PCN # 1746N

DATE: January 24, 2019

EXPECTED PCN SHIP DATE: January 24, 2019

Quality Assurance
160 Rio Robles
San Jose, CA 95134

www.maximintegrated.com

☐ **PROCESS CHANGE NOTICE**

☒ **PRODUCT CHANGE NOTICE**

MAXIM INTEGRATED HEREBY ISSUES NOTIFICATION OF CHANGE THAT MAY AFFECT THE FOLLOWING CATEGORIES:

☐ DESIGN	☐ WAFER FAB	☒ ASSEMBLY	☐ TEST	☐ ELEC/MECH SPECS

AFFECTED PRODUCT:

Ordering P/N: (See PN listing XLS in PCN ZIP file)

CHANGE FROM: -	CHANGE TO: -
Maxim products in QSOP package manufactured at current subcontractor	Additional Assembler Greatek in Taiwan/R.O.C.

JUSTIFICATION: -

Maxim has selected Greatek to expand assembly capacity. Greatek is an established assembly subcontractor and is certified under QS 9000, ISO/TS 16949, ISO 14001 and Sony Green Partner.

This new partnership will enhance Maxim's Supply-Chain to meet capacity demands, flexibility and on-time delivery.

Qualification results are reflected in Maxim's Reliability report attached (R29184CQ).

There are no regulatory compliance changes to the material content of the devices.

There are no changes to the form, fit, function of the devices.

TRACEABILITY: Maxim Integrated maintains full traceability by device marking, packaging labels and shipment documents.

Maxim Integrated's Change Notification System is designed to keep our customer base apprised of major product, manufacturing, or facility improvements.

Nasser Ali Chaouche

Nasser AliChaouche / PCN Coordinator

For further information, please contact either of the people listed below.

Contact your local Maxim Integrated Company Representative or Nasser AliChaouche, PCN Coordinator
408-601-5660 / pcn.coordinator@maximintegrated.com

Maxim Integrated
160 Rio Robles,
San Jose, CA 95134

GREATEK PACKAGE QUALIFICATION QSOP

Rel Project #: R29184CQ

1) PURPOSE

To qualify assembler Greatek to build QSOP packages with 0.8/1.0/1.3/2.0 Au-wire.

2) SUMMARY:

Qualification lots assembled in Greatek have passed reliability qualification (Conditional Qualification Requirements / Acceptance Criteria). Therefore, assembler Greatek is conditionally qualified to build QSOP packages with 0.8/1.0/1.3/2.0 Au-wire. These packages, as tested MSL1, are not moisture sensitive, therefore, requires no bake-and-bag precautions for shipment and/or storage.

3) QUALIFICATION REQUIREMENTS AND RESULTS

Rel#			R29184A	R29184B	R29184C
Lot#			NNL0AA129CA	NNL0AA129CB	NNL0AA129CC
Device:			MAX3645EEE+	MAX3645EEE+	MAX3645EEE+
Die Type:			HD59Z	HD59Z	HD59Z
Die Size (mils)			57x58 mil	57x58 mil	57x58 mil
Package Type (code):			E16+1	E16+1	E16+1
Date Code:			1804	1804	1804
Stress Test	**Duration**	**Sampling Plan**	**Result**	**Result**	**Result**
Convection Reflow *2,3,4 **260°C Peak**	MSL 1, 3X	0/500	0/500	0/500	0/500
Biased HAST 130°C / 85% R.H. *1,3	96 hrs.	0/77	0/77	0/77	0/77
Unbiased HAST 130°C / 85% R.H. *1,3	96 hrs.	0/77	0/77	0/77	0/77
Temperature Cycle *1,2,3,5 **-65°C to 150°C (Condition C)**	500 cyc	0/77	0/77	0/77	0/77
High Temperature Storage 150°C *1,2,3	500 hrs.	0/77	0/77	0/77	0/77
HTOL*2,3,4	500 hrs	0/77	0/77	-	-
C-SAM*1	T0	0/25	0/25	0/25	0/25
Wire Bond Pull **Minimum 5 grams-force**	T0, post TC	0/200 wires	0/200wires	0/200wires	0/200wires
Solderability (Lead-Free,245C)	T0	0/15	0/15	0/15	0/15
Physical Dimension (PD)	T0	0/15	0/15	0/15	0/15
Bondcrater	Post-Precon	0/20	0/20	0/20	0/20
Solder Shock		0/15	0/15	0/15	0/15

Rel#			R29184H
Lot#			JGN1F3195BA
Device:			MAX8538EEI+
Die Type:			PN02Y-1Z
Die Size (mils)			80 x 140
Package Type (code):			E28+1
Date Code:			1810
Stress Test	**Duration**	**Sampling Plan**	**Result**
Convection Reflow *2,3,4 **260°C Peak**	MSL 1, 3X	0/450	0/427
Unbiased HAST 130°C / 85% R.H. *1,3	96 hrs.	0/77	0/77
Temperature Cycle *1,2,3,5 **-65°C to 150°C (Condition C)**	500 cyc	0/77	0/77
High Temperature Storage 150°C *1,2,3	500 hrs.	0/77	0/77
C-SAM*1	T0, Precon	0/25	0/25
Wire Bond Pull **Minimum 5 grams-force**	T0	0/200 wires	0/200wires
Solderability (Lead-Free,245C)	T0	0/15	0/15
Physical Dimension (PD)	T0	0/15	0/15
Bondcrater	Post-Precon	0/20	0/20
Solder Shock		0/15	0/15

Note:

*1. Convection reflow is used as preconditioning for SMD packages.
*2. Electrical tests pre- and post-stress were performed at +85°C.
*3. Electrical tests pre- and post-stress were performed at +25°C.
*4. Electrical tests pre- and post-stress were performed at -40°C.

Rel#			R29184D	R29184E
Lot#			EF4ZAA072BC	EF4ZAA072BD
Device:			MAX1231BCEG+	MAX1231BCEG+
Die Type:			AC88Z/F4ZA	AC88Z/F4ZA
Die Size (mils)			90X130 mil	90X130 mil
Package Type (code):			E24+3	E24+3
Date Code:			1817	1817
Stress Test	**Duration**	**Sampling Plan**	**Result**	**Result**
Convection Reflow *2,3 **260°C Peak**	MSL 1, 3X	0/450	0/443	0/450
Unbiased HAST 130°C / 85% R.H. *1,3	96 hrs.	0/77	0/77	0/77
Temperature Cycle *1,2,3,5 **-65°C to 150°C (Condition C)**	500cyc	0/77	0/77	0/77
High Temperature Storage 150°C *1,2,3	500 hrs	0/77	0/77	0/77
C-SAM*1	T0	0/25	0/25	0/25
Wire Bond Pull Minimum 5 grams-force	T0	0/200 wires	0/200wires	0/200wires
Solderability (Lead-Free,245C)	T0	0/15	0/15	0/15
Physical Dimension (PD)	T0	0/15	0/15	0/15
Bondcrater	Post-Precon	0/20	0/20	0/20
Solder Shock*3		0/15	0/15	0/15

Note:

*1. Convection reflow is used as preconditioning for SMD packages.
*2. Electrical tests pre- and post-stress were performed at +70°C.
*3. Electrical tests pre- and post-stress were performed at +25°C.
*4. Electrical tests pre- and post-stress were performed at 0°C.

Rel#			R29184G
Lot#			TSEYAA175CF/TSEYAA175CG
Device:			MAX16917BGEE/V+
Die Type:			AP04Z-1Z
Die Size (mils)			53 x 115
Package Type (code):			E16+5
Date Code:			1810
Stress Test	**Duration**	**Sampling Plan**	**Result**
Convection Reflow *2,3,4 **260°C Peak**	MSL 1, 3X	0/450	0/449
Unbiased HAST 130°C / 85% R.H. *1,3	96 hrs.	0/77	0/77
Temperature Cycle *1,2,3,5 **-65°C to 150°C (Condition C)**	500 cyc	0/77	0/77
High Temperature Storage 150°C *1,2,3	500 hrs.	0/77	0/77
HTOL*2,3,4	500 hrs	0/77	0/77
C-SAM*1	T0	0/25	0/25
Wire Bond Pull Minimum 5 grams-force	T0	0/200 wires	0/200wires
Solderability (Lead-Free,245C)	T0	0/15	0/15
Physical Dimension (PD)	T0	0/15	0/15
Bondcrater	Post-Precon	0/20	0/20
Solder Shock		0/15	0/15

Note:

*1. Convection reflow is used as preconditioning for SMD packages.
*2. Electrical tests pre- and post-stress were performed at +105°C.
*3. Electrical tests pre- and post-stress were performed at +25°C.
*4. Electrical tests pre- and post-stress were performed at -40°C.

Rel#			R29184I	R29184J
Lot#			TAPT6A083HA	TAPT6A083HB
Device:			MAX16953AEE/V+	MAX16953AEE/V+
Die Type:			AP25Z	AP25Z
Die Size (mils)			77 x 75	77 x 75
Package Type (code):			E16+4	E16+4
Date Code:			1811	1811
Stress Test	**Duration**	**Sampling Plan**	**Result**	**Result**
Convection Reflow *2,3,4 **260°C Peak**	MSL 1, 3X	0/450	0/450	0/448
Unbiased HAST 130°C / 85% R.H. *1,3	96 hrs.	0/77	0/77	0/77
Temperature Cycle *1,2,3 **-65°C to 150°C (Condition C)**	500 cyc	0/77	0/77	0/77
High Temperature Storage 150°C *1,2,3	500 hrs.	0/77	0/77	0/77
C-SAM*1	T0, Precon	0/25	0/25	0/25
Wire Bond Pull **Minimum 5 grams-force**	T0	0/200 wires	0/200wires	0/200wires
Solderability (Lead-Free,245C)	T0	0/15	0/15	0/15
Physical Dimension (PD)	T0	0/15	0/15	
Bondcrater	Post-Precon	0/20	0/20	0/20
Solder Shock		0/15	0/15	0/15

Note:

*1. Convection reflow is used as preconditioning for SMD packages.
*2. Electrical tests pre- and post-stress were performed at +125°C.
*3. Electrical tests pre- and post-stress were performed at +25°C.
*4. Electrical tests pre- and post-stress were performed at -40°C.

4) Package Coverage

The following packages can be covered by this qualification result.

E16+1	E16+5	E24+2
E16+11	E20+1	E24+3
E16+12	E20+3	E28+1
E16+4	E24+1	E28+2

Affected product numbers	PCN Proposed Ship Date
MAX11200EEE+	24-Jan-19
MAX11206EEE+	24-Jan-19
MAX11206EEE+T	24-Jan-19
MAX11605EEE+T	24-Jan-19
MAX11609EEE+	24-Jan-19
MAX11611EEE+	24-Jan-19
MAX11611EEE+T	24-Jan-19
MAX1230BEEG+	24-Jan-19
MAX1640EEE+T	24-Jan-19
MAX1672EEE+	24-Jan-19
MAX1672EEE+T	24-Jan-19
MAX1924XEEE+T	24-Jan-19
MAX2511EEI+	24-Jan-19
MAX2685EEE+T	24-Jan-19
MAX399EEE+	24-Jan-19
MAX4518CEE+T	24-Jan-19
MAX4581CEE+T	24-Jan-19
MAX5186BEEI+T	24-Jan-19
MAX534BCEE+T	24-Jan-19
MAX686EEE+	24-Jan-19
MAX864EEE+	24-Jan-19
MAX9926UAEE+	24-Jan-19