I/ST043
PIC16F616T-I/ST044
PIC16F616T-I/ST045
PIC16F616T-I/ST051
PIC16F616T-I/ST058
PIC16F616T-I/ST059
PIC16F616T-I/ST065
PIC16F616T-I/ST076
PIC16F616T-I/ST088
PIC16F616T-I/ST090
PIC16F630-E/ST
PIC16F630-I/ST
PIC16F630T-E/ST
PIC16F630T-I/ST
PIC16F630T-I/ST052
PIC16F630T-I/STC04
PIC16F636-E/ST
PIC16F636-I/ST
PIC16F636-I/ST054
PIC16F636T-E/ST
PIC16F636T-I/ST
PIC16F676-E/ST
PIC16F676-I/ST
PIC16F676-I/STAU
PIC16F676-I/STC15
PIC16F676T-E/ST
PIC16F676T-I/ST
PIC16F676T-I/ST061
PIC16F676T-I/ST062
PIC16F676T-I/STAU
PIC16F676T-I/STC15
PIC16F688-E/ST

RMES-22ISPF896 - CCB 2817 Final Notice: Qualification of C194 lead-frame for selected products in 14 TSSOP package at ANAP assembly site.

Affected Catalog Part Numbers (CPN)

PCN_RMES-22ISPF896
CATALOG_PART_NBR
PIC16F688-I/ST
PIC16F688-I/ST029
PIC16F688-I/ST049
PIC16F688-I/ST050
PIC16F688T-E/ST
PIC16F688T-I/ML
PIC16F688T-I/ST
PIC16F688T-I/ST029
PIC16F688T-I/ST036
PIC16F688T-I/ST044
PIC16F688T-I/ST049
PIC16F688T-I/ST050
PIC16F688T-I/ST054
PIC16F688T-I/ST056
PIC16F688T-I/ST061
PIC16F688T-I/ST062
PIC16F753-E/ST
PIC16F753-I/ST
PIC16F753T-E/ST
PIC16F753T-I/ST
PIC16HV610-E/ST
PIC16HV610-I/ST
PIC16HV610T-I/ST
PIC16HV616-E/ST
PIC16HV616-I/ST
PIC16HV616T-E/ST
PIC16HV616T-I/ST
PIC16HV753-E/ST
PIC16HV753-E/STC01
PIC16HV753-E/STC03
PIC16HV753-I/ST
PIC16HV753-I/ST025
PIC16HV753T-E/ST
PIC16HV753T-E/ST027
PIC16HV753T-E/STC01
PIC16HV753T-E/STC03
PIC16HV753T-I/ST
PIC16HV753T-I/ST025
PIC16LC505-04/ST
PIC16LC505-04I/ST
PIC16LF1455-E/ST
PIC16LF1455-I/ST
PIC16LF1455T-I/ST

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Affected Catalog Part Numbers (CPN)

PCN_RMES-22ISPF896
CATALOG_PART_NBR
PIC16LF1503-E/ST
PIC16LF1503-I/ST
PIC16LF1503-I/STC03
PIC16LF1503T-I/ST
PIC16LF1503T-I/ST025
PIC16LF1503T-I/STC03
PIC16LF1554-E/ST
PIC16LF1554-I/ST
PIC16LF1554T-I/ST
PIC16LF1613-E/ST
PIC16LF1613-I/ST
PIC16LF1613T-I/ST
PIC16LF1703-E/ST
PIC16LF1703-I/ST
PIC16LF1703T-I/ST
PIC16LF1705-E/ST
PIC16LF1705-I/ST
PIC16LF1705T-I/ST
PIC16LF1823-E/ST
PIC16LF1823-I/ST
PIC16LF1823-I/STC05
PIC16LF1823T-I/ST
PIC16LF1823T-I/STC05
PIC16LF1824-E/ST
PIC16LF1824-I/ST
PIC16LF1824T-E/ST
PIC16LF1824T-I/ST
PIC16LF1824T-I/ST024
PIC16LF1825-E/ST
PIC16LF1825-I/ST
PIC16LF1825-I/STC01
PIC16LF1825T-I/ST
PIC24F04KA200-I/ST
PIC24F04KA200T-I/ST



**MICROCHIP**

**QUALIFICATION REPORT SUMMARY**  
RELIABILITY LABORATORY

**PCN #: RMES-22ISPF896**

**Date**  
**September 14, 2015**

**Qualification of C194 lead-frame for selected products in 20L TSSOP package at ANAP assembly site. The 14L TSSOP package will qualify by similarity at ANAP assembly site**

Distribution

Fernando C	Greg P
Arthur N	Vassilis D
Joe F	Wichai K
Surasit P	Somnuek T.
Mitch R	Simeon Iliev
Chaweng W	Atthapong W
Chalermpon P	Arnel M
Irina K	Sunisa K
Maitree Y	Jeffrey J
Supakorn L	Ponpitug Y
Rhoderick O	Marco Ho
Maria Luisa	Fannie Lin

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## **MICROCHIP**

### **PACKAGE QUALIFICATION REPORT**

<b>Purpose</b>	Qualification of C194 lead-frame for selected products in 20L TSSOP package at ANAP assembly site. The 14L TSSOP package will qualify by similarity at ANAP assembly site
<b>CN</b>	BC150627
<b>QUAL ID</b>	Q15078
<b>MP CODE</b>	D5AU1YG2XB05
<b>Part No.</b>	MCP4341T-502E/ST
<b>Bonding No.</b>	BDE002988 Rev. 02
<b>CCB</b>	2817
<b><u>Package</u></b>	
<b>Type</b>	20L TSSOP
<b>Package size</b>	4.4 mm
<b>Die thickness</b>	11 mils
<b>Die size</b>	67.7 x 95.10 mils
<b><u>Lead Frame</u></b>	
<b>Paddle size</b>	2.4 x 3.6 mm
<b>Material</b>	C194ESH
<b>Surface</b>	DR
<b>Process</b>	Stamped
<b>Lead Lock</b>	No
<b>Part Number</b>	101382349
<b>Treatment</b>	None
<b><u>Die attach material</u></b>	
<b>Epoxy</b>	8290
<b>Wire</b>	Au wire
<b>Mold Compound</b>	G700
<b>Plating Composition</b>	Matte Tin



# MICROCHIP PACKAGE QUALIFICATION REPORT

## Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
ANAP155000366.000	GRSM415332940.300	1511AWS
ANAP155000376.000	GRSM415332940.300	1511AY5
ANAP155000379.000	GRSM415332940.300	1511AYB

## Result

Pass  Fail  \_\_\_\_\_

14L TSSOP (4.4 mm) assembled by ATP 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.



## 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><u>Precondition Prior Perform Reliability Tests (At MSL Level 1)</u></b>	<b>Electrical Test</b> :+25°C and 125°C System: J750	JESD22- A113	693(0)	693	Pass	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		

# 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	JESD22-A104		231		Parts had been pre-conditioned at 260°C 77 units / lot
	<b>Electrical Test:</b> + 125°C System: J750		231(0)	0/231	Pass	
	<b>Bond Strength:</b> Wire Pull (> 4.0 grams)		15 (0)	0/15	Pass	
	Bond Shear (>18.00 grams)		15 (0)	0/15	Pass	
<b>UNBIASED-HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C 77 units / lot
	<b>Electrical Test:</b> +25°C System: J750		231(0)	0/231	Pass	
<b>HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. <b>Bias Volt:</b> 5.0 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C 77 units / lot
	<b>Electrical Test:</b> +25°C and 125°C System: J750		231(0)	0/231	Pass	
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 504 hrs System: SHEL LAB	JESD22-A103		45		45 units
	<b>Electrical Test</b> :+25°C and 125°C System: J750		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	JESD22B-102E	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	JESD22B-102E	22 (0)	22 22 0/22	Pass	
<b>Bond Strength Data Assembly</b>	Wire Pull (> 4.0 grams)	M2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>18.00 grams)	JESD22-B116	30 (0) bonds	0/30	Pass	