PCN Number:	20240227005.1	PCN Date:	February 27, 2024
Title:	Qualification of Cu as an alternate bond wire & die coat for select devices		
Customer Contact:	Change Management Team	Dept:	Quality Services
Proposed 1st Ship Date:	May 27, 2024	Sample Requests accepted until:	March 28, 2024*

***Sample requests received after March 28, 2024 will not be supported.**

☐	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 Material
☐	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Process

PCN Details

Description of Change:

This PCN is to inform of an alternative bond wire & die coat qualification for the devices in the product affected section as follows:

Group 1 Devices: Bond wire and die coat change

What	Current	Additional
Current Bond wire, Diameter	Au, 1.0 mils	Cu, 0.96 mil
Die Coat	BCB	PI

Group 2 Devices: Bond wire only change

What	Current	Additional
Current Bond wire, Diameter	Au, 0.96 mil	Cu, 1.0 mil

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 list:

LMP8640HVMKX-F/NOPB	LMP8640MKX-H/NOPB	TPL5010DDCR	TPL5110DDCR
LMP8640HVMKX-H/NOPB	LMP8640MKX-T/NOPB	TPL5010DDCT	TPL5110DDCT
LMP8640HVMKX-T/NOPB			

Group 2 Device List

TPS62162DSGT

Group 1 Qual Memo:

TI Information
Selective Disclosure

Qualification Report

SOT23 6DDC 0.96mil Cu on ABCD150 & CMOS9T DAF+Spincoat Devices
Approve Date 05-JANUARY -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: TPL5010DDCR	Qual Device: LMP8640HVMK-F/NOPB	QBS Reference: LMP7711MK/NOPB	QBS Reference: LM4041AIM3X-1.2/NOPB	QBS Reference: LMC7101AIM5/NOPB	QBS Reference: LMV7275MG/NOPB	QBS Reference: LMP8640QMKX-T/NOPB
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0	3/231/0	-	3/231/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	-	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	1/77/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	3/231/0	-	-	1/77/0	1/77/0	1/77/0	3/231/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	-	-	3/231/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	2/60/0	1/30/0	1/30/0	3/90/0	1/30/0

- QBS: Qual By Similarity
- Qual Device TPL5010DDCR is qualified at MSL1 260C
- Qual Device LMP8640HVMK-F/NOPB is qualified at MSL1 260C

- 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

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

TI Qualification ID: R-CHG-2207-052

Group 2 Qual Memo:

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS62172DSGR	QBS Product Reference: TPS62162DSGR	QBS Product Reference: TPS62160DSGR	QBS Package Reference: TPS65680RSN	QBS Process Reference: TPS62110RSA
ED	Electrical Characterization	Per Datasheet Parameters	-	Pass	Pass	Pass	Pass
HBM	ESD - HBM	3000 V	-	-	1/3/0	2/6/0	-
CDM	ESD - CDM	1500 V	-	-	1/3/0	2/6/0	-
LU	Latch-up	(Per JESD78)	-	-	1/6/0	2/12/0	3/15/0
HTOL	Life Test, 150C	300 Hours	-	-	-	3/231/0	-
HTOL	Life Test, 140C	480 Hours	-	-	-	-	3/231/0
HTOL	Life Test, 125C	1000 Hours	-	-	-	-	-
ELFR	Early Life Failure Rate, 140C	48 Hours	-	-	-	-	3/1881/0
HTSL	High Temp Storage Bake, 170C	420 Hours	-	-	-	2/154/0	3/231/0
HTSL	High Temp Storage Bake, 150C	1000 Hours		-	-	1/77/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	3/231/0
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	-
AC	Autoclave 121C	96 Hours	-	-	-	-	3/231/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	3/231/0	-
TC	Temperature Cycle, -55/125C	700 Cycles	-	-	-	-	3/231/0
FTY	Final Test Yield	-	Pass	-	-	-	-
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	-	-	-

- QBS: Qual By Similarity
- Qual Device TPS62172DSGR is qualified at MSL2 260C
- 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

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

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

TI Qualification ID: R-CHG-2202-061

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

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