PCN Number:	20230329001.2	**PCN Date:**	March 30, 2023
Title:	Qualification of ASEK as an alternate Assembly site for select devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Sept 25, 2023	**Sample Requests accepted until:**	April 29, 2023*

***Sample requests received after April 29, 2023 will not be supported.**

Change Type:

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

PCN Details

Description of Change:

Texas Instruments Incorporated is announcing the qualification of ASEK as an additional Assembly site for set of devices listed below. There are no construction differences between the two sites.

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
☒ No Change	☒ No Change	☒ No Change	☒ No Change

Changes to product identification resulting from this PCN:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
STATS ChipPac	SCK	KOR	INCHEON
ASEK	**ASF**	**TWN**	**Kaohsiung**

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS
MADE IN: Malaysia
2DC: 2Q:
MSL 2 /260C/1 YEAR | SEAL DT
MSL 1 /235C/UNLIM | 03/29/04
G4
OPT:
ITEM: 39
LBL: 5A (L)TO:1750
(1P) SN74LS07NSR
(Q) 2000 (D) 0336
(31T)LOT: 3959047MLA
(4W) TKY(1T) 7523483SI2
(P)
(2P) REV: (V) 0033317
(20L) CSO:SHE (21L) CCO:USA
(22L) ASO:MLA (23L) ACO:MYS

Product Affected:			
TPS65931181RWERQ1	TPS65941111RWERQ1	TPS65941213RWERQ1	TPS65941310RWERQ1
TPS65931282RWERQ1	TPS65941212RWERQ1		

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

Approved 07-March-2023

Product Attributes

Attributes	Qual device: TPS65931181RWERQ1 TPS65931282RWERQ1 TPS65941111RWERQ1 TPS65941212RWERQ1 TPS65941213RWERQ1 TPS65941310RWERQ1	QBS Product Reference: PO94QRWERQ1-B0	QBS Product Reference: PO94QRWERQ1-A0	QBS Product Reference: TPS65941212RWERQ1-B0	QBS Process Reference: TPS61378QWRTERQ1 (A0)
Automotive Grade Level	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1
Operating Temp Range	-40 to +125 C	-40 to +125 C	-40 to +125 C	-40 to +125 C	-40 to +125 C
Product Function	Power Management	Power Management	Power Management	Power Management	Power Management
Wafer Fab Supplier	RFAB	RFAB	RFAB	RFAB	RFAB
Assembly Site	ASEK	ASEK	SCSAT	SCSAT	CDAT
Package Type	QFN	QFN	QFN	QFN	QFN
Package Designator	RWE	RWE	RWE	RWE	RTE
Ball/Lead Count	56	56	56	56	16

- QBS: Qual By Similarity
- Qual Devices are qualified at LEVEL3-260C.
- Qual Devices are memory spins of PO94QRWERQ1 and fully qualified by similarity to the QBS product reference.

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	QBS Product Reference: PO94QRWERQ1-B0	QBS Product Reference: PO94QRWERQ1-A0	QBS Product Reference: TPS65941212RWERQ1-B0	QBS Process Reference: TPS61378QWRTERQ1 (A0)
Test Group A – Accelerated Environment Stress Tests											
	-			-	-	Precon Level 3	L3 / 260C	No Fails	No Fails	No Fails	-
	HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	3/231/0	3/231/0	-	-
	AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 hours	3/231/0	3/231/0	1/77/0	-
	TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 cycles	3/231/0	3/231/0	1/77/0	-
	PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle, -40/125C	1000 cycles	1/45/0	1/45/0	-	-
	HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 175C	500 hours	3/135/0	3/135/0	-	-
Test Group B – Accelerated Lifetime Simulation Tests											
	HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 125C	1000 hours	-	2/154/0	1/77/0	-
	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	-	N/A	N/A	N/A	-

Test Group C – Package Assembly Integrity Tests											
	WBS	C1	AEC Q100-001	1	30	Wire Bond Shear (Cpk>1.67)	-	3/90/0	-	3/90/0	-
	WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull (Cpk>1.67)	-	3/90/0	-	3/90/0	-
	SD	C3	JEDEC JESD22-B102	1	15	Pb Free Surface Mount Solderability	Pb Free Solder	1/15/0	1/15/0	-	-
	SD	C3	JEDEC JESD22-B102	1	15	Pb Surface Mount Solderability	Pb Solder	1/15/0	1/15/0	-	-
	PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	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	Completed Per Process Technology Requirements	-
	TDDB	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	Completed Per Process Technology Requirements	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	Completed Per Process Technology Requirements	-
	NBTI	D4	-	-	-	Negative Bias Temperature Instability	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	-
	SM	D5	-	-	-	Stress Migration	-	Completed Per Process Technology Requirements	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	4000 V	1/3/0	-	1/3/0	-
	CDM	E3	AEC Q100-011	1	3	ESD - CDM	1000 V	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	1/6/0	-
	ED	E5	AEC Q100-009	3	30	Auto Electrical Distributions	Cpk>1.67 Room, hot, and cold test	-	-	3/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

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

TI Qualification ID: R-CHG-2301-062

Affected ZVEI IDs: SEM-PA-18

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

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.