



PACKAGE QUALIFICATION SUMMARY REPORT

Document Control #:	ML1120110066
Purpose:	To provide qualification summary report for all packages
Device:	Various
Mask Identification #:	Various
Process Technology:	Pure Matte Tin (Sn) Plating Process 400 μin (10 μm) – 1000 μin (25 μm), Pre-Plated Leadframe (PPF), or SnAgCu based solder bump
Product:	Various devices plated with Matte Tin, PPF, or with solder spheres
Updated:	September 16, 2020

PACKAGE QUALIFICATION SUMMARY REPORT

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RESULTS SUMMARY

The assembly using Matte Tin plating, PPF or solder spheres complies with the reliability guidelines documented in the qualification plan.

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1 QUALIFICATION OVERVIEW

The purpose of this report is to verify that the qualification testing was performed in accordance with the documented qualification plan required by Microchip specification QCI-39000-002, “Worldwide Quality Conformance Requirements”. The performance requirements were based on having passing moisture sensitivity level, package reliability, JEDEC tin whiskers growth test results per JESD22A121 & JESD201 requirements.

ASSEMBLY OR PLATING SITE	DESIGNATION
AIC SEMICONDUCTOR SDN BH, MALAYSIA	AIC
APTOS TECHNOLOGY TAIWAN	APTS
UTAC DONGGUAN (aka ASAT CHINA)	ASAC
UTAC HONGKONG LIMITED (aka ASAT LIMITED)	ASAT
ADVANCED SEMICONDUCTOR ENGINEERING GROUP, CHUNG LI, TAIWAN	ASCL
ADVANCED SEMICONDUCTOR ENGINEERING GROUP, TAIWAN	ASE
ADVANCED SEMICONDUCTOR ENGINEERING GROUP, MALAYSIA	ASEM
ASE-WEIHAI	ASEW
ASE KOREA INC	ASKR
ADVANCED SEMICONDUCTOR ENGINEERING GROUP, SHANGHAI, CHINA	ASSH
ADVANCED SEMICONDUCTOR ENGINEERING GROUP, SUZHOU, CHINA	ASSZ
AMKOR TECHNOLOGY CHINA (aka ANAC)	ATC
AMKOR TECHNOLOGY KOREA (aka ANAK)	ATK
AMKOR TECHNOLOGY PHILIPPINES P1/P2 (aka ANAP, AAP1, AAP2), MUNTINLUPA CITY, PHILIPPINES	ATP
AMKOR TECHNOLOGY PHILIPPINES P3/P4 (aka AAP3, AAP4), LAGUNA, PHILIPPINES	ATP7
AMKOR TECHNOLOGY TAIWAN (aka ANAT), TAOYUAN HSIEN, TAIWAN	ATT
AMKOR ADVANCED TECHNOLOGY TAIWAN (aka AATT), HSINCHU, TAIWAN	ATT5
CARSEM, SUZHOU, CHINA	CARC

ASSEMBLY OR PLATING SITE	DESIGNATION
CARSEM (M) SDN BHD, MALAYSIA	CARM
CARSEM SEMICONDUCTOR SDN BHD, MALAYSIA	CARS
CIRCUIT ELECTRONIC INDUSTRIES, THAILAND	CEI
CORWIL TECHNOLOGY CORP., MILPITAS, CA	CORW
CIRTEK ELECTRONICS CORP., PHILIPPINES	CRTK
CHIPMOS-TAIWAN	CTI
FASTECH SYNERGY LTD., PHILIPPINES	FSTS
GEM, CHINA	GEMC
GREAT TEAM BACKEND FOUNDRY (DONG GUAN) LTD., CHINA	GTBF
GREATEK ELECTRONICS, TAIWAN	GTK
HANA MICROELECTRONIC, THAILAND	HANA
JIANGYIN CHANGDIAN ADVANCED PACKAGING LTD, CHINA (aka JCAT)	JCAP
KINGPAK TECHNOLOGY INC., TAIWAN	KTI
LINGSEN PRECISION INDUSTRIES, TAIWAN	LPI
MILLENNIUM MICROTECH SHANGHAI (aka ATES), CHINA	MMS
MILLENNIUM MICROTECH THAILAND (aka ALPH)	MMT
MICROCHIP TECHNOLOGY THAILAND	MTAI
NEPES CORPORATION KOREA	NEP
ORIENT SEMICONDUCTOR ENGINEERING, TAIWAN	OSE
POWERTECH TECHNOLOGY INC., TAIWAN	PTI
PANTRONIX CORPORATION, FREMONT, CA	PTX
SILICON PRECISION INDUSTRIES, TAIWAN	SPIL
STATS CHIPPAC-SANGHAI, CHINA	SCC
STATS CHIPPAC-MALAYSIA	SCM
ST ASSEMBLY TEST SERVICES-SINGAPORE	SCS, STA
SIGNETICS CORPORATION, SOUTH KOREA	SIGN
SIGURD, TAIWAN	SIGT
SILTECH SEMICONDUCTOR CORPORATE LTD, SHANGHAI, CHINA	SILTECH
STARS MICROELECTRONICS PUBLIC COMPANY LIMITED, THAILAND	STAR
TAIWAN IC PACKING CORP, TAIWAN	TICP
UNISEM (M) BERHAD, MALAYSIA	UNIB
UNISEM CHINA	UNIC
UNISEM (M) SINGAPORE	UNIS
UTAC THAI LIMITED (aka NSEB), THAILAND	UTL
VIGILANT TECHNOLOGY CO. LTD, THAILAND	VGT

1.1 Qualification Plan

In keeping with guidelines established in QCI-39000-002 for new assembly packages or processes a minimum of three assembly lots would be used for package qualification testing. Representative samples of each package family and subcontractor were used to qualify the entire set of packages manufactured at each subcontractor. Each package selected would be subjected to all tests. In addition, data was collected to verify the solderability of the Matte tin lead finish in both the standard solder bath as well as a representative Pb-Free solder. Tin

whisker reliability testing was performed in compliance to JESD22A121 & JESD201 requirements. A detailed qualification plan is listed below.

Preconditioning – Surface mount devices would be subjected to preconditioning stress before HAST, Unbiased HAST (UHAST), and Temperature Cycling.

HAST – Devices would be subjected to 96 hours of Highly Accelerated Stress Test (HAST).

Unbiased HAST (UHAST) – Devices would be subjected to 96 hours of Unbiased HAST testing. or Autoclave (Pressure Cooker).

Temperature Cycling – Devices would be subjected to 500 temperature cycles.

Temperature Humidity Bias – Devices would be subjected to 1khrs under temperature, humidity and bias.

Thermal Shock – Devices would be subjected to 200 temperature cycles.

Solderability – Devices would be subjected to 8 hours of steam aging and then tested for solderability issues.

Whiskers Growth – Devices would be subjected to 1500 temperature cycles, 4000 hours ambient bake, and 4000 hours high temperature moisture bake.

1.2 Qualification Test Conditions

Tests are performed in accordance with QCI-39000-002, “Worldwide Quality Conformance Requirements”.

TEST	METHOD	CONDITION	CRITERIA
Pre-Conditioning (SMD only)	JESD22-A113	1. Electrical Test @ 25°C 2. SAM exam 3. 125°C or 150°C Bake for 24hrs 4. 85°C/85% R.H. for 168hrs or 30°C/60% R.H. for 192hrs 5. Reflow 3 cycles @ typical 260°C or 245°C 6. SAM exam 7. Electrical Test @ 25°C	0/all surface mount devices
HAST	JESD22-A110	130°C/85%/96hrs	0 fails (note 1)
Unbiased HAST (UHAST) or Unbiased Autoclave (PCT)	JESD22-A118	130°C/85%/96hrs or 121°C/ 100%/96hrs	0 fails (note 1)
Temperature Cycling	JESD22-A104	-65°C to +150°C/500 cycles	0 fails (note 1)
Temperature Humidity Bias (THB)	JESD22-A101	85°C/85%/1000hrs	0 fails (note 1)
Thermal Shock (TS)	MIL-STD 883 Method 1011.9	-55°C to +125°C/200 cycles	0 fails (note 1)

Solderability Test Table 3.3	J-STD-002 and JESD22-B102	Solder temp. 245°C SMD & Through hole Rosin Flux (Matte tin lead finish, SnAgCu 95.5/3.9/0.6 Solder)	0/22
Backward Compatibility (note 2) Solderability Test Table 3.1	J-STD-002 and JESD22-B102	Solder temp. 245°C Through hole 215°C SMD Rosin Flux (Matte tin lead finish, 60/40 SnPb Solder)	0/22
Forward Compatibility Solderability Test Table 3.2	MIL-STD 883 Method 2003	Solder temp. 265°C ± 5°C SMD & Through hole (SnPb lead finish, Sn/Ag/Cu Solder)	0/22
Whiskers Growth	All tin whisker reliability testing was performed per the requirements in JEDEC specifications JESD22A121 & JESD201.	-55 (+0/-10) °C to +85 (+10/-0) °C or -40 (+/-10) °C to +85 (+10/-0)°C for 1500 cycles 30±2°C/60±2% RH 4000 hrs Bake 55±3°C /85±3% RH 4000 hrs Bake	<u>Max whisker lengths:</u> 45um for temp cycle test and 40um for ambient/high temp & humidity tests.

Note 1: Sample size varies for Subcon assembled products where Subcon has their own data for the package of interest.

Note 2: Backward compatible solderability is an optional test.

2 RELIABILITY TEST DESCRIPTIONS

2.1 Preconditioning

This test consists of the following tests run in a consecutive order. The tests are electrical testing at 25°C, C-SAM, Bake 125°C or 150°C for 24 hour, a moisture soak, 3X Reflow cycles, C-SAM and ending with electrical testing at 25°C.

2.2 Highly Accelerated Stress Test (HAST)

This test is similar to autoclave, but under more severe conditions and with the device under bias.

2.3 Unbiased HAST (UHAST)

The unbiased HAST is performed for the purpose of evaluating the reliability on non-hermetic packaged solid-state devices in humid environments. It is a highly accelerated test with temperature and humidity that are exposed to condition 130 °C, 85 % relative humidity for a period of 96 hours.

2.4 Temperature Cycle

This stress test is used to determine if any structural defects are present in a packaging design. This test is intended to reveal potential defects related to wire bonding, cracked die, substrate mounting and thermal mismatch.

2.5 Temperature Humidity Bia (THB)

This test is performed to evaluate the reliability of non-hermetic packaged solid-state devices in humid environments. It is a highly accelerated test with temperature, humidity and bias that are exposed to condition 85 °C, 85 % relative humidity for a period of 1000 hours.

2.6 Thermal Shock (TS)

This test is used to determine the resistance of the packaged devices to sudden exposure to extreme changes in temperature and the effect of alternate exposures to these extremes.

2.7 Solderability Test

This test is to evaluate the solderability of terminations that are normally joined by a soldering operation. The specimens subjected to this test are immersed in a flux and then dipped in a molten solder bath.

2.8 Autoclave (Pressure Cooker)

The purpose of this test is to determine the resistance of the package to moisture under high temperature and humidity conditions. This test may cause such potential failure mechanisms as metal corrosion or ionic contamination. Unbiased devices are exposed to conditions of 121.5°C, at 15 PSI (one atmosphere), and 100% relative humidity for a period of 96 hours.

2.9 Whisker Growth

This test is to determine the susceptibility of the plated matte tin finish to form a dendrite type of growth referred to as whiskers. One potential effect of excessive whisker growth includes electrical shorting between two adjacent pins. Please note that the minimum matte tin thickness is 400 μin (10 μm) and that a post plating bake or anneal process (150°C for 1 hr) is currently being utilized for all matte tin-plated product to mitigate the risk of tin whiskers. This anneal process is performed within 24 hours after the matte tin deposit.



3.0 QUALIFICATION RESULTS

3.1 Backward Solderability Compatibility Results (J-STD-002 and JESD22-B102), Note 2

Plating Site	Solder Paste Composition	Flux Type	Lead finish	Solder Temp.	Package Type	Result
MTAI / MMT/UTL/ATP/ HANA/UNIS/CARM	Sn60Pb40A	Rosin Flux	100% matte Sn	215°C	SMD	Passed
	Sn60Pb40A	Rosin Flux	100% matte Sn	245°C	Through hole	Passed
MMS/ATK/ATC/CARM	Sn60Pb40A	Rosin Flux	100% matte Sn	215°C	SMD	Passed
	Sn60Pb40A	Rosin Flux	100% matte Sn	245°C	Through hole	Passed

3.2 Forward Solderability Compatibility Results (MIL-STD 883 Method 2003)

Plating Site	Solder Paste Composition	Flux Type	Lead finish	Solder Temperature	Package Type	Result
MTAI / MMT	Sn/Ag/Cu (96.5%/3.0%/0.5%)	100 R-type	Sn/Pb	265°C	SMD & Through hole	Passed
UTL	Sn/Ag/Cu (95.5%/4.0%/0.5%)	145 R-type	Sn/Pb	265°C	SMD	Passed
ATP	Sn/Ag/Cu (95.8%/3.5%/0.7%)	Alpha 100	Sn/Pb	265°C	SMD	Passed
MMT	Sn/Ag/Cu (96.5%/3.0%/0.5%)	100 R-type	Sn/Pb	265°C	SMD	Passed



3.3 Package Reliability Test Results & Release Status By Pincount

Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
3L DPAK	CARM	Pass	Pass MSL1/245C	Pass	Matte Sn	Pass	Pass	Pass		
3L DPAK	ASEW	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		Pass
3L DPAK	GEMC	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
3L SC70	CARM	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SC70	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SC70	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SC70	STAR	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
3L SOT-223	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SOT-223	CARM	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
3L SOT-223	GTBF	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SOT-223	HANA	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SOT-223	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SOT-223	UNIS	Pass	Pass MSL 1 or 3/260C, Note 6	Pass	Matte Sn	Pass	Pass	Pass		
3L SOT-23	CRTK	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
3L SOT-23	JCAP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SOT-23	MMS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SOT-23	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
3L SOT-23	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
3L SOT-23	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
3L SOT-23	STAR	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
3L SOT-23	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
3L SOT-23A	HANA	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SOT23A	JCAP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SOT-23A	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SOT89	CEI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SOT89	CRTK	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
3L SOT89	CRTK	Pass	Pass MSL1/260C	Pass	NiPdAu	N/A	Pass	Pass	Pass	Pass
3L SOT89	HANA	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SOT89	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L SPAK	GTBF	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L TO-220	CARM	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
3L TO-220	GTBF	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
3L TO-247	GTBF	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
3L TO-252	GTBF	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L TO-263	GTBF	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
3L TO-39	MMT	Note 4	Note 4	Pass	Ni/Au	N/A	N/A	Pass	Pass	N/A
3L TO-92	CRTK	Note 4	Note 4	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
3L TO-92	GTK	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
4L SOT143	MMS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
4L SOT143	STAR	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L SOT143	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
4L UDFN	AIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L UDFN (1.0 x 1.0)	STAR	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L UDFN (0.85 x 0.85 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L UDFN (1.0 x 1.0)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L UDFN (1.2 x 1.2 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L UDFN (1.25 x 1.25)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L UDFN (1.0 x 1.0)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L VDFN (1.2 x 1.6 x 0.8)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L VDFN (2.0 x 2.5)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L VDFN (2.5 x 3.0 x 0.9)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L VDFN (3.2 x 5.0 x 0.9)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L VDFN (1.2 x 1.6 x 0.8)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L VDFN (2.0 x 2.5)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L VDFN (2.5 x 3.0 x 0.9)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L VDFN (3.2 x 5.0 x 0.9)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L VDFN (5 x 7 x 0.9)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L VFLGA (2.5x2.0)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L VFLGA (2.0x1.6)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L VFLGA (1.6x1.2)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
4L WDFN (1.2 x 1.6 x 0.8)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
4L WLCSP (0.88 x 0.88 x 0.58)	SILTECH	Pass	Pass MSL1/260C	N/A	SnAgCu	Pass	Pass	Pass		
5L DDPAK	CARM	Pass	Pass MSL1/245C	Pass	Matte Sn	Pass	Pass	Pass		
5L SC70	HANA	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L SC70	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L SC70	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L SC70 (COL)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
5L SC70	STAR	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
5L SC70	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
5L SOT223	GTBF	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L SOT223	HANA	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L SOT223	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L SOT23	CARM	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
5L SOT23	HANA	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L SOT23	MMS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L SOT23	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L SOT23	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L SOT23	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L SOT23	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	N/A
5L SOT23	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
5L SOT23	STAR	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
5L SOT23	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
5L SOT23(COL)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L SPAK	GTBF	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L TO-220	CARM	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
5L TO-220	GTBF	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
5L TO-247	GTBF	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
5L TO-252	GTBF	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L TO-263	GTBF	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L TSOT (2.9x1.6x0.9)	ATP	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L TSOT	STAR	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
5L TSOT	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
5L TSOT	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L DFN (2x2x0.9)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L LLGA (7 x 5 x 1.4)	UNIS	Pass	Pass MSL3/260C	Pass	Ni/Au	Pass	Pass	Pass		
6L SC70 (COL)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
6L SC70	STAR	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L SC70	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L SOT23	MMS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
6L SOT23	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
6L SOT23 (COL)	MTAI	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L SOT23	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
6L SOT23	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
6L SOT23 (COL)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L SOT23	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
6L SOT23	STAR	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L SOT23	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L TDFN (2x2x0.8)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L TSOT (2.9x1.6x0.9)	ATP	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
6L TSOT (2.9 x 1.6 x 1.0)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
6L TSOT (2.9 x 1.6 x 1.0)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L UDFN (1.3 x 2.0 x 0.6)	TICP	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L UDFN (2 x 2 x 0.6)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L UDFN (1.2 x 1.2 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L UDFN (2 x 2 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L UDFN (2 x 2 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
6L UQFN (3x1.6x0.55)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
6L UQFN (1.2x1.2x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L UQFN (1x1x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L VDFN (1.6 x 1.6 x 0.8)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L VDFN (2 x 2 x 0.9)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L VDFN (1.6 x 1.6 x 0.8)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L VDFN (2 x 2 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
6L VDFN (2.0 x 2.5)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L VDFN (2.5 x 3.0 x 0.9)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L VDFN (3.2 x 5.0 x 0.9)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L VDFN (5 x 7 x 0.9)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L VFLGA (3x3x0.85)	UNIB	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
6L VFLGA (2.5x2.0)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L VFLGA (1.6x1.2)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L VFLGA (2.0x1.6)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L WDFN (1.6 x 1.6 x 0.8)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L WDFN (1.6 x 1.6 x 0.8)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L WLCSP (1.2 x 0.8 x 0.63)	JCAP	Pass	Pass MSL1/260C	N/A	SnAgCu	Pass	Pass	Pass		
6L WLCSP WLP084132D	SILTECH	Pass	Pass MSL1/260C	N/A	SnAgCu	Pass	Pass	Pass		
6L WLCSP (1.5 x 1.0)	JCAP	Pass	Pass MSL1/260C	N/A	SnAgCu	Pass	Pass	Pass		
6L X2DFN (1.2 x 1.2 x 0.4)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
6L X2SON (1.5x1.5x0.4)	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
6L XSON (1.5x1.5x0.45)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
7L SOIC	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
7L SPAK	GTBF	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L DFN (3x3x0.9)	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L DFN (3x3x0.9)	ATP	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L DFN (2x3x0.9)	CARS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
8L DFN (4x4x0.9)	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L DFN (4x4x0.9)	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L DFN (4x4)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L DFN (2x3x0.9)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L DFN (4x4x0.9)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L DFN (2x2x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L DFN (2x3x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L DFN (3x3x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L DFN (4x4x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L DFN (5x6x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L MSOP	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L MSOP	CARM	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
8L MSOP	HANA	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L MSOP	MMS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L MSOP	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L MSOP	OSE	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L MSOP	SIGT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L MSOP	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
8L MSOP (3 x 3 x 1.0)	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L MSOP (3 x 3 x 1.0)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L MSOPEP (3 x 3 x 1.0)	STAR	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
8L MSOPEP (3 x 3 x 1.0)	UNIS	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L PDIP	ASSH	Note 4	Note 4	Pass	Matte Sn		Pass	Pass		
8L PDIP	ATP	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
8L PDIP	CEI	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
8L PDIP	GTK	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
8L PDIP	MMS	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
8L PDIP	MMT	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
8L PDIP	MTAI	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
8L PDIP	UNIB	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
8L PDIP	UNIS	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
8L PDIP	UTL	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
8L PDIP	VGT	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC	ASSH	Pass	Pass MSL 1 or 3/260C, Note 8	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC	ATC	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC	ATP	Pass	Pass MSL2/260C	Pass	TLPPF	Pass	Pass	Pass		
8L SOIC	CARM	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
8L SOIC	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC (EIAJ)	GTK	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC	GTK	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
8L SOIC (EIAJ)	GTK	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L SOIC (EIAJ)	HANA	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC	LPI	Pass	Pass MSL 1 or 3/260C, Note 7	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC (EIAJ)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC	LPI	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L SOIC (EIAJ)	LPI	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L SOIC	MMS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
8L SOIC	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC (EIAJ)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC (COL)	MTAI	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L SOIC (EIAJ)	MTAI	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L SOIC	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
8L SOIC	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
8L SOIC (EIAJ)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC	VGT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIC	STAR	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L SOIC fused	STAR	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L SOIC	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L SOIC fused	UNIS	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOICEP	ATP	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
8L SOICEP	UNIS	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOICEP	STAR	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L SOIJ	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOIJ	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass
8L SOIJ-S	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L SOT-23	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L TDFN (2x3x0.75)	ATP	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L TDFN (6x8x0.8)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L TDFN (2x3x0.75)	SCC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L TDFN (2x3x0.75)	SCM	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L TDFN (2x3x0.8)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L TDFN (2x3x0.8)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L TDFN-S (5x6x0.8)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L TDFN-S (5x6x0.8)	GTK	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L TDFN-S (5x6x0.8)	GTK	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L TDFN-S (5x6x0.8)	LPI	Pass	Pass MSL 1 or 3/260C, Note 9	Pass	Matte Sn	Pass	Pass	Pass		
8L TDFN-S (5x6x0.8)	LPI	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L TSSOP	ASSH	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L TSSOP	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L TSSOP	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L TSSOP	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
8L TSSOP	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L TSSOP	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L TSSOP	VGT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L TSSOP	AIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L UDFN	ASE	Pass	Pass MSL1/260C	Pass	NiPdAu			Pass		
8L UDFN (2x3x0.6)	ATP7	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L UDFN (2x2x0.55)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L UDFN (1.2 x 1.2 x 0.6)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L UDFN (3x3x0.5)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L UDFN (2x3x0.5)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L UDFN (2x3x0.5) COL	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L UQFN (1.2 x 1.2 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L USON (2x3x0.6) COL	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L VDFN (3x3x0.85)	ATP	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L VDFN (6x5)	ATP	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L VDFN (3 x 3 x 1.0)	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L VDFN (2 x 2 x 0.6)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L VDFN (2 x 2 x 0.9)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L VDFN (3.0 x 3.0 x 0.9)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L VDFN (2 x 2 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L VDFN (2 x 2 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
8L VDFN (3.0 x 3.0 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L VDFN (4 x 4 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L VDFN (4x4x1.0)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
8L VDFN (5x5x1.0)	UTL	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
8L WDFN (3x3x0.8)	CARC	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	N/A
8L WDFN (2x2x0.8)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass	N/A	N/A
8L WDFN-WF (2x2)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass	N/A	N/A
8L WLCSP (2.1 x 1.1)	JCAP	Pass	Pass MSL1/260C	N/A	SnAgCu	Pass	Pass	Pass		
8L WSON (5x6x0.8)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L WSON (5x6x0.8)	GTK	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L WSON (5x6x0.8)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L X2DFN (1.6 x 1.2 x 0.4)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
8L X2SON (2x2x0.40)	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L XSON (2x2x0.45)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
8L XSON (2x2x0.45)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
9L WLCSP (13 x 1.3 x 7.15)	JCAP	Pass	Pass MSL1/260C	N/A	SnAgCu	Pass	Pass	Pass		
10L DFN (3x3x0.9)	CARS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
10L DFN (3x3x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
10L MSOP	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
10L MSOP	GTK	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L MSOP	HANA	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
10L MSOP	OSE	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
10L MSOP	SIGT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
#REF!	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
10L MSOP	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L QFN (1.3x1.8x0.60)	SCC	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
10L QFN (1.8x1.3x0.55mm)COL	SCM	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
10L QFN (2.1x1.6x0.55mm)COL	SCM	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
10L TDFN (3x3x0.8)	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
10L TDFN (2.5 x 2.0 x 1.15)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L UDFN (2 x 2 x 0.6)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L UDFN (2 x 2 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L UDFN (2.5 x 2.5 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L UDFN(3.3x3.3x0.5)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
10L UQFN (1.6x2.1x0.55mm)	SCC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L UQFN (1.3x1.8x0.55mm)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L UQFN (1.6x2.1x0.55mm)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L VDFN (3x3x0.85)	ATP	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L VDFN (3x4x1.0)	CARC	Pass	Pass MSL1/260C	Pass	NiPdAu	N/A	Pass	Pass	Pass	Pass
10L VDFN (3x3x0.85)	HANA	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L VDFN (3x3x0.85)	SCM	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
10L VDFN (3.0 x 3.0 x 0.9)	TICP	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L VDFN (3.0 x 3.0 x 0.9)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L VDFN (2.5 x 2.5 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L VDFN (3.0 x 3.0 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L VDFN (2.5x2)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L VQFN (2 x 2.0 x 0.9)	JCAP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
10L VQFN (1.2 x 2.0 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
10L VQFN (2 x 2 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L WDFN (3x3x0.8)	CARC	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
10L WDFN (4x4x0.8)	CARC	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
10L X2DFN (2 x 2 x 1.4)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L X2DFN (2.5 x 2.5 x 0.4)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
10L X2QFN (1.5x1.5x0.4)	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
12L QFN (4x4x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
12L QFN (4x4x0.9)	CARC	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
12L QFN (4x4x0.9mm)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
12L QFN (4x4x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
12L UDFN (2.5 x 2.5 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
12L UQFN (2 x 2 x 0.6)	ASE	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
12L UQFN (2 x 2 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
12L UQFN (2.0 x 2.5 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
12L VDFN (4x4x1.0)	CARC	Pass	Pass MSL1/260C	Pass	NiPdAu	N/A	Pass	Pass	Pass	N/A
12L VDFN (3.0 x 3.0 x 0.9)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
12L VDFN (3.0 x 3.0 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
12L VDFN (3.0 x 3.0 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
12L VDFN (4 x 4 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
12L VQFN (3 x 3 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
12L WQFN (3x3x0.8)	CARC	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
12L X2QFN (2x2x0.40)	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
12L XQFN (2x2x0.45)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L PDIP	ATP	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
14L PDIP	HANA	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
14L PDIP	MMT	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
14L PDIP (.300In)	UNIB	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
14L PDIP	UNIS	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
14L PDIP	VGT	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
14L SOIC	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass
14L SOIC	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L SOIC	CRTK	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
14L SOIC	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L SOIC	HANA	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L SOIC	LPI	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
14L SOIC	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L SOIC	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L SOIC	OSE	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L SOIC	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L SOIC	UTL	Pass	Pass MSL 1 or 3/260C, Note 7	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
14L SOIC	ATP	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
14L SOIC	UNIB	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L TDFN (3.5 x 3.0 x 1.15)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
14L TSSOP	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L TSSOP	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L TSSOP	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L TSSOP	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L TSSOP	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L TSSOP	VGT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L TSSOPEP	UNIS	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L UQFN (2.5 x 2.5 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
14L VDFN (4.5x3x0.9)	ASE	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
14L VQFN (2.5 x 2.5 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
14L VQFN (2.5 x 3.2 x 0.9)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
14L WDFN (3 x 2 x 0.8)	UNIC	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L PDIP	ATP	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
16L PDIP -300	CRTK	Note 4	Note 4	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
16L PDIP	GTK	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
16L PDIP	HANA	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
16L PDIP	MMT	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
16L PDIP (.300In)	UNIB	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
16L PDIP	UNIS	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (4x4x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (5x5x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (3 x 3)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
16L QFN (4 x 4)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
16L QFN (4 x 4)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
16L QFN (4x4x0.9)	CARC	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
16L QFN (4x4x0.9)	CARS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (5x5x0.85)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (4x4x0.9)	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (3x3x0.9)	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (3x3x0.9)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (4x4x0.9)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (3x3x0.9)	SCC	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (5x5x0.9)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (3x3x0.85)	SCM	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
16L QFN (4x4x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (5x5x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (3x3x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (4x4x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QFN (4x4x0.9)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L QFN (5x5x0.9)	UTL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QSOP	ATP	Pass	Pass MSL 1 or 2/260C, Note 5	Pass	Matte Sn	N/A	Pass	Pass	-	-
16L QSOP	HANA	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QSOP	MMS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QSOP	OSE	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QSOP	UNIB	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QSOP	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QSOP	ATK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L QSOPEP	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L SOIC -300	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L SOIC -300	ASSH	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
16L SOIC -150	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L SOIC -300	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L SOIC -300	CARM	Pass	Pass MSL1/250C	Pass	Matte Sn	N/A	Pass	Pass	Pass	N/A
16L SOIC -150	CARM	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
16L SOIC -150	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
16L SOIC -300	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L SOIC -150	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
16L SOIC -150	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
16L SOIC -300	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L SOIC (7.5)	ATP	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L SOIC (7.5)	ATP	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L SOIC (7.5)	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L SOIC (7.5)	UNIB	Pass	Pass MSL 1 or 2/260C, Note 5	Pass	Matte Sn	Pass	Pass	Pass		
16L SOIC (7.5)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L SSOP (5.3)	ATP	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L TSSOP	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L TSSOP	UTL	Pass	Pass MSL 1 or 3/260C, Note 6	Pass	Matte Sn	Pass	Pass	Pass		
16L TSSOP	AIC	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L TSSOP	ATP	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L TSSOP	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L TSSOP	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L TSSOPEP	UNIS	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L UQFN (3x3x0.55)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L UQFN (2.0 x 2.5 x 0.6)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L UQFN (4x4x0.5)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L VQFN (3x3x0.9)	CARC	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
16L VQFN (3 x 3 x 0.9)	GTK	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L VQFN (3x3x0.9)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L VQFN (3 x 3 x 0.9)	TICP	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L VQFN (2.5 x 2.5 x0.9)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L VQFN (3 x 3 x 0.9)	UNIC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L VQFN (3 x 3 x 0.9)	UNIS	Pass	Pass MSL 1 or 2/260C, Note 5	Pass	NiPdAu	Pass	Pass	Pass		
16L VQFN (3.0 x 3.5 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass	-	-
16L VQFN (4 x 4 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L VQFN (3 x 3 x 0.9)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L VQFN (4 x 4 x 0.9)	ATK	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L VQFN (4 x 4)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
16L VQFN (3 x 3 x 0.9)	TICP	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L VQFN (2.5 x 2.5 x0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L VQFN (5 x 5 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L WLCSP (2.215x2.16x0.64)	ASE	Pass	Pass MSL1/260C	N/A	SnAgCu	Pass	Pass	Pass		
16L WLCSP (1.8 x 1.7 x 0.67)	JCAP	Pass	Pass MSL1/260C	N/A	SnAgCu	Pass	Pass	Pass		
16L WQFN (3x3x0.8)	CARC	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
16L WQFN (3x3x0.75)	LPI	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
16L X2QFN (2.5x2.5x0.4)	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
17L VQFN (2.5 x 2.8 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
18L PDIP	ATP	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
18L PDIP	MMS	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
18L PDIP	MMT	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
18L PDIP	MTAI	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
18L PDIP	UNIB	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
18L PDIP	UTL	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
18L SOIC (300)	ASSH	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
18L SOIC (3.9)	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
18L SOIC (3.9)	MMS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
18L SOIC (3.9)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
18L SOIC (3.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
18L SOIC (7.5)	ASSH	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
18L SOIC (7.5)	ATP	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
18L SOIC (7.5)	UNIB	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
18L VDFN (5x5x1.0)	CARC	Pass	Pass MSL3/260C	Pass	NiPdAu	N/A	Pass	Pass	Pass	Pass
20L PDIP	ATP	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
20L PDIP	MMT	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
20L PDIP	UNIB	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
20L PLCC	ATP	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L QFN (4x4x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L QFN (4x4)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
20L QFN (4x4x0.9)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
20L QFN (4x4x0.9mm)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L QFN (4x4x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L QFN (2.5 x 3.0 x 1.85)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L QFN (4x4x0.9)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L QFN (4x4x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L QFN (5x5x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L QSOP (.150In)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L QSOP (.150In)	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L SOIC (300)	ASSH	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
20L SOIC	ATP	Pass	Pass MSL 1 or 3/260C, Note 7	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
20L SOIC -300	CARM	Pass	Pass MSL1/250C	Pass	Matte Sn	N/A	Pass	Pass	Pass	
20L SOIC -300	CARM	Pass	Pass MSL1/250C	Pass	SnPb	N/A	Pass	Pass	Pass	
20L SOIC	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L SOIC	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L SOIC	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L SOIC	UTL	Pass	Pass MSL 1 or 3/260C, Note 7	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
20L SOIC (7.5)	ATP	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
20L SOIC (7.5)	UNIB	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L SSOP (7.2 x 5.3)	ASSH	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
20L SSOP	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L SSOP (5.3)	ATP	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
20L SSOP	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L SSOP (5.3)	UNIB	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L SSOP	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L TQFN (2.5 x 3.0 x 1.15)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L TSSOP	ATP	Pass	Pass MSL1 or 3/260C, Note 7	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
20L TSSOP (4.4)	ATP	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
20L TSSOP (4.4)	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L TSSOP	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	PAss	N/A	Pass	Pass	Pass
20L TSSOP (4.4)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L TSSOP (4.4)	UTL	Pass	Pass MSL 1 or 3/260C, Note 7	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
20L TSSOPEP (4.4)	UNIS	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L UQFN (3x3x0.55)	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L UQFN (4x4x0.55)	LPI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L UQFN (3x3x0.5)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L UQFN (4x4x0.5)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L VDFN (4 x 5 x 0.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
20L VQFN (5 x 5)	ASCL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L VQFN (3 x 3)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L VQFN	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	PAss	N/A	Pass	Pass	Pass
20L VQFN (4 x 4)	ATC	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L VQFN	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	PAss	N/A	Pass	Pass	Pass



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
20L VQFN (5 x 5)	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L VQFN (3 x 3)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L VQFN (4 x 4)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L VQFN (3 x 3)	UNIC	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L VQFN (3 x 3)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L VQFN (3 x 3)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
20L VQFN (4 x 3)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
20L VQFN (5.0 x 3.2)	UTL	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
20L VQFN	UTL	Pass	Pass MSL3/260C	Pass	Matte Sn	PAss	N/A	Pass	Pass	Pass
20L VQFN (3 x 3 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
20L WLCSP	ASE	Pass	Pass MSL1/260C	Pass	SnAgCu			Pass		
22L PDIP (.300In)	ATP	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
22L SIP (5x7x0.85)	UNIB	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
22L TFBGA (5x7)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L PDIP	ATP	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
24L PDIP	MMT	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
24L PDIP (.300In)	UNIB	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
24L QFN (5x5x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L QFN (4 x 4)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
24L QFN (6 x 6)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
24L QFN (4x5)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
24L QFN (5x5x0.85)	ATK	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L QFN (4x5x1.0)	CARC	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
24L QFN (5x5x0.9mm)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L QFN (5x5x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L QFN (4x4x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L QSOP (3.9x4.9x1.65)	ATP	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L QSOP (3.9x4.9x1.65)	OSE	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L SOIC (300)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
24L SOIC	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L SOIC	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass
24L SOIC -300	CARM	Pass	Pass MSL1/250C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
24L SOIC	GTK	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass		
24L SOIC	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L SOIC (7.5)	ATP	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
24L SOIC (7.5)	UNIB	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L SSOP (8.2 x 5.3)	ASSH	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
24L SSOP	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L SSOP (5.3)	ATP	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
24L SSOP	GTK	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L SSOP	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L TBGA (6x8x1.2)	LPI	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
24L TSSOP (4.4)	ATP	Pass	Pass MSL1 or 3/260C, Note 10	Pass	Matte Sn	Pass	Pass	Pass		
24L TSSOP (4.4)	CARM	Pass	Pass MSL1/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
24L TSSOP (4.4)	UNIS	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L TSSOPEP (4.4)	UNIS	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L VQFN	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	PAss	N/A	Pass	Pass	Pass
24L VQFN (4x4x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L VQFN (4x4x0.85)	ATK	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L VQFN (4x4x0.9mm)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L VQFN (4 x 4 x 0.9)	GTK	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L VQFN (4x4)	MMT	Pass	Pass MSL 1 or 3/260C, Note 9	Pass	Matte Sn	Pass	Pass	Pass		
24L VQFN (4x4)	MTAI	Pass	Pass MSL 2/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L VQFN (4x4x0.9mm)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L VQFN (4x4x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L VQFN (4 x 4 x 0.9)	TICP	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
24L VQFN (3 x 3 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
24L VQFN (3 x 4 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
24L VQFN (4 x 4 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
24L VQFN (4 x 4 x 0.9)	ATC	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
24L VQFN (4 x 4 x 0.9)	ATK	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
24L WQFN (4x4x0.75)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
25L FPBGA (5.7x5)	CARS	Pass	Pass MSL3/240C	Pass	SnPb	N/A	Pass	Pass	Pass	N/A



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
25L UFBGA (3x3x0.62)	ATK	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
25L VFBGA (3x3x0.8)	ATK	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
25L VFBGA (3x3x0.8)	OSE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
25L WLCSP (1.97X1.97X0.57mm)	ATT	Pass	Pass MSL1/260C	Pass	SnAgCu	Pass	Pass	Pass		
25L WLCSP (1.97X1.97X0.57mm)	NEP	Pass	Pass MSL1/260C	Pass	SnAgCu	Pass	Pass	Pass		
26L BCC (6x6x0.8)	UTL	Pass	Pass MSL3/245C	Pass	NiPdAu	N/A	Pass	Pass	Pass	Pass
26L FPBGA (6x5.35)	CARS	Pass	Pass MSL3/260C	Pass	SnAgCu	N/A	Pass	Pass	Pass	
26L LLGA (6x6x0.60)	UTL	Pass	Pass MSL3/260C	Pass	NiPdAu	N/A	Pass	Pass	Pass	
26L VQFN (4 x 4 x 0.9)	UNIS	Pass	Pass MSL 1 or 2/260C, Note 5	Pass	NiPdAu	Pass	Pass	Pass		
26L VQFN (3 x 5 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
28L PDIP	MTAI	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
28L PDIP	UTL	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
28L PLCC (11.5 x 11.5)	ASEM	Pass	Pass MSL3/245C	Pass	Matte Sn		Pass	Pass		
28L PLCC	ATP	Pass	Pass MSL1/245C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
28L PLCC	ATP	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L PLCC	MMT	Pass	Pass MSL 1 or 3/245C, Note 5	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
28L PLCC (11.5x11.5x4)	OSE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L QFN (6x6x0.9)	ASAC	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L QFN (5x5x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L QFN (4 x 5)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
28L QFN (5x5x0.9mm)	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
28L QFN (6x6x0.9)	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L QFN (5x5x0.85)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L QFN (6x6x0.9)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L QFN (5x5x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L QFN (6x6x0.9)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L QFN (6x6x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L QFN (5x5x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L QFN-S (6x6x0.9)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L QFN-S (6x6x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L SOIC (300)	ASSH	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
28L SOIC	ATP	Pass	Pass MSL 1 or 3/260C, Note 7	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
28L SOIC (.300in)	CARM	Pass	Pass MSL1/250C	Pass	Matte Sn	N/A	Pass	Pass	Pass	
28L SOIC	MMS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L SOIC	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L SOIC	MTAI	Pass	Pass MSL 1 or 3/260C, Note 5	Pass	Matte Sn	Pass	Pass	Pass		
28L SOIC (7.5)	ATP	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
28L SOICWEP (7.5)	ATP	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
28L SPDIP	GTK	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
28L SPDIP	MMT	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
28L SPDIP	MTAI	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
28L SPDIP	UNIS	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
28L SSOP	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L SSOP (5.3)	ATP	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
28L SSOP (5.3)	GTK	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L SSOP (5.3)	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L SSOP (5.3)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L SSOP (5.3)	UNIB	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L TSSOP (4.4)	ATP	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
28L TSSOP (4.4)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L UQFN (4x4x0.6)	ASE	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L UQFN (4x4x0.5)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L UQFN (6x6x0.5)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L VQFN (5x5x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L VQFN (5x5x0.85)	ATC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L VQFN (5x5x0.85)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L VQFN (4x4x0.1)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L VQFN (6 x 6)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
28L VQFN (4 x 6 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
28L VQFN (4 x 4 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
30L WLCSP (1.97X1.97X0.57mm)	ATT	Pass	Pass MSL1/260C	Pass	SnAgCu	Pass	Pass	Pass		
30L WLCSP (2.5X2.9X0.57)	ATT	Pass	Pass MSL1/260C	Pass	SnAgCu	Pass	Pass	Pass		
30L WLCSP (1.97X1.97X0.57mm)	NEP	Pass	Pass MSL1/260C	Pass	SnAgCu	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
32L eTQFP (7x7)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
32L LQFP	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass
32L LQFP (07 x 07 x 1.6)	TICP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L PDIP	GTK	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
32L PDIP	LPI	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
32L PLCC (13.97 x 11.43)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
32L PLCC	GTK	Pass	Pass MSL3/245C	Pass	Matte Sn	Pass	Pass	Pass		
32L PLCC	LPI	Pass	Pass MSL3/245C	Pass	Matte Sn	Pass	Pass	Pass		
32L PLCC	MMT	Pass	Pass MSL2 or 3/245C, Note 9	Pass	Matte Sn	Pass	Pass	Pass		
32L QFN (5x5x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L QFN (5 x 5)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
32L QFN (5 x 5)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
32L QFN (8 x 8)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
32L QFN (5x5x0.9mm)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L QFN (5x5x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L QFN (5x5x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	N/A	Pass		
32L SQFN	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L TQFN (5x5)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
32L TQFN	SIGN	Pass	Pass MSL3/260C	Pass	Matte Sn			Pass		
32L TQFP	ASCL	Pass	Pass MSL3/240C	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass
32L TQFP	ASE	Pass	Pass MSL3/240C	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
32L TQFP (7x7x1.2)	ATP	Pass	Pass MSL 2 or 3/260C, Note 8	Pass	Matte Sn	Pass	Pass	Pass		
32L TQFP (7x7x1.2)	ATP	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
32L TQFP (5x5)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
32L TQFP (7x7x1)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L TQFPEP (7 x 7 x 1.2)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L TQFPEP (7 x 7 x 1.2)	ATP	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
32L TSOP (8x14)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L TSOP (8x14)	SPIL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L UQFN	ATP	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	N/A	Pass		
32L VQFN (5 x 5 x 0.9)	ASCL	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
32L VQFN	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass
32L VQFN (4x4x0.9)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	NA	Pass	Pass		
32L VQFN (5x5x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L VQFN (6x6x0.9)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L VQFN (5x5x0.85)	ATC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L VQFN	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass
32L VQFN (5x5x0.9mm)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L VQFN (5x5x1.0)	CARC	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
32L VQFN (5x5x0.85)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L VQFN (5x5)	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L VQFN (5x5x0.9)	MTAI	Pass	Pass MSL 1 or 2/260C, Note 6	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
32L VQFN (5x5x1)	MTAI	Pass	Pass MSL 1 or 3/260C, Note 5	Pass	Matte Sn	Pass	Pass	Pass		
32L VQFN (5x5x0.9mm)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L VQFN (5x5x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
32L VQFN (5 x 5 x 0.9)	UNIC	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
32L VQFN (4 x 6 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
32L VQFN (5 x 5 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
32L VQFN (5x5x0.9)	UTL	Pass	Pass MSL3/260C	Pass	Matte Sn	PAss	N/A	Pass	Pass	Pass
32L VQFN (5 x 5 x 0.9)	TICP	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
32L WQFN (5x5x0.8)	CARC	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
32L WQFN (6x6x0.8)	UTL	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
33L VQFN (6x6x1.0)	CARC	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
34L QFN (4 x 6 x 1.9)	UNIS	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
34L VQFN (4 x 6 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
34L WFBGA (4x6x0.8)	LPI	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
34L WFBGA (4x6x0.8)	PTI	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
35L WLCSP	ASE	Pass	Pass MSL1/260C	Pass	SnAgCu			Pass		
36L QFN (4x6)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
36L QFN (4x6)	MMT	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
36L SQFN (6x6x1)	ASE	Pass	Pass MSL 1 or 3/260C, Note 5	Pass	Matte Sn	Pass	Pass	Pass		
36L SQFN (6x6x0.9mm)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
36L SQFN (6x6x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
36L SSOP (15.4 x 7.5)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
36L UQFN (5x5x0.6)	ASE		Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
36L VQFN (6x6x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
36L VQFN (6x6x0.85)	ATC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
36L VQFN (6x6x0.9mm)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
36L VQFN (6x6x0.85)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
36L VQFN (4x6)	MMT	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass		
36L VQFN (6x6x0.9mm)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
36L VQFN (6x6x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
36L VQFN (4.5 x 4.5 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
36L VQFN (5 x 5 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
36L VTLA (5x5x0.9)	ASAC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
36L WLCSP	ASE	Pass	Pass MSL1/260C	Pass	SnAgCu			Pass		
38L LLGA (5 x 7 x 1.4)	UNIS	Pass	Pass MSL3/260C	Pass	Ni/Au	Pass	Pass	Pass		
38L TSSOP (4.4)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
38L XQFN	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn			Pass		
40L PDIP (600)	ASSH	Note 4	Note 4	Pass	Matte Sn		Pass	Pass		
40L PDIP (.600In)	ATP	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
40L PDIP	CEI	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
40L PDIP (.600in)	CRTK	Note 4	Note 4	Pass	Matte Sn	N/A	Pass	Pass	Pass	
40L PDIP	GTK	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
40L PDIP	LPI	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
40L PDIP	MMT	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
40L PDIP	MTAI	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
40L PDIP	UTL	Note 4	Note 4	Pass	Matte Sn	Pass	Pass	Pass		
40L QFN (6 x 6)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
40L QFN (6 x 6)	MMT	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
40L QFN (5x5x0.9)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
40L QFN (5x5x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
40L QFN (6x6x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
40L TSOP (10x20)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
40L UQFN (5x5x0.5)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
40L VFBGA (4x4x0.8)	OSE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
40L VQFN (6x6x0.9)	ASCL	Pass	Pass MSL 1 or 3/260C, Note 5	Pass	Matte Sn	NA	Pass	Pass		
40L VQFN (6x6x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
40L VQFN (6x6x0.9)	ASSZ	Pass	Pass MSL3/260C	Pass	NiPdAu	NA	Pass	Pass		
40L VQFN (6x6x0.9mm)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
40L VQFN (6x6x1.0)	CARC	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
40L VQFN (6x6x0.85)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
40L VQFN (5x5)	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
40L VQFN (6x6)	MMT	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass		
40L VQFN (6x6x0.9mm)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
40L VQFN (6x6x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
40L WQFN (5x5x0.8)	CARS	Pass	Pass MSL3/260C	Pass	NiPdAu	N/A	Pass	Pass	Pass	Pass
40L WQFN (6x6x0.8)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L CERQUAD (.650x.650in)	CORW	Note 4	Note 4	Pass	SnPb	N/A	N/A	Pass		
44L CERQUAD (.650x.650in)	MMT	Note 4	Note 4	Pass	SnPb	N/A	N/A	Pass		
44L CERQUAD (.650x.650in)	PTX	Note 4	Note 4	Pass	SnPb	N/A	N/A	Pass		
44L eLQFP (10 x 10)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
44L LQFP	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	PAss	N/A	Pass	Pass	Pass
44L LQFP	ATK	Pass	Pass MSL3/260C	Pass	Matte Sn	PAss	N/A	Pass	Pass	Pass
44L LQFP	ATP	Pass	Pass MSL 1 or 3/260C, Note 5	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass
44L MQFP (10x10x2)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L MQFP (10x10x2)	MMT	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L PLCC (16.59 x 16.59)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
44L PLCC	ATP	Pass	Pass MSL 1 or 3/245C, Note 7	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
44L PLCC	GTK	Pass	Pass MSL3/245C	Pass	Matte Sn	Pass	Pass	Pass		
44L PLCC	LPI	Pass	Pass MSL3/245C	Pass	Matte Sn	PAss	N/A	Pass	Pass	Pass
44L PLCC	MMS	Pass	Pass MSL1/245C	Pass	Matte Sn	Pass	Pass	Pass		
44L PLCC	MMT	Pass	Pass MSL1/245C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
44L PLCC	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L PLCC	UNIB	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L PQFP (10x10x2.35)	CARS	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
44L QFN (7 x 7)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
44L QFN (8x8x0.9)	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L QFN (8x8x0.9)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L QFN (8x8x0.9)	UNIS	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L QFN (8x8x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L QSOP -7.5	CARS	Pass	Pass MSL3/250C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
44L TQFP (10x10x1)	ASAC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L TQFP (10x10x1)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L TQFP (10 x 10)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
44L TQFP (10x10x1)	ATK	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L TQFP	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
44L TQFP (10x10x1)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L TQFP (10x10x1)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L TQFP (10x10x1)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L TQFPEP (10x10x1)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L VLAP (6x6x0.9)	ASAC	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
44L VQFN	ASCL	Pass	Pass MSL1/260C	Pass	Matte Sn			Pass		
44L VQFN	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass		Pass
44L VQFN (7 x 7 x 0.9)	ATK	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L VQFN	ATP	Pass	Pass MSL 1 or 3/260C, Note 5	Pass	Matte Sn	N/A	Pass	Pass		Pass
44L VQFN (8 x 8)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
44L VQFN (7 x 7 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
44L VQFN	UTL	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass		Pass
44L VQFN (7 x 7 x 0.9)	UNIS	Pass	Pass MSL2/260C	Pass	NiPdAu	Pass	Pass	Pass		
44L WQFN (7x7x0.8)	CARC	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
45L SIP (12.42x8.92x1.98)	MMT	Pass	Pass MSL3/250C	Pass	Matte Sn	Pass	Pass	Pass		
45L WLCSP	ASE	Pass	Pass MSL1/260C	Pass	SnAgCu			Pass		
45L WLCSP	JCAP	Pass	Pass MSL1/260C	Pass	SnAgCu			Pass		
48L eTQFP (7 x 7)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
48L FPBGA (7x8)	CARS	Pass	Pass MSL3/260C	Pass	SnAgCu	N/A	Pass	Pass	Pass	
48L LFBGA (15x15x1.4)	ASSH	Pass	Pass MSL3/260C	N/A	Ni/Au	Pass	Pass	Pass		
48L LQFP (7x7)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L LQFP (7 x 7)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
48L LQFP (7x7x1.4)	CARS	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
48L LQFP (07 x 07 x 1.6)	OSE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L LQFP (07 x 07 x 1.6)	TICP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L LQFP (7x7x1.4)	UNIB	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	
48L QFN (7x7x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L QFN (7 x 7)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
48L QFN (7 x 7)	MMT	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
48L QFN (7x7x0.9mm)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L QFN (7x7x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
48L SQFN	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L SSOP (5.3)	OSE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L TFBGA (6x8x1.2)	APTS	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L TFBGA (6x8x1.2)	ASSH	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L TFBGA (6x8x1.2)	KTI	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L TFBGA (6x8x1.2)	LPI	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L TFBGA (6x8x1.2)	PTI	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L TFBGA (6x8x1.2)	SPIL	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L TLLGA	UTL	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	N/A	Pass	Pass	Pass
48L TQFN (7x7)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
48L TQFP (7x7)	ASCL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L TQFP (7x7)	ASCL		Pass MSL3/260C	Pass	NiPdAu					
48L TQFP (7x7x1.4)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L TQFP	ASE		Pass MSL3/260C	Pass	NiPdAu					
48L TQFP (7 x 7)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
48L TQFP (7x7x1mm)	ATK	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L TQFP (7x7x1)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L TQFP	ATP		Pass MSL3/260C	Pass	NiPdAu					
48L TQFP (7x7)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L TQFP (07 x 07 x 1.2)	OSE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L TQFP (07 x 07 x 1.2)	TICP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
48L TQFP (07 x 07 x 1.2)	ATP	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
48L TSOP (12x20)	LPI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L TSOP (12x20)	SPIL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L UQFN (6x6x0.6)	ATC	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L UQFN (6x6x0.5)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L VQFN	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass
48L VQFN (5x6.5x0.9)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	NA	Pass	Pass		
48L VQFN (6x6x0.9)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	NA	Pass	Pass		
48L VQFN (7x7x0.9)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	NA	Pass	Pass		
48L VQFN	ASE	Pass	Pass MSL 1 or 3/260C, Note 9	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass
48L VQFN (6x6x0.9)	ASSZ	Pass	Pass MSL3/260C	Pass	Matte Sn	NA	Pass	Pass		
48L VQFN (7x7x0.9)	ASSZ	Pass	Pass MSL3/260C	Pass	Matte Sn	NA	Pass	Pass		
MTAI	ASSZ	Pass	Pass MSL3/260C	Pass	NiPdAu	NA	Pass	Pass		
48L VQFN (7x7x0.85)	ATC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L VQFN (7x7x0.9mm)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
48L VQFN (7x7x1.0)	CARC	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
48L VQFN (7x7x0.85)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L VQFN (7x7)	MMT	Pass	Pass MSL1 or 3/260C, Note 9, 10	Pass	Matte Sn	Pass	Pass	Pass		
48L VQFN (6x6)	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L VQFN (7x7)	MTAI	Pass	Pass MSL 1 or 3/260C, Note 5	Pass	Matte Sn	Pass	Pass	Pass		
48L VQFN (7x7x0.9mm)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
48L VQFN (7x7x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L VQFN (7 x 7 x 0.9)	TICP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L VQFN (6x6)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L VQFN (7x7)	UTL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L VQFN (7 x 7)	UNIS	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
48L VQFN (7x7)	MTAI	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
48L WFBGA (4x6x0.8)	ASCL	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L WFBGA (4x6x0.8)	ATK	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L WFBGA (5x6x0.8)	ATK	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L WFBGA (4x6x0.8)	LPI	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L WFBGA (5x6x0.8)	LPI	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L WFBGA (4x6x0.8)	PTI	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L WFBGA (5x6x0.8)	PTI	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L WFBGA (4x6x0.8)	SPIL	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L WFBGA (5x6x0.8)	SPIL	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L XFLGA (4x6x0.6)	ATK	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
48L XFLGA (5x6x0.6)	ATK	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
49L VFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	PAss	Pass	Pass		
49L WLCSP	ASCL	Pass	Pass MSL1/260C	Pass	SnAgCu	Pass	PAss	Pass		
49L WLCSP	ASE	Pass	Pass MSL1/260C	Pass	SnAgCu	Pass	PAss	Pass		
49L WLCSP	ATK	Pass	Pass MSL1/260C	Pass	SnAgCu	Pass	PAss	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
50L VFBGA (5x3.5x0.9)	ASCL	Pass	Pass MSL3/260C	Pass	SnAgCu	N/A	Pass	Pass		
52L B1QFN (8 x 8 x 3)	UNIS	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
52L B2QFN (10 x 10 x 4)	UNIS	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
52L LQFP (10 x 10 x 1.6)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
52L PLCC	ATP	Pass	Pass MSL3/245C	Pass	Matte Sn			Pass		
52L VQFN (8x8)	ATC	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
52L VQFN (8x8)	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
52L VQFN (7.5x10)	UNIC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
52L VQFN (7.5x10)	UTL	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
52L XQFN	ASE	Pass	Pass MSL1/260C	Pass	Matte Sn			Pass		
53L QFN (7x7)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
56L QFN (8 x 8)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
56L QFN (8 x 8)	MMT	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
56L TQFN (8x8)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
56L VFLGA (7x7x0.9)	ASCL	Pass	Pass MSL3/260C	Pass	Ni/Au	NA	Pass	Pass		
56L VFLGA (7x7x1.0)	ASCL	Pass	Pass MSL3/260C	Pass	SnAgCu	NA	Pass	Pass		
56L VQFN (7x7x0.9)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	NA	Pass	Pass		
56L VQFN (8x8x0.9)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	NA	Pass	Pass		
56L VQFN (8x8x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
56L VQFN (7x7x0.9)	ASSZ	Pass	Pass MSL3/260C	Pass	Matte Sn	NA	Pass	Pass		
56L VQFN (7x7x0.9)	ASSZ	Pass	Pass MSL3/260C	Pass	NiPdAu	NA	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
56L VQFN (8x8x0.9mm)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
56L VQFN (8x8x1.0)	CARC	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
56L VQFN (8x8x0.85)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
56L VQFN (8x8)	MMT	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass		
56L VQFN (8x8x0.9mm)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
56L VQFN (8x8x0.85)	SCM	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
56L VQFN (8x8x1.0)	UTL	Pass	Pass MSL3/260C	Pass	NiPdAu	N/A	Pass	Pass	Pass	Pass
56L VQFNEP (8x8)	MTAI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
56L WLCSP	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu			Pass		
56L WLCSP (3.05x3.05)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
56L WLCSP (3.05x3.05)	ASEM	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
56L XQFN	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn			Pass		
60L BLTFBGA (6x6)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
61L VFBGA (5x5x0.9)	ASCL	Pass	Pass MSL3/260C	Pass	SnAgCu	N/A	Pass	Pass		
64L B1QFN (12 x 12 x 3)	UNIS	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L B2QFN (12 x 12 x 4)	UNIS	Pass	Pass MSL2/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L eTQFP (10 x 10)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
64L LBGA (9x9)	ASEM	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
64L LFBGA (8x8)	ASEM	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
64L LGA (5x10)	ASCL	Pass	Pass MSL3/260C	Pass	Ni/Au		Pass	Pass		
64L LQFP (14 x 14)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
64L LQFP (10 x 10)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
64L LQFP	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass
64L LQFP (10 x 10 x 1.6)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass		
64L LQFP (10 x 10 x 1.6)	TICP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L LQFPEP (10 x 10 x 1.6)	TICP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L MQFP (14x20)	ASEM	Pass	Pass MSL3/245C	Pass	Matte Sn		Pass	Pass		
64L PQFP (20x14x3.4)	CARS	Pass	Pass MSL3/245C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
64L QFN (9x9)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
64L QFN (9x9)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
64L QFN (9x9X0.9)	MMT	Pass	Pass MSL1 or 3/260C, Note 10	Pass	Matte Sn	Pass	Pass	Pass		
64L QFN (9x9x0.9)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L QFN (9x9x0.9mm)	SCC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L QFN (9x9x0.9)	UTL	Pass	Pass MSL 1 or 3/260C, Note 5	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
64L STQFP (7x7x1.4)	OSE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L TQFP (10x10x1)	ASAC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L TQFP (14x14x1)	ASAC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L TQFP	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass		PAss
64L TQFP (10 x 10)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
64L TQFP (10x10x1)	ATK	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L TQFP	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass		PAss
64L TQFP (10x10x1)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
64L TQFP (14x14x1)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L TQFP (10 x 10 x 1.2)	ATP	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
64L TQFP (10x10x1.4)	ATT	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L TQFP (10x10x1)	CARS	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L TQFP (14x14x1)	MMT	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L TQFP (10x10x1)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L TQFPEP (10 x 10 x 1.2)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L TQFPEP (10 x 10 x 1.2)	ATP	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
64L UFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
64L VFBGA (7x7x1.0)	ASE	Pass	Pass MSL3/260C	N/A	SnAgCu + Ni	N/A	Pass	Pass	Pass	Pass
64L VFLGA (7x7x0.85)	UNIB	Pass	Pass MSL3/260C	Pass	SnAgCu	N/A	Pass	Pass	Pass	
64L VFLGA (7x7x0.95)	UNIB	Pass	Pass MSL3/260C	Pass	SnAgCu	N/A	Pass	Pass	Pass	Pass
64L VQFN (9x9x0.9)	ASE	Pass	Pass MSL 1 or 3/260C, Note 9	Pass	Matte Sn	Pass	Pass	Pass		Pass
64L VQFN (9x9x0.85)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L VQFN (9x9)	MMT	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass		
64L VQFN (9x9)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L VQFN (7.5x7.5)	MTAI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L VQFN (9x9x0.85)	STA	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
64L VQFN (8 x 8 x 0.9)	TICP	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
64L VQFN (8 x 8 x 0.9)	UNIS	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
64L VQFN	UTL	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass		Pass



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
64L WLCSP	ASE	Pass	Pass MSL1/260C	Pass	SnAgCu	Pass	PAss	Pass		
68L PLCC (24.21 x 24.21)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
68L PLCC	ATP	Pass	Pass MSL3/245C	Pass	Matte Sn	Pass	Pass	Pass		
68L PLCC	MMT	Pass	Pass MSL3/245C	Pass	Matte Sn	Pass	Pass	Pass		
68L TQFN (8x8)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
68L VFLGA (8X8X0.9)	ASCL	Pass	Pass MSL3/260C	Pass	Ni/Au	NA	Pass	Pass		
68L VFLGA (8X8X1.0)	ASCL	Pass	Pass MSL3/260C	Pass	SnAgCu	NA	Pass	Pass		
68L VQFN (8x8x0.9)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn	NA	Pass	Pass		
68L VQFN (10x10x1.0)	UNIB	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	
68L VQFN (10x10x1.0)	UTL	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass		
72L QFN (10x10)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
72L UFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu			Pass		
72L UFBGA	ASKR	Pass	Pass MSL3/260C	Pass	SnAgCu			Pass		
72L VQFN (10x10x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
72L VQFN (10x10x0.9mm)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
72L VQFN (10x10x0.85)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
72L VQFN (10 x 10 x 0.9)	GTK	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
72L VQFN (10x10x0.9)	UTL	Pass	Pass MSL1/260C	Pass	Matte Sn	PAss	N/A	Pass		
72L XFLGA	ASE	Pass	Pass MSL3/260C	Pass	Ni/Au			Pass		
72L XFLGA	ASKR	Pass	Pass MSL3/260C	Pass	Ni/Au			Pass		
76L CSP	UTL		Pass MSL1/260C	Pass	SnAgCu					



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
76L VLGA (5.5 x 5.5 x 0.8)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
76L VQFN (9x9x0.9)	ATC	Pass	Pass MSL3/260C	Pass	NiPdAu	Pass	Pass	Pass		
78L VFBGA (9x9x0.65)	ATC	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass	Pass	
80L eLQFP (14 x 14)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
80L GQFN (6x6)	UTL	Pass	Pass MSL3/260C	Pass	NipdAu		Pass	Pass		
80L LGA (11x11)	ASCL	Pass	Pass MSL3/260C	Pass	Ni/Au		Pass	Pass		
80L LQFP	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn			Pass		
80L LQFP (12 x 12)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
80L LQFP (14 x 14)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
80L LQFP (10 x 10 x 1.6)	TICP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
80L PQFP (20x14x3.4)	CARS	Pass	Pass MSL3/245C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
80L TQFP (12x12x1)	ASAC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
80L TQFP (14x14x1)	ASAC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
80L TQFP (12x12x1.4)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
80L TQFP (12x12x1)	ATK	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
80L TQFP (14x14x1)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
80L TQFP (12x12x1)	CARS	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
80L TQFP (12x12x1)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		
80L TQFPEP (14 x 14 x 1.2)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
80L UFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	PAss	Pass	Pass		
80L VQFN (11x11x0.5)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
81L LBGA (10x10)	ASCL	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
82L TFBGA (5.5x5.5x0.9)	ASCL	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
84L PLCC	ATP	Pass	Pass MSL3/245C	Pass	Matte Sn	Pass	Pass	Pass		
84L PLCC	MMT	Pass	Pass MSL3/245C	Pass	Matte Sn	Pass	Pass	Pass		
84L UFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass
84L UFBGA	JCAP	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass
84L VQFN (7 x 7 x 1.0)	UNIB	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
84L XFLGA	ASE	Pass	Pass MSL3/260C	Pass	Ni/Au			Pass		
85L VFBGA (5.5 x 5.5 x 1.0)	ASCL	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
88L UFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass
88L UFBGA	JCAP	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass
96L VFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	PAss	Pass	Pass		
96L VFBGA (7x7)	ASEM	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
100L DR aQFN (10x10)	ASCL	Pass	Pass MSL3/260C	Pass	NiPdAu		Pass	Pass		
100L DR aQFN (11x11)	ASCL	Pass	Pass MSL3/260C	Pass	NiPdAu		Pass	Pass		
100L LBGA (11x11)	ASEM	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
100L LFBGA (9x9)	ASEM	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
100L LFBGA (10 x 10 x 1.42)	OSE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
100L LFBGA (9 x 9 x 1.42)	OSE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
100L LFBGA (10x10x1.6)	SCS	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
100L LQFP (14x14x1.4)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
100L LQFP (14 x 14)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
100L LQFP (14x14x1.4)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
100L LQFP (14x14x1.4)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
100L LQFP (14x14x1.4)	OSE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
100L MQFP (14x20x2.7)	ASE	Pass	Pass MSL3/245C	Pass	Matte Sn	Pass	Pass	Pass		
100L MQFP (14 x 20)	ASEM	Pass	Pass MSL3/245C	Pass	Matte Sn		Pass	Pass		
100L MQFP (14x20x3.15)	CARS	Pass	Pass MSL3/245C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
100L PQFP (20x14x3.4)	CARS	Pass	Pass MSL3/245C	Pass	Matte Sn	N/A	Pass	Pass	Pass	Pass
100L QFP (14X20X2.7)	ASE	Pass	Pass MSL3/245C	Pass	Matte Sn	Pass	Pass	Pass		
100L STQFP (12x12x1.4)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
100L TFBGA (7x7x0.8)	ATC	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
100L TQFP (12x12x1)	ASAC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
100L TQFP (14x14x1)	ASAC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
100L TQFP	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
100L TQFP (12x12x1)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
100L TQFP (14x14x1.0)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
100L TQFP	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	Pass
100L TQFP (14x14x1)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
100L TQFP (14x14x1.0)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
100L TQFP (14x14x1)	MMT	Pass	Pass MSL1 or 3/260C	Pass	Matte Sn	Pass	Pass	Pass		
100L TQFP (12x12x1)	MTAI	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
100L UFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu			Pass		
100L VFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	PAss	Pass	Pass		
102L UFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu			Pass		
102L UFBGA	JCAP	Pass	Pass MSL3/260C	Pass	SnAgCu			Pass		
108L QFN	ASE	Pass	Pass MSL1/260C	Pass	Matte Sn	Pass	N/A	Pass		
114L UFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass
114L UFBGA	JCAP	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass
115L UFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass
115L UFBGA	JCAP	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass
117L UFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass
117L UFBGA	JCAP	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass
121L TFBGA	ATK	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
121L TFBGA (10x10x1.1)	ATP	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
124L VTLA (9x9x0.9)	ASAC	Pass	Pass MSL1/260C	Pass	NiPdAu	Pass	Pass	Pass		
128L LQFP (14 x 14 x 1.6)	OSE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
128L LQFP (14 x 14 x 1.6)	TICP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
128L MQFP (14x20x2.7)	ASE	Pass	Pass MSL3/245C	Pass	Matte Sn	Pass	Pass	Pass		
128L MQFP (14x20x2.7)	CTI	Pass	Pass MSL3/245C	Pass	Matte Sn	Pass	Pass	Pass		
128L PQFP (14 x 20)	OSE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
128L PQFP (14 x 20)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
128L PQFP (14 x 20)	TICP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
128L QFP (14x20x2.7)	ASE	Pass	Pass MSL3/245C	Pass	Matte Sn	Pass	Pass	Pass		
128L QFP (14x20x2.7)	CTI	Pass	Pass MSL3/245C	Pass	Matte Sn	Pass	Pass	Pass		
128L TQFP	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn			Pass		
128L TQFP (14x14x1)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
128L TQFP (14 x 14)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
128L TQFP (14x14x1)	ATK	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
128L TQFP (14x14x1)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
128L TQFP (14x14x1)	ATT	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass	Pass	
128L TQFP (14x14x1)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
128L TQFP (14x14x1)	MMT	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
128L VFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	N/A	Pass		
128L VFBGA	ASKR	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	N/A	Pass		
129L TFBGA (7x7x1.0)	CTI	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
132L DQFN (11x11x0.85)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
132L DQFN (11x11x0.85)	ATC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
132L DQFN (11x11x0.85)	ATK	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
132L DQFN (11x11x0.85)	CTI	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
132L TFBGA (12x12x1.2)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
132L VQFN (10x10)	ATC	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
134L TFBGA (7x7x1.0)	SCS	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
136L UFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
136L UFBGA	JCAP	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass
144L LBGA (13x13)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
144L LBGA (13x13)	ASEM	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
144L LBGA (13x13)	ASEM	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
144L LFBGA (10x10x1.3)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
144L LQFP	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass
144L LQFP (20 x 20)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
144L LQFP	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	N/A	Pass	Pass	Pass
144L LQFP (20x20x1.4)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
144L TFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	N/A	Pass	Pass	Pass
144L TFBGA (7x7x1.0)	ATC	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
144L TFBGA (7x7x1.0)	SCS	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
144L TQFP (20x20x1)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	N/A	Pass	Pass		
144L TQFP (20x20x1)	ATK	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
144L TQFP (16x16x1)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
144L TQFP (20x20x1.4)	ATP	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
156L LFBGA (11X11X1.4)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
160L LQFP (24x24)	ASCL	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
160L MQFP (28 x 28)	ASEM	Pass	Pass MSL3/245C	Pass	Matte Sn		Pass	Pass		
160L PBGA (23 x 23)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
162L UFBGA	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UFAST or PCT	Temp. Cycling	Thermal Shock	THB
162L UFBGA	JCAP	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		Pass
164L DR QFN (13x13)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
168L TFBGA (13x13)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
169L FCBGA (11x11)	CARS	Pass	Pass MSL6/220C	Pass	SnPb	N/A	Pass	Pass	Pass	
169L LFBGA (11X11X1.4)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
169L LFBGA (11x11x1.5mm)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
169L LFBGA (11x11x1.4mm)	ATC	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
169L TFBGA (10x10x0.75)	ATC	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass	Pass	
169L WFBGA (11x11x0.8)	ATC	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
176L LFBGA (10X10X1.4)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
176L LQFP (20x20x1.4)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
176L LQFP (20 x 20)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
196L LBG (15x15)	ASEM	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
196L LFBGA (10X10X1.4)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
196L PBGA (15 x 15)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
206L TFBGA (12x12)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
208L LBG (17x17)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
208L LQFP (28 x 28)	ASEM	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
208L PQFP (28 x 28 x 4.1)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn	Pass	Pass	Pass		
217L LFBGA (15x15x1.4)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
217L LFBGA (15x15x1.46)	ASSH	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
220L PBGA (17 x 17)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
225L LFBGA (13X13X1.3)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
256L HSBGA (17x17)	ASEM	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
256L LBGGA (17x17)	ATP	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
256L LQFP (28 x 28)	ASE	Pass	Pass MSL3/260C	Pass	Matte Sn		Pass	Pass		
256L MQFP (28 x 28)	ASEM	Pass	Pass MSL3/245C	Pass	Matte Sn		Pass	Pass		
256L PBGA (17 x 17)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
272L PBGA (27x27)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
288L LFBGA (15X15X1.4)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
289L PBGA (19 x 19 x 2.36)	OSE	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
289L PBGA (19 x 19 x 2.36)	ASE	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
320L LFBGA	ATC	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
323L LFBGA (14x14x1.14)	ATC	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
324L LFBGA (15X15X1.6)	SCS	Pass	Pass MSL3/260C	Pass	SnAgCu	Pass	Pass	Pass		
324L PBGA (19x19)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
324L PBGA (23 x 23)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
344L PBGA (27x27)	ASEM	Pass	Pass MSL3/245C	Pass	SnAgCu		Pass	Pass		
352L PBGA (35x35)	ATP	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
365L MCM BGA (27x27)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
400L PBGA (27 x 27 x 2.46)	ASE	Pass	Pass MSL3/260C	N/A	SnAgCu	Pass	Pass	Pass		
484L PBGA (23 x 23)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		



Package	Assembly Site	Pre-condition	MSL Results To J-STD-020 Profile, Note 3	Solderability Results To J-STD-002 and JESD22-B102, Note 2	Lead Finish	HAST	UHAST or PCT	Temp. Cycling	Thermal Shock	THB
535L PBGA (31 x 31)	ASE	Pass	Pass MSL3/260C	Pass	SnAgCu		Pass	Pass		
552L PBGA (35 x 35)	ASE	Pass	Pass MSL3/245C	Pass	SnAgCu		Pass	Pass		

Note 3: Some of the packages are offered in multiple MSLs depending on the package bill of materials at different assembly sites. Please note that Microchip's moisture sensitive labels comply to the JEDEC J-STD-033 (Handling, Packing, Shipping and Use of Moisture/Reflow Sensitive Surface Mount Devices) requirements and includes the package MSL status. Please use the moisture sensitive shipping label as the primary source for MSL classification status

Note 4: Not required for through hole packages.

Note 5: Dependent on the package bill of materials, i.e. leadframe, paddle size, mold compound, etc. As part of Microchip's continuous improvement efforts, the MSL classification may improve to the desired MSL1 classification. MSL1 units are shipped in low-temp trays therefore these trays should not be used for baking parts.

Note 6: Lower MSL rating for Micrel packages

Note 7: Lower MSL rating for Atmel packages

Note 8: Higher MSL rating for Micrel packages

Note 9: Higher MSL rating for Atmel packages (some of the Atmel packages have a MSL rating of 1 and some have a MSL rating of 3)

Note 10: Lower MSL rating for Microsemi packages

Note 11: Package data/information for recently acquired Microchip companies may not be included in this table.



3.4 Please see the attached document for Microchip's tin whisker reliability test status.

Tin Whisker Test Package	Plating Site	Tin Whisker Test Lead Frame Type	Package Qualified By Tin Whisker Test Lead Frame Type	Precondition	Pre inspection	Tin Whisker Measurement Result										
						Temperature Cycling (cycles)			High Temperature & Humidity				Ambient Temperature & Humidity			
						500	1,000	1,500	1,000	2,000	3,000	4,000	1,000	2,000	3,000	4,000
3L SOT -89	CEI	Cu		No	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	Pass	Pass	Pass	Pass
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	Pass	Pass	Pass	Pass
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	Pass	Pass	Pass	Pass
18L PDIP	CEI	C194	3L SOT89, 8/24/28/40L PDIP, 8/14/16/20/24L SOIC, 8L MSOP	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
44L PLCC	CEI	C151	28L PLCC	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
44L TQFP	CEI	C7025	80/100L PQFP, 24L TSSOP	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
80L MQFP	CARS	C7025	TSSOP/LQFP/MQFP	Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	Pass(S)	Pass(S)	-	-	Pass(S)	Pass(S)
3L TO-92	GTK	C194	8/16/24L SOIC, 24L SSOP, 8/16/32/40L PDIP, 8L SOIJ, 28L SPDIP	No	Pass	Pass	Pass	Pass	Pass	Pass	Pass(S)	Pass(S)	Pass	Pass	Pass	Pass
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass(S)	Pass(S)	Pass	Pass	Pass	Pass
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass(S)	Pass(S)	Pass	Pass	Pass	Pass
	GTK	C151	32/44L PLCC	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)



Tin Whisker Test Package	Plating Site	Tin Whisker Test Lead Frame Type	Package Qualified By Tin Whisker Test Lead Frame Type	Precondition	Pre inspection	Tin Whisker Measurement Result													
						Temperature Cycling (cycles)			High Temperature & Humidity				Ambient Temperature & Humidity						
						500	1,000	1,500	1,000	2,000	3,000	4,000	1,000	2,000	3,000	4,000			
	GTK	C7025	10L MSOP	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
5L DDPACK	CARM	HCL-12S	3L DDPACK, 3L SOT-223, 3/5L TO – 220	No	Pass	Pass	Pass	Pass(S)	Pass	Pass	Pass	Pass(S)	Pass	Pass	Pass	Pass	Pass		
				Sn-Pb Reflow	Pass	Pass	Pass	Pass(S)	Pass	Pass	Pass	Pass(S)	Pass	Pass	Pass	Pass	Pass	Pass	
				Pb-Free Reflow	Pass	Pass	Pass	Pass(S)	Pass	Pass	Pass	Pass(S)	Pass	Pass	Pass	Pass	Pass	Pass	
8/16L SOIC, 28L QSOP, 10L MSOP, 16/36L MLPQ	CARM	C194	8L MSOP, 3L SC70, 8/16/20/24/28L SOIC, 5/6 L SOT23	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-		Pass(S)	Pass(S)		
20L TSSOP, 48L LQFP, 3L MLPD	CARM	C7025	24L TSSOP	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	Pass(S)	Pass(S)	Pass(S)		
28L PLCC	CARM	CDA151	NA	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	Pass(S)	Pass(S)		
SOT223	CARM	OMCL	NA	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	Pass(S)	Pass(S)		
6L SC70	CARM	Alloy 42	NA	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	Pass(S)	Pass(S)		



Tin Whisker Test Package	Plating Site	Tin Whisker Test Lead Frame Type	Package Qualified By Tin Whisker Test Lead Frame Type	Precondition	Pre inspection	Tin Whisker Measurement Result										
						Temperature Cycling (cycles)			High Temperature & Humidity				Ambient Temperature & Humidity			
						500	1,000	1,500	1,000	2,000	3,000	4,000	1,000	2,000	3,000	4,000
5L SOT 223	HANA	C194	3L SOT 223, 3/5L SOT-23, 3LSOT-23A, 8/14/16/18L PDIP, 14L SOIC, 8L SOIJ, 16L QSOP	No	Pass	-	-	-	-	-	-	-	Pass	Pass	Pass	Pass
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	-	-	-
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	-	-
8L EIAJ	UTL	C194	3/5/6 SOT23 3/5/6 L SC70, 8/18/28/40L PDIP , 28LSPDIP, 26L LLGA 8/14/16/18/20L SOIC , 8L MSOP, 20L SSOP	No	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
8L TSSOP	UTL	C7025	8/10L MSOP 14/16/20L TSSOP, 26L BCC	No	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
8L SOIC	ATC	C194	NA	No	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
8L SOIC	MMS	C194	3/5/6L SOT-23, 4L SOT-143, 8L MSOP, 44L PLCC, 8/18 PDIP, 16L QSOP 18/28L SOIC	No	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
8L SOIC	VGT	C194	8/14L PDIP	No	Pass	-	-	-	-	-	-	-	Pass	Pass	Pass	Pass
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	-	-	-
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	-	-	-
14L TSSOP	VGT	C7025	8L TSSOP, 8L SOIC	No	Pass	-	-	-	-	-	-	-	Pass	Pass	Pass	Pass
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	-	-	-
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	-	-	-



Tin Whisker Test Package	Plating Site	Tin Whisker Test Lead Frame Type	Package Qualified By Tin Whisker Test Lead Frame Type	Precondition	Pre inspection	Tin Whisker Measurement Result												
						Temperature Cycling (cycles)			High Temperature & Humidity				Ambient Temperature & Humidity					
						500	1,000	1,500	1,000	2,000	3,000	4,000	1,000	2,000	3,000	4,000		
14L TSSOP	ATP	C7025	8/16/20L TSSOP, 44L MQFP, 10L MSOP	No	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
28L SSOP	ATP	C194	8/14/16/18/20/24L PDIP, 8/10L MSOP, 3L SOT223, 8/14/16/18/20/24/28L SOIC, 20/24 L SSOP, 5/6L TSOT, 64/80/100/144L LQFP, 16/24 L QSOP, 28/44 L PL, 44/48/64/80/100/144L TQFP, 14/20/28/38 L TSSOP	No	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
44I PLCC	ATP	C151	28/68/84 L PLCC	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
44L TQFP	ATP	EFTEC64T	32/64/80/100/144L TQFP, 128/144L LQFP	No	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
5L TO-252	FSTS				Pass(S)	Pass(S)	Pass(S)	-	Pass(S)	Pass(S)	Pass(S)	-	Pass(S)	Pass(S)	Pass(S)	-		
14L TSSOP	UNIS	C7025	8L TSSOP, 24L SSOP	No	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
16L QSOP	UNIS	C194	3/5/6L SOT 23, 3L SOT 223, 5L TSOT, 5L SC70, 14L PDIP, 8/20L SOIC, 28L SPDIP	No	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass(S)	Pass	Pass	Pass	Pass	Pass	
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass



Tin Whisker Test Package	Plating Site	Tin Whisker Test Lead Frame Type	Package Qualified By Tin Whisker Test Lead Frame Type	Precondition	Pre inspection	Tin Whisker Measurement Result													
						Temperature Cycling (cycles)			High Temperature & Humidity				Ambient Temperature & Humidity						
						500	1,000	1,500	1,000	2,000	3,000	4,000	1,000	2,000	3,000	4,000			
44L PLCC	UNIS	C151	NA	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
28L SOIC	MTAI	C194	8L MSOP, 20/28L SSOP 28L SPDIP, 8L SOIJ, 8/18/28/40L PDIP 8/14/18L SOIC, 3/5/6 LSOT23	No	Pass	Pass	Pass	Pass	-	-	-	-	Pass	Pass	Pass	Pass	Pass		
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
64L TQFP	MTAI	C7025	32/44/80/100L TQFP	No	Pass	Pass	Pass	Pass	-	-	-	-	Pass	Pass	Pass	Pass	Pass		
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
64L TQFP	MMT	C7025	44L TQFP, 44L MQFP, 8/14L TSSOP	No	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
28L SOIC	MMT	C194	8/14/16/20 L SOIC 8/14/16/18/20/28/40L PDIP, 8L MSOP, 28L SSO 28L SPDIP, 28L PLCC, 44L TQFP, 5/6 L SOT-23	No	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
44L PLCC	MMT	C151	28/68 L PLCC	No	Pass	-	-	-	-	-	-	-	Pass	-	-	-	-		
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	-	-	-	-	-	-	-	-	-	
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	-	-	-	-	-	-	-	-	-	
3L DPAK	GEMC	PMC90		No	Pass(S)	Pass(S)	Pass(S)	-	Pass(S)	Pass(S)	-	-	Pass(S)	Pass(S)	-	-			
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	-	Pass(S)	Pass(S)	-	-	Pass(S)	Pass(S)	-	-			



Tin Whisker Test Package	Plating Site	Tin Whisker Test Lead Frame Type	Package Qualified By Tin Whisker Test Lead Frame Type	Precondition	Pre inspection	Tin Whisker Measurement Result												
						Temperature Cycling (cycles)			High Temperature & Humidity				Ambient Temperature & Humidity					
						500	1,000	1,500	1,000	2,000	3,000	4,000	1,000	2,000	3,000	4,000		
3L TO-263	GTBF	PMC90	3L DPAK	Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	
3L TO-220 3L TO-252	GTBF	LY80	3/5L DDPAK 3/5L TO-220	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
6L SOT-23	JCET	C194	3L SOT-23, 3L SOT-23A	No	Pass(S)	-	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	Pass(S)	Pass(S)	Pass(S)	-	Pass(S)	Pass(S)	
				Sn-Pb Reflow	Pass(S)	-	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass(S)	-	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	Pass(S)
64L TQFP	UTAC/ASAC	EFTEC64T	44/80/100L TQFP	No	Pass	Pass	Pass	Pass	-	-	-	-	Pass	Pass	Pass	Pass	Pass	
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
100L TQFP	UTAC/ASAC	EFTEC64T	44/64/80L TQFP	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
64L TQFP	UTAC/ASAC	C7025	44/80/100L TQFP	No	Pass	-	-	-	-	-	-	-	Pass	Pass	-	-	-	
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	-	-	-	-	-	-	-	-
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	-	-	-	-	-	-	-	-
80L TQFP	ATK	EFTEC64T	44/64L TQFP	No	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
8L SOP	LPI	C194	32/40L PDIP, 8/16L SOIC, 8L SOIJ, 8L SOIJ-S, 5L SOT223	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	



Tin Whisker Test Package	Plating Site	Tin Whisker Test Lead Frame Type	Package Qualified By Tin Whisker Test Lead Frame Type	Precondition	Pre inspection	Tin Whisker Measurement Result													
						Temperature Cycling (cycles)			High Temperature & Humidity				Ambient Temperature & Humidity						
						500	1,000	1,500	1,000	2,000	3,000	4,000	1,000	2,000	3,000	4,000			
48L TSOP	LPI	C7025	44L TQFP, 32/40L TSOP	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
3L SOT-23A	LPI	EFTEC64T	NA	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
3L SOT -89	LPI	KFC	NA	No	Pass	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass	Pass	Pass	Pass	Pass	Pass	
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
3L SOT -223	LPI	PMC90 (CDA19210)	NA	No	Pass	-	-	-	-	-	-	-	Pass	Pass	Pass	Pass	Pass		
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	-	-	-	-		
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	-	-	-	-		
32L PLCC	LPI	C151	NA	No	Pass	-	-	-	-	-	-	-	Pass	Pass	Pass	Pass	Pass		
				Sn-Pb Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	-	-	-	-		
				Pb-Free Reflow	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-	-	-	-	-		
16L SOP/ 48L TQFP	ASCL	C194	8/16 L SOIC	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	-	-		
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	-	-		
8L TSSOP/ 128L LQFP	ASCL	EFTEC64T?	64L LQFP	Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
28L SSOP, 48L SSOP	OSE	C194	16/24L QSOP, 28/48L SSOP 14L SOIC	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)



Tin Whisker Test Package	Plating Site	Tin Whisker Test Lead Frame Type	Package Qualified By Tin Whisker Test Lead Frame Type	Precondition	Pre inspection	Tin Whisker Measurement Result													
						Temperature Cycling (cycles)			High Temperature & Humidity				Ambient Temperature & Humidity						
						500	1,000	1,500	1,000	2,000	3,000	4,000	1,000	2,000	3,000	4,000			
8L TSSOP	OSE	C7025	8L TSSOP 8/10L MSOP 100/128 L LQFP 128L PQFP	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
32L PLCC	OSE	C151	28L PLCC	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
48L LQFP	ASAT	C64T			Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	Pass(S)	Pass(S)	Pass(S)	Pass(S)			
100L MQFP 48L VLPCC	ASAT	C7025			Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	Pass(S)	Pass(S)	Pass(S)	Pass(S)			
32L PLCC	ASAT	C151			Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	Pass(S)	Pass(S)	Pass(S)	Pass(S)			
128L LQFP	ASE	C7025	48/100/176L LQFP, 100/128L MQFP, 100/128/208 L QFP, 48/64/80/100/128/ 144L TQFP	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
100L LQFP	ASE	C7025	48/100/176L LQFP, 100/128L MQFP, 100/128/208 L QFP, 48/64/80/100/128/ 144L TQFP	No	Pass(S)	Pass(S)	-	-	Pass(S)	-	-	-	Pass(S)	-	-	-	-		
				Sn-Pb Reflow	Pass(S)	Pass(S)	-	-	Pass(S)	-	-	-	Pass(S)	-	-	-	-	-	
				Pb-Free Reflow	Pass(S)	Pass(S)	-	-	Pass(S)	-	-	-	Pass(S)	-	-	-	-	-	-
8L SOP	ASE	C194	NA	No	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)
	CRTK	C194	3L TO-92	Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
16L SOIC	CRTK	PMC90	3L SOT-89	No	Pass(S)	-	-	-	-	-	-	-	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)		
				Sn-Pb Reflow		Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	-	-	-	-	
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	-	-	-	-	-



Tin Whisker Test Package	Plating Site	Tin Whisker Test Lead Frame Type	Package Qualified By Tin Whisker Test Lead Frame Type	Precondition	Pre inspection	Tin Whisker Measurement Result										
						Temperature Cycling (cycles)			High Temperature & Humidity				Ambient Temperature & Humidity			
						500	1,000	1,500	1,000	2,000	3,000	4,000	1,000	2,000	3,000	4,000
16L PDIP, 16/20L SOIC	UNIB	C194	NA	No	Pass(S)	-	-	-	-	-	-	-	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	-	-	
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	-	-
28L PLCC	UNIB	C151	NA	No	Pass(S)	-	-	-	-	-	-	-	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	-	-
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	-	-
32L LQFP	UNIB	C7025	48L LQFP	No	Pass(S)	-	-	-	-	-	-	-	Pass(S)	Pass(S)	Pass(S)	Pass(S)
				Sn-Pb Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	-	-
				Pb-Free Reflow	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	Pass(S)	-	-	-	-

Note 12: All tin whisker reliability testing was performed per the requirements in JEDEC specifications JESD22A121 & JESD201. The tin whisker acceptance criteria was based on the class 2 requirements in JESD201, which is 45 um for the temperature cycling test and 40 um for the ambient/high temperature & humidity tests. Pass (S) is tin whisker reliability test data from Microchip's assembly subcontractor (whisker testing was performed using a different package type). Sn-Pb and Pb-free reflows have a peak reflow temperature of 215°C and 245°C respectively and both reflow profiles comply to J-STD-020.

Note 13: Package tin whisker data for recently acquired Microchip companies may not be included in this table.

4.0 CONCLUSION

The assembly using Matte Tin plating, PPF or solder spheres complies with the reliability guidelines documented in the qualification plan. Compliance was based on passing moisture sensitivity level (JEDEC J-STD-020 compliance for SMD), package reliability, solderability (J-STD-002 and JESD22-B102 compliance for SMD and through hole packages), and JEDEC whiskers growth test results per the JESD22A121 & JESD201 requirements. Therefore, the assembly using Matte Tin plating or PPF for these packages is released for production using die from all of Microchip's process technologies and products fabricated at silicon foundries for the packages and assembly sites outlined in table 3.3. All Pb-free packages are ROHS compliant.