PCN Number:	20230802001.2	PCN Date:	August 08, 2023
Title:	Qualify New Assembly Material set for Selected Device(s)		
Customer Contact:	Change Management team	Dept:	Quality Services
Proposed 1st Ship Date:	Feb 07, 2024	Sample requests accepted until:	Sept 07, 2023*

*Sample requests received after Sept 07, 2023 will not be supported.

Change Type:					
☐	Assembly Site	☐	Design	☐	Wafer Bump Material
☒	Assembly Process	☐	Data Sheet	☐	Wafer Bump Process
☒	Assembly Materials	☐	Part number change	☐	Wafer Fab Site
☐	Mechanical Specification	☐	Test Site	☐	Wafer Fab Materials
☐	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of new assembly material for devices listed in "Product affected" section below. Devices will remain in current assembly facility and piece part changes as follows:

Group 1 device:

	Current	Proposed
Mold Compound	4205443	4211649

Group 2 device:

	Current	Proposed
Wire type	Au	Cu
Mount Compound	4206201, 4042504	4208458
Mold Compound	4205443	4211649

Group 3 device:

	Current	Proposed
Wire type	Au	Cu
Mold Compound	4205443	4211649

Group 4 device:

	Current	Proposed
Mount Compound	4042504	4208458
Mold Compound	4205443	4211649

Reason for Change:

Continuity of supply.

1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties
2) Maximize flexibility within our Assembly/Test production sites.
3) Cu is easier to obtain and stock

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

None

Impact on Environmental Ratings

Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings.

RoHS	REACH	Green Status	IEC 62474
☒ No Change	☒ No Change	☒ No Change	☒ No Change

Changes to product identification resulting from this PCN:

None

Product Affected:

Group 1 Device:

PCM1681TPWPQ1	TPS7A6350QPWPRQ1	TPS7A6301QPWPRQ1	TPS54225TPWPRQ1
PCM1681TPWPRQ1	TPS7A6401QPWPRQ1	TPS54386TPWPRQ1	
TLC5926QPWPRQ1	TLC5927QPWPRQ1	TPS75201QPWPRQ1	
TPS7A6333QPWPRQ1	TPS40050QPWPRQ1	TPS54325TPWPRQ1	

Group 2 Device:

MLA00127PWPR	MLA00340PWPR	TLC084QPWPRQ1	TPS70175QPWPRQ1
MLA00128PWPR	MLA00341PWPR	TPIC74101QPWPRRB	

Group 3 Device:

TLV2474APWPRQ1	TPS54362AQPWPRQ1	TPS54262QPWPRQ1	UCD8220QPWPRQ1
TLV2474QPWPRQ1	TPS55332QPWPRQ1	TPS767D301QPWPRQ1	
TPS40051QPWPRQ1	TPS54162QPWPRQ1	TPS767D318QPWPRQ1	

Group 4 Device:

MLA00333PWPR	MLA00345PWPR

Qualification Report

Automotive Product Qualification Summary
(As per AEC-Q100, AEC-Q006, and JEDEC Guidelines)

Product Attributes

Attributes	Qual Device: TPS40050QPWPRQ1	Qual Device: PCM1681TPWPRQ1	Package, Process QBS Reference: TPS553400PWPRQ1	Package, Process QBS Reference: LM76202QPWPRQ1	Package, Process QBS Reference: DRV8824QPWPRQ1	Package, Process QBS Reference: TPIC74100QPWPLRD	Package QBS Reference: TPS54810QPWPRG4Q1	Package QBS Reference: TPS65150QPWPRQ1	Package, Process QBS Reference: PCM1794AQDBRQ1	Package QBS Reference: TPS76801QPWPRG4Q1	Package, Process QBS Reference: SN2HA08CQPWPRQ1	Package, Process QBS Reference: SN1205024PWP
Automotive Grade Level	Grade 1	Grade 2	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1
Operating Temp Range (C)	-40 to 125	-40 to 105	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125
Product Function	Power Management	Signal Chain	Power Management	Power Management	Signal Chain	Power Management	Power Management	Power Management	Signal Chain	Power Management	Power Management	Signal Chain
Wafer Fab Supplier	DL-LIN	TSMC-WF3	MH8	RFAB	DP1DM5	DL-LIN	DL-LIN	DL-LIN	TSMC-WF3	DL-LIN	CFAB, RFAB	DP1DM5, MH8
Assembly Site	TAI	TAI	TAI	TAI	TAI	TAI	TAI	TAI	MLA	TAI	TAI	TAI
Package Group	TSSOP	TSSOP	TSSOP	TSSOP	TSSOP	TSSOP	TSSOP	TSSOP	SSOP	TSSOP	TSSOP	TSSOP
Package Designator	PWP	PWP	PWP	PWP	PWP	PWP	PWP	PWP	DB	PWP	PWP	PWP
Pin Count	16	28	14	16	28	20	20	24	28	20	24	28

QBS: Qual By Similarity
Qual Device TPS40050QPWPRQ1 is qualified at MSL2 260C
Qual Device PCM1681TPWPRQ1 is qualified at MSL4 2 260C

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: TPS40050QPWPRQ1	Qual Device: PCM1681TPWPRQ1	Package, Process QBS Reference: TPS553400PWPRQ1	Package, Process QBS Reference: LM76202QPWPRQ1	Package, Process QBS Reference: DRV8824QPWPRQ1	Package, Process QBS Reference: TPIC74100QPWPLRD	Package QBS Reference: TPS54810QPWPRG4Q1	Package QBS Reference: TPS65150QPWPRQ1	Package, Process QBS Reference: PCM1794AQDBRQ1	Package QBS Reference: TPS76801QPWPRG4Q1	Package, Process QBS Reference: SN2HA08CQPWPRQ1	Package, Process QBS Reference: SN1205024PWP
Test Group A - Accelerated Environment Stress Tests																			
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	1 Step	-	-	-	-	-	-	-	-	All Pass	-	-	-
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL2 260C	1 Step	-	-	All Pass	-	-	All Pass	All Pass	-	-	-	-	All Pass
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL3 260C	1 Step	-	-	-	All Pass	All Pass	-	-	All Pass	-	All Pass	All Pass	-
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL4 260C	1 Step	-	All Pass	-	-	-	-	-	-	-	-	-	-
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	3/231/0	3/231/0	1/77/0	1/77/0	1/77/0	3/231/0	3/231/0	3/231/0	-
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Autoclave	121C/15psig	96 Hours	-	3/231/0	3/231/0	3/231/0	3/231/0	1/77/0	1/77/0	1/77/0	3/231/0	3/231/0	3/231/0	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	3/231/0	3/231/0	3/231/0	1/77/0	1/77/0	1/77/0	3/231/0	3/231/0	3/231/0	3/231/0
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	-	1/5/0	3/15/0	1/5/0	1/5/0	3/135/0	3/135/0	1/5/0	1/5/0	1/5/0	-	1/5/0
PTC	A5	JEDEC JESD22-A105	1	45	PTC	-40/125C	1000 Cycles	-	-	1/45/0	2/90/0	1/45/0	1/45/0	-	-	-	-	1/45/0	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	1000 Hours	-	-	1/45/0	-	-	-	1/45/0	-	-	-	3/135/0	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	500 Hours	-	1/45/0	-	-	-	-	-	-	-	-	-	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	175C	500 Hours	-	-	-	3/135/0	-	-	-	-	1/45/0	1/45/0	-	-
Test Group B - Accelerated Lifetime Simulation Tests																			
HTOL	B1	JEDEC JESD22-A108	1	77	Life Test	125C	1000 Hours	-	-	3/231/0	1/77/0	-	3/231/0	-	-	3/231/0	-	-	3/231/0
HTOL	B1	JEDEC JESD22-A108	1	77	Life Test	150C	408 Hours	-	-	-	-	1/77/0	-	-	-	-	-	3/231/0	-
ELFR	B2	AEC Q100-008	1	77	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/0	-	-	-	-	-	3/2400/0	-	-	-
Test Group C - Package Assembly Integrity Tests																			
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	3/90/0	3/90/0	3/90/0	3/90/0	3/90/0	1/30/0	1/30/0	1/30/0	3/90/0	3/90/0	3/90/0	3/90/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	3/90/0	3/90/0	3/90/0	3/90/0	3/90/0	1/30/0	1/30/0	1/30/0	3/90/0	3/90/0	3/90/0	3/90/0
SD	C3	JEDEC J-STD-002	1	15	PB Solderability	>95% Lead Coverage	-	-	-	-	1/15/0	-	-	-	-	-	-	-	-
SD	C3	JEDEC J-STD-002	1	15	PB-Free Solderability	>95% Lead Coverage	-	1/15/0	1/15/0	-	1/15/0	-	-	-	-	-	-	1/15/0	-
PD	C4	JEDEC JESD22-B100 and B108	1	10	Physical Dimensions	Cpk>1.67	-	3/30/0	3/30/0	3/30/0	3/30/0	3/30/0	1/10/0	1/10/0	1/10/0	3/30/0	3/30/0	3/30/0	3/30/0

Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours
The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours
The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles
Ambient Operating Temperature by Automotive Grade Level:
Grade 0 (or E): -40C to +150C
Grade 1 (or Q): -40C to +125C
Grade 2 (or T): -40C to +105C
Grade 3 (or I) : -40C to +85C
E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):
Room/Hot/Cold : HTOL, ED
Room/Hot : THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU
Room : AC/Uhast

Quality and Environmental data is available at TI's external Web site: http://www.ti.com/

Qualification Report

Automotive Product Qualification Summary (As per AEC-Q100 and JEDEC Guidelines)

Product Attributes

Attributes	Qual Device: TPIC74100QPWPRLRD	Qual Device: TPS54610QPWPRG4Q1	Qual Device: TPS65150QPWPRQ1
Operating Temp Range	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Automotive Grade Level	Grade 1	Grade 1	Grade 1
Wafer Fab Supplier	DFAB	DFAB	DFAB
Die Revision	D	A	B
Assembly Site	TAI / TITL	TAI / TITL	TAI / TITL
Package Type	TSSOP	HTSSOP	HTSSOP
Package Designator	PWP	PWP	PWP
Ball/Lead Count	20	28	24

- QBS: Qual By Similarity
- Qual Device TPIC74100QPWPRLRD is qualified at LEVEL2-260CG
- Qual Device TPS54610QPWPRG4Q1 is qualified at LEVEL2-260CG
- Qual Device TPS65150QPWPRQ1 is qualified at LEVEL3-260CG

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Name / Condition	Duration	Qual Device: TPIC74100QPWPRLRD	Qual Device: TPS54610QPWPRG4Q1	Qual Device: TPS65150QPWPRQ1
Test Group A - Accelerated Environment Stress Test						
PC	A1	Auto Preconditioning	L3-260C (dependent on lookahead MSL results)	1/328/0	1/350/0	1/200/0
HAST	A2	**Auto Biased HAST	130C/85%RH (96 Hrs)	1/77/0	1/77/0	1/77/0
AC	A3	**Auto Autoclave	121C, 2 atm (96 Hrs)	1/77/0	1/77/0	1/77/0
TC	A4	**Auto T/C Grade 1	-65C/+150C (500 Cyc)	1/77/0	1/77/0	1/77/0
TC-BP	A4	Auto Post TC Bond Pull	per MIL-STD 883 Method 2011	1/5/0	1/5/0	1/5/0
PTC	A5	**Auto Power T/C Grade 1	-40C/125C, 1000Cyc >1Watt or Del Tj>40C	1/45/0	-	-
HTSL	A6	**Auto High Temp. Storage Life Grade 1	175C(500 Hrs)	-	1/45/0	-
Test Group B - Accelerated Lifetime Simulation Test						
HTOL	B1	Auto High Temp Operating Life Grade 1	125C(1000 Hrs)	3/231/0	-	-
Test Group C - Package Assembly Integrity Tests						
Test Group E - Electrical Verification						
CDM	E3	ESD - CDM ¦ Q100	750 V	-	-	1/3/0
ED	E5	Auto Electrical Distributions	Cpk>1.67 Room, hot, and cold test	1/30/0	1/30/0	1/30/0
Additional Tests						
MQ		Manufacturability (Auto Assembly)	(per automotive requirements)	1/all/0	1/all/0	1/all/0
MSL		Thermal Path Integrity	(level 3 @ 260C +5/-0C)	1/12/0	1/12/0	1/12/0

A1 (PC): Preconditioning:
Performed for THB, Biased HAST, AC, uHAST & TC samples, as applicable.

Ambient Operating Temperature by Automotive Grade Level:
Grade 0 (or E): -40°C to +150°C
Grade 1 (or Q): -40°C to +125°C
Grade 2 (or T): -40°C to +105°C
Grade 3 (or I) : -40°C to +85°C
Grade 4 (or C): -40°C to +70°C

E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):
Room/Hot/Cold : HTOL
Room/Hot : THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU

Room : AC/uHAST

Green/Pb-free Status:
Qualified Pb-Free(SMT) and Green

Qualification Report
Automotive Product Qualification Summary
(As per AEC-Q100 and JEDEC Guidelines)

Product Attributes

Attributes	Qual Device: R6801QPWPRG4Q1
Operating Temp Range	-40°C to +125°C
Automotive Grade Level	Grade 1
Wafer Fab Supplier	DFAB
Die Revision	A
Assembly Site	TAI / TITL
Package Type	TSSOP
Package Designator	PWP
Ball/Lead Count	20

- QBS: Qual By Similarity
- Qual Device R6801QPWPRG4Q1 is qualified at LEVEL3-260C

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Name / Condition	Duration	Qual Device: R6801QPWPRG4Q1
Test Group A - Accelerated Environment Stress Test				
PC	A1	Auto Preconditioning Level 3	Level 3-260C	3/1095/0
HAST	A2	Biased HAST, 130C/85%RH	96 Hours	3/231/0
AC	A3	Autoclave 121C	192 Hours	3/231/0
TC-BP	A4	Post Temp. Cycle Bond Pull	Wires	1/5/0
TC	A4	Temperature Cycle, -65/150C	1000 Cycles	3/231/0
HTSL	A6	High Temp Storage Bake 175C	500 Hours	3/231/0
Test Group C - Package Assembly Integrity Tests				
WBS	C1	Bond Shear (Ppk > 1.67 and Cpk > 1.33)	Wires	3/240/0
WBP	C2	Bond Pull (Ppk > 1.67 and Cpk > 1.33)	Wires	3/240/0
Test Group E - Electrical Verification				
ED	E5	Electrical Distributions Cpk > 1.67	--	3/90/0

A1 (PC): Preconditioning:
Performed for THB, Biased HAST, AC, uHAST & TC samples, as applicable.

Ambient Operating Temperature by Automotive Grade Level:
Grade 0 (or E): -40°C to +150°C
Grade 1 (or Q): -40°C to +125°C
Grade 2 (or T): -40°C to +105°C
Grade 3 (or I) : -40°C to +85°C
Grade 4 (or C): -40°C to +70°C

E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):
Room/Hot/Cold : HTOL
Room/Hot : THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU
Room : AC/uHAST

Green/Pb-free Status:
Qualified Pb-Free(SMT) and Green

Qualification Report
Automotive Product Qualification Summary
(As per AEC-Q100 and JEDEC Guidelines)

Product Attributes

Attributes	Qual Device: SN2HA08CQPWPRQ1
Automotive Grade Level	Grade 1
Operating Temp Range (C)	-40 to +125
Wafer Fab Supplier	CFAB, RFAB
Assembly Site	TAI
Package Group	HTSSOP
Package Designator	PWP
Pin Count	24

- QBS: Qual By Similarity
- Qual Device SN2HA08CQPWPRQ1 is qualified at LEVEL3-260C
- Device SN2HA08CQPWPRQ1 contains multiple dies.

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: SN2HA08CQPWPRQ1
Test Group A – Accelerated Environment Stress Tests							
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning Level 3	Elec/25C	3/Pass
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	3/231/0
AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 Hours	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 Cycles	3/231/0
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	1/5/0
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle, -40/125C	1000 Cycles	1/45/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 150C	1000 Hours	3/231/0
Test Group B – Accelerated Lifetime Simulation Tests							
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 150C	1008 Hours	3/231/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 150C	24 Hours	3/2400/0
Test Group C – Package Assembly Integrity Tests							
WBS	C1	AEC Q100-001	1	30	Auto Wire Bond Shear	Minimum of 5 devices, 30 wires Cpk>1.67	3/60/0
WBP	C2	MIL-STD883 Method 2011	1	30	Auto Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	3/60/0
SD	C3	JEDEC JESD22-B102	1	15	Pb Free Solderability	8 Hours Steam	1/15/0
SD	C3	JEDEC JESD22-B102	1	15	Solderability	8 Hours Steam	1/15/0
PD	C4	JEDEC JESD22-B100 and B108	3	10	Auto Physical Dimensions	Cpk>1.67	3/30/0
Test Group D – Die Fabrication Reliability Tests							
EM	D1	JESD61	-	-	Electromigration	-	Completed Per Process Technology Requirements
TDDB	D2	JESD35	-	-	Time Dependant Dielectric Breakdown	-	Completed Per Process Technology Requirements
HCI	D3	JESD60 & 28	-	-	Hot Injection Carrier	-	Completed Per Process Technology Requirements
NBTI	D4	-	-	-	Negative Bias Temperature Instability	-	Completed Per Process Technology Requirements
SM	D5	-	-	-	Stress Migration	-	Completed Per Process Technology Requirements
Test Group E – Electrical Verification Tests							
HBM	E2	AEC Q100-002	1	3	ESD - HBM - Q100	2500 V	1/3/0
CDM	E3	AEC Q100-011	1	3	ESD - CDM - Q100	1000 V	1/3/0
LU	E4	AEC Q100-004	1	6	Latch-up	125c	1/6/0

A1 (PC): Preconditioning:

Performed for THB, Biased HAST, AC, uHAST &TC samples, as applicable.

Ambient Operating Temperature by Automotive Grade Level:

Grade 0 (or E): -40°C to +150°C

Grade 1 (or Q): -40°C to +125°C

Grade 2 (or T): -40°C to +105°C

Grade 3 (or I) : -40°C to +85°C

E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):

Room/Hot/Cold : HTOL, ED

Room/Hot : THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU

Room : AC/uHAST

Green/Pb-free Status: Qualified Pb-Free(SMT) and Green

Qualification Report

Automotive Product Qualification Summary
(As per AEC-Q100 and JEDEC Guidelines)

Product Attributes

Attributes	Qual Device: DRV8824QPWPRQ1	QBS Process: SN05071DPZPRG4
Automotive Grade Level	Grade 1	Grade 1
Operating Temp Range (C)	-40 to +125	-40 to +125
Wafer Fab Supplier	DMOS5	DMOS5
Assembly Site	TAI	TAI
Package Group	HTSSOP	HTQFP
Package Designator	PWP	PZP
Pin Count	28	100

- QBS: Qual By Similarity
- Qual Device DRV8824QPWPRQ1 is qualified at LEVEL3-260C

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: DRV8824QPWPRQ1	QBS Process: SN05071DPZPRG4
Test Group A – Accelerated Environment Stress Tests								
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	Level 3-260C	3/Pass	-
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	3/231/0	-
AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 Hours	3/231/0	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 Cycles	3/231/0	-
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	1/5/0	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 175C	500 Hours	1/45/0	-
Test Group B – Accelerated Lifetime Simulation Tests								
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 125C	1000 Hours	-	3/231/0
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 150C	408 Hours	1/77/0	3/231/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 125C	48 Hours	-	3/2400/0
Test Group C – Package Assembly Integrity Tests								
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear	Minimum of 5 devices, 30 wires Cpk>1.67	1/30/0	-
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	1/30/0	-
SD	C3	JEDEC JESD22-B102	1	15	Pb Free Solderability	8 Hours Steam	1/15/0	-
SD	C3	JEDEC JESD22-B102	1	15	Solderability	8 Hours Steam	1/15/0	-
PD	C4	JEDEC JESD22-B100 and B108	1	10	Physical Dimensions	Cpk>1.67	1/10/0	-
Test Group D – Die Fabrication Reliability Tests								
EM	D1	JESD61	-	-	Electromigration	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
TDDB	D2	JESD35	-	-	Time Dependant Dielectric Breakdown	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
HCI	D3	JESD60 & 28	-	-	Hot Injection Carrier	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
NBTI	D4	-	-	-	Negative Bias Temperature Instability	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
SM	D5	-	-	-	Stress Migration	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
Test Group E – Electrical Verification Tests								
HBM	E2	AEC Q100-002	1	3	ESD - HBM - Q100	2000V	1/3/0	1/3/0
CDM	E3	AEC Q100-011	1	3	ESD - CDM - Q100	250V	1/3/0	1/3/0
LU	E4	AEC Q100-004	1	6	Latch-up	Per AEC Q100-004	1/6/0	1/6/0
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	3/90/0	3/90/0

A1 (PC): Preconditioning:
Performed for THB, Biased HAST, AC, uHAST & TC samples, as applicable.
Ambient Operating Temperature by Automotive Grade Level:
Grade 0 (or E): -40°C to +150°C
Grade 1 (or Q): -40°C to +125°C
Grade 2 (or T): -40°C to +105°C
Grade 3 (or I) : -40°C to +85°C
Grade 4 (or C): -40°C to +70°C
C3 (Solderability):
Pb & Pb-Free Solderability data from MSPREL.12.UCD8220.04001
C4 (Physical Dimensions):
Physical Dimensions data from eQDB attached file
E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):
Room/Hot/Cold : HTOL

Room/Hot : THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU
Room : AC/uHAST
Green/Pb-free Status: Qualified Pb-Free(SMT) and Green

ZVEI ID reference: SEM-PA-07, SEM-PA-08, SEM-PA-11

For questions regarding this notice, e-mails can be sent to the Change Management team or your local Field Sales Representative.