

Upon expiry of this PCN, there will be a transition period where TI will combine lead free solutions in a single **standard part number**. For example; **TPS6503320BRGERQ1** – can ship with both Matte Sn and NiPdAu.

Example:

- Customer order for 7500 units of TPS6503320BRGERQ1 with 2500 units SPQ (Standard Pack Quantity per Reel).
- TI can satisfy the above order in one of the following ways.
 - I. 3 Reels of NiPdAu finish.
 - II. 3 Reels of Matte Sn finish
 - III. 2 Reels of Matte Sn and 1 reel of NiPdAu finish.
 - IV. 2 Reels of NiPdAu and 1 reel of Matte Sn finish.

The product datasheet(s) is being updated as summarized below.

The following change history provides further details.



TPS650320-Q1

SLVSFA1B – JANUARY 2022 – REVISED APRIL 2024

Changes from Revision A (March 2024) to Revision B (April 2024) Page

- Updated A1-A4 pin description to include information on the RGE0024K stencil design.....**3**



TPS650330-Q1

SLVSEM6D – MAY 2019 – REVISED APRIL 2024

Changes from Revision C (March 2024) to Revision D (April 2024) Page

- Updated A1-A4 pin description to include information on the RGE0024K stencil design.....**3**



TPS650333-Q1

SLVSEZ3B – MAY 2022 – REVISED APRIL 2024

Changes from Revision A (March 2024) to Revision B (April 2024) Page

- Updated A1-A4 pin description to include information on the RGE0024K stencil design.....**3**



TPS650331-Q1

SLVSEF1B – MAY 2022 – REVISED APRIL 2024

Changes from Revision A (March 2024) to Revision B (April 2024) Page

- Updated A1-A4 pin description to include information on the RGE0024K stencil design.....**3**



TPS650332-Q1

SLVSG12C – NOVEMBER 2021 – REVISED APRIL 2024

Changes from Revision B (March 2024) to Revision C (April 2024) Page

- Updated A1-A4 pin description to include information on the RGE0024K stencil design.....**3**

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
TPS650320-Q1	SLVSFA1A	SLVSFA1B	The document is not available on the TI website. Please contact the document owner at pyi@ti.com or visit the
TPS650330-Q1	SLVSEM6C	SLVSEM6D	
TPS650333-Q1	SLVSEZ3A	SLVSEZ3B	

TPS650331-Q1	SLVSEF1A	SLVSEF1B	MySecure site for a copy of the full datasheet.
TPS650332-Q1	SLVSG12B	SLVSG12C	

Reason for Change:

Supply Continuity

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

- a. ePOD's are specified in the respective datasheet
- b. New solder paste stencil is required for CDAT package devices and is backward compatible with the UTL1 devices.
- c. UTL1 stencil in package drawing will be replaced by that for CDAT

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)



TEXAS INSTRUMENTS
MADE IN: Malaysia
2DC: 20:
MSL 2 / 260C / 1 YEAR SEAL DT
MSL 1 / 235C / UNLIM 03/29/04
OPT:
ITEM: 39
LBL: 5A (L)T0:1750





(1P) **SN74LS07NSR**
(Q) **2000** (D) **0336**
(31T) LOT: 3959047MLA
(4W) TKY (1T) 7523483SI2
(P)
(2P) REV: (V) 0033317
(20L) 888: SHE (21L) CCO: USA
(22L) ASO: MLA (23L) ACO: MYS

Product Affected:

Group 1 devices (Assembly/Test Site (CDAT) qualification only):

TPS65032001RGERQ1	TPS65033000QRGETQ1	TPS65033207RGERQ1	TPS6503320HARGERQ1
TPS65032002QRGERQ1	TPS65033000RGERQ1	TPS6503320AARGERQ1	TPS6503320KRGERQ1
TPS65032006RGERQ1	TPS65033007RGERQ1	TPS6503320BRGERQ1	TPS6503320MRGERQ1
TPS65032008QRGERQ1	TPS65033007RGETQ1	TPS6503320CRGERQ1	TPS65033211RGERQ1
TPS6503200BRGERQ1	TPS6503300JRGERQ1	TPS6503320DRGERQ1	TPS65033300QRGERQ1
TPS6503200CRGERQ1	TPS65033104RGERQ1	TPS6503320FRGERQ1	TPS65033302RGERQ1
TPS6503200JRGERQ1	TPS65033201RGETQ1	TPS6503320GRGERQ1	TPS65033304RGERQ1
TPS65033000QRGERQ1	TPS65033203RGERQ1		

Group 2 device: (Assembly/Test Site (CDAT) & Die revision qualification):

TPS65033205QRGERQ1	TPS6503200AQRGETQ1	TPS6503300IQRGETQ1	TPS6503300DRGERQ1
TPS65033209QRGETQ1	TPS65032018ARGERQ1	TPS65033208RGERQ1	TPS65032018ARGETQ1
TPS65033209QRGERQ1	TPS6503300ERGERQ1	TPS6503300IQRGERQ1	TPS65033206RGERQ1
TPS65033201RGERQ1	TPS6503200AQRGERQ1	TPS65033303RGERQ1	TPS65033205QRGETQ1

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

TPS65033xxx (Fedora): Automotive Grade 1 Q100 Camera PMIC P2.1
Approved 21-Oct-2021

Product Attributes

Attributes	Qual Device: TPS65033001QRGERQ1	QBS Product Reference: .TPS65033000QRGERQ1
Automotive Grade Level	Grade 1	Grade 1
Operating Temp Range	-40 to +125 C	-40 to +125 C
Product Function	Power Management	Power Management
Wafer Fab Supplier	RFAB	RFAB
Die Revision	B1	B0
Assembly Site	UTL1	UTL1
Package Type	QFN	QFN
Package Designator	RGE	RGE
Ball/Lead Count	24	24

- QBS: Qual By Similarity
- Qual Device TPS65033001QRGERQ1 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: TPS65033001QRGERQ1	QBS Product Reference: .TPS65033000QRGERQ1
Test Group A – Accelerated Environment Stress Tests								
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	(MSL 3 / 260C)	-	No fails
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
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 175C	1000 hours	-	3/135/0
Test Group B – Accelerated Lifetime Simulation Tests								
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 125C	1000 hours	-	3/231/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 125C	48 hours	1/800/0	3/2400/0
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	-	-	(1)
Test Group C – Package Assembly Integrity Tests								
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear	Cpk>1.67	-	3/90/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Cpk>1.67	-	3/90/0
SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb Free Solder (Post-Bake)	-	1/15/0
SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb Solder (Post-Bake)	-	1/15/0
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	-	3/30/0
LI	C6	JEDEC JESD22-B105	1	50	Lead Integrity	-	-	-

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	4000 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	(Per AEC-Q100-004)	1/6/0
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	1/30/0
Additional Tests							
YLD			-	-	Yield Evaluation	(per mfg. Site specification)	1/Pass

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

TI Qualification ID: 20210107-137686

Affected ZVEI IDs: SEM-DE-02, SEM-PA-04, SEM-PA-07, SEM-PA-08, SEM-PA-18, SEM-TF-01

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

Location	E-Mail
WW Change Management Team	PCN_ww_admin_team@list.ti.com

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