










<b>PCN Number:</b>	20170112004	<b>PCN Date:</b>	Feb 3, 2017								
<b>Title:</b>	TPS92630QPWPRQ1 DMOS5 to RFAB and Roughen LDF Change										
<b>Customer Contact:</b>	PCN_ww_admin_team@list.ti.com	<b>Dept:</b>	Quality Services								
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Aug. 3, 2017	<b>Estimated Sample Availability:</b>	Date provided at sample request								
<b>Change Type:</b>											
<input type="checkbox"/> Assembly Site	<input type="checkbox"/> Design	<input type="checkbox"/> Wafer Bump Site									
<input type="checkbox"/> Assembly Process	<input type="checkbox"/> Data Sheet	<input type="checkbox"/> Wafer Bump Material									
<input checked="" type="checkbox"/> Assembly Materials	<input type="checkbox"/> Part number change	<input type="checkbox"/> Wafer Bump Process									
<input type="checkbox"/> Mechanical Specification	<input type="checkbox"/> Test Site	<input checked="" type="checkbox"/> Wafer Fab Site									
<input type="checkbox"/> Packing/Shipping/Labeling	<input type="checkbox"/> Test Process	<input type="checkbox"/> Wafer Fab Materials									
		<input type="checkbox"/> Wafer Fab Process									
<b>PCN Details</b>											
<b>Description of Change:</b>											
Texas Instruments Incorporated is announcing the qualification for TPS92630QPWPRQ1 from DMOS5 to RFAB and change from standard LDF 4221240-0001 to roughen LDF 4221240-0002, apply for both DMOS5 & RFAB material											
<b>Material</b>	<b>Current</b>	<b>New Material</b>									
Wafer diameter	DMOS5 200mm	RFAB 300mm									
Leadframe	standard LDF 4221240-0001	roughen LDF 4221240-0002									
<b>Reason for Change:</b>											
<ul style="list-style-type: none"> <li>Mitigate capacity shortage in the DMOS5 wafer site.</li> <li>Reduced delamination risk. Enhanced part reliability.</li> </ul>											
<b>Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):</b>											
None											
<b>Changes to product identification resulting from this PCN:</b>											
<b>Current</b>											
<b>Wafer Site</b>	<b>Wafer site code (20L)</b>	<b>Wafer country code (21L)</b>									
DMOS5	DM5	USA									
<b>New</b>											
<b>Wafer Site</b>	<b>Wafer site code (20L)</b>	<b>Wafer country code (21L)</b>									
RFAB	RFB	USA									
<b>Example shipping label (not actual product label)</b>											
<table border="1"> <tr> <td>  <b>TEXAS INSTRUMENTS</b>  MADE IN: Malaysia  2DC: 20: </td> <td>  </td> <td>  </td> <td> (1P) SN74LS07NSR  (Q) 2000 (D) 0336  (31T) LOT: 3959047MLA  (4W) TKY (1T) 7523483S12  (P)  (2P) REV: (Y) 0033317  (26L) CSO: SHE (21L) CCO:USA  (22L) ASO:MLA (23L) ACO:MYS </td> </tr> <tr> <td> MSL '2 /260C/1 YEAR SEAL DT  MSL 1 /235C/UNLIM 03/29/04  OPT:  ITEM: 39  <b>LBL: 5A (L)T0:1750</b> </td> <td></td> <td></td> <td></td> </tr> </table>				 <b>TEXAS INSTRUMENTS</b> MADE IN: Malaysia 2DC: 20:			(1P) SN74LS07NSR (Q) 2000 (D) 0336 (31T) LOT: 3959047MLA (4W) TKY (1T) 7523483S12 (P) (2P) REV: (Y) 0033317 (26L) CSO: SHE (21L) CCO:USA (22L) ASO:MLA (23L) ACO:MYS	MSL '2 /260C/1 YEAR SEAL DT MSL 1 /235C/UNLIM 03/29/04 OPT: ITEM: 39 <b>LBL: 5A (L)T0:1750</b>			
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<b>Product Affected:</b>											
TPS92630QPWPRQ1											

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

**TPS92630 Offload to RFAB Qual  
Approved 04-Jan-2017**

**Product Attributes**

Attributes	Qual Device: TPS92630QPWPRQ1	QBS Product Reference: TPS92630	QBS Process Reference: TPS653853QDCARQ1
<b>Qual ID</b>	20150825-115103	20121113-71902	20131114-97722
<b>Automotive Grade Level</b>	Grade 1	Grade 1	Grade 1
<b>Operating Temp Range</b>	-40 to +125 C	-40 to +125 C	-40 to +125 C
<b>Wafer Fab Supplier</b>	RFAB	DMOS5	RFAB
<b>Die Revision</b>	A1	A1	A0
<b>Assembly Site</b>	TAI	TAI	TAI
<b>Package Type</b>	HTSSOP	HTSSOP	HTSSOP
<b>Package Designator</b>	PWP	PWP	DCA
<b>Ball/Lead Count</b>	16	16	48

- QBS: Qual By Similarity  
- Qual Device TPS92630QPWPRQ1 is qualified at LEVEL3-260CG

**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: TPS92630QPWPRQ1	QBS Product Reference: TPS92630	QBS Process Reference: TPS653853QDCARQ1
<b>Qual ID</b>							20150825-115103	20121113-71902	20131114-97722
<b>Test Group A – Accelerated Environment Stress Tests</b>									
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning Level 3	260C	-	3/920/0	3/1470/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	192 Hr/85%RH, 130C	-	-	3/237/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hrs	-	3/231/0	-
AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 Hrs	-	3/231/0	3/246/0

Type	#	Test Spec	Min Lot Qty	SS/ Lot	Test Name / Condition	Duration	Qual Device: TPS92630QPWPRQ1	QBS Product Reference: TPS92630	QBS Process Reference: TPS653853QDCARQ1
TC	A 4	JEDEC JESD22 -A104 and Appendix x 3	3	77	Temperature Cycle, - 65/150C	1000 cycles	-	3/231/0	3/261/0
PTC	A 5	JEDEC JESD22 -A105	1	45	Power Temperature Cycle, - 40/125C	1000 cycles	-	1/45/0	1/47/0
HTSL	A 6	JEDEC JESD22 -A103	1	45	High Temp Storage Bake 150C	1000 Hrs	-	1/45/0	3/270/0
<b>Test Group B – Accelerated Lifetime Simulation Tests</b>									
HTOL	B 1	JEDEC JESD22 -A108	3	77	Auto High Temp Operating Life Grade 1	125C(1000 Hrs)	1/77/0	-	-
HTOL	B 1	JEDEC JESD22 -A108	3	77	HTOL 125C	125C (1000 Hrs)	-	3/231/0	5/326/0
ELFR	B 2	AEC Q100-008	3	800	Early Life Failure Rate, 125C	48 Hrs	-	3/2400/0	3/2082/0
ELFR	B 2	AEC Q100-008	3	800	Early Life Failure Rate, 150C	48 hrs	-	-	1/805/0
<b>Test Group C – Package Assembly Integrity Tests</b>									
WBS	C 1	AEC Q100-001	1	30	Wire Bond Shear (Cpk>1.67)	-	1/30/0	1/30/0	1/30/0
WBP	C 2	MIL-STD883 Method 2011	1	30	Wire Bond Pull (Cpk>1.67)	-	1/30/0	1/30/0	1/30/0
<b>Test Group D – Die Fabrication Reliability Tests</b>									
EM	D 1	JESD61	-	-	Electromigration	-	Completed Per Process Technology Requirements	-	-
TDDDB	D 2	JESD35	-	-	Time Dependant Dielectric Breakdown	-	Completed Per Process Technology Requirements	-	-
HCI	D 3	JESD60 & 28	-	-	Hot Injection Carrier	-	Completed Per Process Technology Requirements	-	-
NBTI	D 4	-	-	-	Negative Bias Temperature Instability	-	Completed Per Process Technology Requirements	-	-
SM	D 5	-	-	-	Stress Migration	-	Completed Per Process Technology Requirements	-	-
<b>Test Group E – Electrical Verification Tests</b>									

Type	#	Test Spec	Min Lot Qty	SS/ Lot	Test Name / Condition	Duration	Qual Device: TPS92630QPWPRQ1	QBS Product Reference: TPS92630	QBS Process Reference: TPS653853QDCARQ1
HBM	E 2	AEC Q100-002	1	3	Auto ESD HBM	500V, 1000V, 1500V, 2000V, 2500V, 3000V	1/3/0	1/3/0	1/3/0
CDM	E 3	AEC Q100-011	1	3	Auto ESD CDM	250V, 500V, 750V	1/3/0	1/3/0	1/3/0
LU	E 4	AEC Q100-004	1	6	Auto Latch-up	RT and HT	1/6/0	1/6/0	1/6/0
ED	E 5	AEC Q100-009	3	30	Auto Electrical Distributions	Cpk>1.6 7 Room, hot, and cold test	1/90/0	3/90/0	3/90/0
Additional Tests									
MQ			-	-	Manufacturability (Auto Assembly)	(per automotive requirements)	1/Pass	-	-
MQ			-	-	Manufacturability (Wafer Fab)	(per mfg. Site specification)	1/Pass	-	-
MSL			-	-	Moisture Sensitivity	MSL3	1/12/0	-	-
MSL			-	-	Thermal Path Integrity, JEDEC, L3	level 3, 260C	-	3/36/0	3/43/0

**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

**Green/Pb-free Status:**

Qualified Pb-Free(SMT) and Green

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

Location	E-Mail
USA	<a href="mailto:PCNAmericasContact@list.ti.com">PCNAmericasContact@list.ti.com</a>
Europe	<a href="mailto:PCNEuropeContact@list.ti.com">PCNEuropeContact@list.ti.com</a>
Asia Pacific	<a href="mailto:PCNAsiaContact@list.ti.com">PCNAsiaContact@list.ti.com</a>
Japan	<a href="mailto:PCNJapanContact@list.ti.com">PCNJapanContact@list.ti.com</a>