

number, for example; [TPS6281120QWRWYRQ1](#) – can ship with both Matte Sn and NiPdAu.

Pack (Tape & Reel) change:

What	Current	New
Reel Width W1	12.4mm	8.4mm
Carrier Tape W	12 MM	8 MM

Reason for Change:

Supply continuity

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
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change

Changes to product identification resulting from this PCN:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
UTL1	NSE	THA	Bangkok
CDAT	CDA	CHN	Chengdu

Sample product shipping label (not actual product label)

G3 = Matte Sn
G4 = NiPdAu

Product Affected:

TPS6281006QWRWYRQ1	TPS6281120QWRWYRQ1	TPS6281208QWRWYRQ1	TPS62812QWRWYRQ1
TPS6281008QWRWYRQ1	TPS6281126QWRWYRQ1	TPS628120MQWRWYRQ1	TPS6281320QWRWYRQ1
TPS628100MQWRWYRQ1	TPS628112AQWRWYRQ1	TPS6281220QWRWYRQ1	TPS6281326QWRWYRQ1
TPS6281020QWRWYRQ1	TPS628112MQWRWYRQ1	TPS6281228QWRWYRQ1	TPS628132DQWRWYRQ1
TPS62810QWRWYRQ1	TPS628113HQWRWYRQ1	TPS628122AQWRWYRQ1	TPS628132MQWRWYRQ1
TPS6281109QWRWYRQ1	TPS62811QWRWYRQ1	TPS628122GQWRWYRQ1	TPS62813QWRWYRQ1
TPS628110AQWRWYRQ1	TPS6281206QWRWYRQ1	TPS6281240QWRWYRQ1	

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

TPS6281xxxQWRWYRQ1 family: Additional Assembly site qualification

Product Attributes

Attributes	Original Product Reference: <u>TPS6281xxxQWRWYRQ1</u>	Change qualification: <u>TPS6281xxxQWRWYRQ1</u>	QBS Package reference <u>LMR33630CQRNXRQ1</u>
Automotive Grade Level	Grade 1	Grade 1	Grade 1
Operating Temp Range	-40 to +125 C	-40 to +125 C	-40 to +125 C
Product Function	Power Management	Power Management	Power Management
Die Attributes	-	-	-
Wafer Fab Supplier	RFAB	RFAB	DMOS6
Package Attributes	-	-	-
Assembly Site	UTL1	CDAT	CDAT
Package Type	VQFN-HR	VQFN-HR	VQFN-HR
Package Designator	RWY	RWY	RNX
Ball/Lead Count	9	9	12
Package Size mm	3 x 2 mm	3 x 2 mm	3 x 2 mm
Leadframe Plating Composition	Matte SN	NiPdAu	NiPdAu

- QBS: Qual By Similarity
- Qual Device TPS6281xxxQWRWYRQ1 is qualified at LEVEL2-260C

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	Original Product TPS628xxxQWRWYRQ1	Change Qualification TPS628xxxQWRWYRQ1	QBS assembly Qualification LMR33630CQRNXRQ1
Test Group A – Accelerated Environment Stress Tests							<i>(UTL1 Assembly)</i>	<i>(CDAT Assembly)</i>	<i>(CDAT Assembly)</i>
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	MSL/260C	3 cycles	3/693/0	1/154/0	3/693/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	3/231/0		
			3	77	Biased HAST, 110C/85%RH	264 Hours	-	QBS	3/231/0
AC	A3	JEDEC JESD22-A102	3	77	Autoclave	96 hours	3/231/0		
			3	77	Biased HAST, 110C/85%RH	264 Hours	-	QBS	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	-65C/150C	500 cycles	3/231/0	1/77/0 & QBS	3/231/0
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle	1000 Cycles	N/A	N/A	1/45/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp. Storage Life 175C	500 hours	3/231/0	1/77/0 & QBS	3/231/0
Test Group B – Accelerated Lifetime Simulation Tests									
HTOL	B1	JEDEC JESD22-A108	3	77	High Temp operational Life 125C	1000 hours	3/231/0	QBS	
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 125C	48 Hours	3/2400/0	QBS	
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life 150C	-	N/A	NA	

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Original Product TPS628xxxQWRWYRQ1	Change Qualification TPS628xxxQWRWYRQ1	QBS assembly Qualification LMR33630CQRNXRQ1
Test Group C – Package Assembly Integrity Tests							(UTL1 assembly)	(CDAT assembly)	
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear (Cpk>1.67)	-	N/A	N/A	
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull (Cpk>1.67)	-	N/A	N/A	
SD	C3	JEDEC JESD22-B102	1	15	Pb Free Surface Mount Solderability	4 hours bake 155 C	1/30/0	1/30/0	
PD	C4	JEDEC JESD22-B100 and B108	3	10	Automotive Physical Dimensions	Assy MQ	3/30/0	3/30/0	
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 Dependent 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	HBM-Q100	2000V,	1/3/0	QBS	
CDM	E3	AEC Q100-011	1	3	ESD Q100	750V	1/3/0	QBS	
Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Original Product TPS628xxxQWRWYRQ1	Change Qualification TPS628xxxQWRWYRQ1	QBS assembly Qualification LMR33630CQRNXRQ1
LU	E4	AEC Q100-004	1	6	Latch up	150C	1/6/0	QBS	
ED	E5	AEC Q100-009	3	30	Auto Electrical Distributions	Cpk>1.67 Room, hot, and cold test	3/90/0	QBS	

A1 (PC): Preconditioning:

Performed for THB, Biased HAST, AC, uHAST, TC & PTC 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

TI Qualification ID: 20210401-139416

For questions regarding this notice, e-mails can be sent to the contacts shown below or your local Field Sales Representative.

Location	E-Mail
USA	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
WW PCN Team	PCN_ww_admin_team@list.ti.com

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI’s products are provided subject to TI’s Terms of Sale (www.ti.com/legal/termsofsale.html) or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI’s provision of these resources does not expand or otherwise alter TI’s applicable warranties or warranty disclaimers for TI products.