



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

**PCN 20140714000
TPS793X family to NFME
Final Change Notification**

Date: 7/16/2014
To: MOUSER PCN

Dear Customer:

This is an announcement of change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

Texas Instruments requires acknowledgement of receipt of this notification within **30** days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance of the change. The proposed first ship date is indicated on page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

If samples or additional data are required, requests must be received within 30 days of acknowledgement as samples are not built ahead of the change. You may contact the PCN Manager or your local Field Sales Representative to acknowledge this PCN and request samples or additional data.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Manager (PCN_ww_admin_team@list.ti.com).

Sincerely,

PCN Team
SC Business Services
Phone: +1(214) 480-6037
Fax: +1(214) 480-6659

20140714000
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
TPS79301DBVRQ1	null
TPS79318DBVRG4Q1	null
TPS79318DBVRQ1	null
TPS79325DBVRQ1	null
TPS79333DBVRG4Q1	null
TPS79333DBVRQ1	null

Technical details of this Product Change follow on the next page(s).

PCN Number:	20140714000			PCN Date:	07/16/2014
Title:	TPS793X family to NFME				
Customer Contact:	PCN_ww_admin_team@list.ti.com	Phone:	+1(214)480-6037	Dept:	Quality Services
Proposed 1st Ship Date:	01/16/2015	Estimated Sample Availability:	Date provided at sample request		
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 NFME for TPS79X family of devices to offload from Lingsen to NFME. Material changes are as follows:					
Pin 5 Pkg DBV	From:	To:	Pin 6 Pkg DBV	From:	To:
Leadframe	SID# 0009202506	SID# L-05 Cu, NiPdAu	Leadframe	SID# 0009202610	SID# L-06 Cu, NiPdAu
Die Attach	SID# 0003C10332	SID# A-03	Die Attach	SID# 0003C10332	SID# A-03
Mold Compound	SID# 0011G60007	SID# R-13	Mold Compound	SID# 0011G60007	SID# R-13
Bond Wire	SID# 0005M31201 1.2 MIL Au	SID# W-06 1.3 MIL Au	Bond Wire	SID# 0005M31201 1.2 MIL Au	SID# W-06 1.3 MIL Au
Reason for Change:					
- Mitigate capacity shortage in the Lingsen assembly/test site. - Dual source Assembly & Test operations for TPS793X-SOT devices from LEN to NFME.					
Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):					
None					
Changes to product identification resulting from this PCN:					
Current					
Assembly Site	Assy site code (22L)	Assy country code (23L)			
Lingsen (Lingsen Precision Industries)	LIN	Taiwan			
New					
Chip Site	Assy site code (22L)	Assy country code (23L)			
NFME (Nantong Fujitsu Microelectronics)	NFM	China			

Example shipping label (not actual product label)

 TEXAS INSTRUMENTS MADE IN: Malaysia 2DC: 2G:	 G4		(1P) SN74LS07NSR (Q) 2000 (D) 0336 (31T) LOT: 3959047MLA (4W) TKY (1T) 7523483SI2 (P) (2P) REV: (V) 0033317 (20L) CSO: SRE (21L) CCO: USA (22L) ASO: MLA (23L) ACO: MYS
MSL '2 / 260C / 1 YEAR MSL 1 / 235C / UNLIM SEAL DT 03/29/04 OPT: ITEM: LBL: 5A (L)T0:1750			

Product Affected:

TPS79301DBVRG4Q1	TPS79318DBVRQ1	TPS793285QDBVRQ1
TPS79301DBVRQ1	TPS79325DBVRG4Q1	TPS79333DBVRG4Q1
TPS79318DBVRG4Q1	TPS79325DBVRQ1	TPS79333DBVRQ1

Automotive Product Qualification Summary

(As per AEC-Q100 and JEDEC Guidelines)

Supplier Name:	Texas Instruments Inc.	Supplier Wafer Fabrication Site:	Texas Instruments Dallas fab (DFAB)
Supplier Code:		Supplier Die Revision:	B
Supplier Part Number:	TPS73201QDBVRQ1	Supplier Assembly/Test Site:	NFME
Customer Name:		Supplier Package / Pin:	DBV / 5
Customer Part Number:		Pb-Free Lead Frame (Y/N):	Y
Device Description:	Regulator	Green Mold Compound (Y/N):	Y
MSL Rating:	Level1	Operating Temp Range:	-40C to +125C
Peak Solder Reflow Temp:	260C	Automotive Grade Level :	1

Test	#	Reference	Test Conditions	Min Lots (2)	SS / lot (2)	Min Total (2)	Results Lot/pass/fail	Comments: (N/A =Not Applicable)	Exceptions to AEC - Q100
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TEST GROUP A – ACCELERATED ENVIRONMENT STRESS TESTS

PC	A1	JESD22-113 J-STD-020	Preconditioning: SMD only; Moisture Preconditioning for THB/HAST, AC/UHST, TC, HTSL, and HTOL	Performed on ALL SMD devices prior to THB/HAST, AC/UHST, TC and PTC					
HAST	A2	JESD22-A101 JESD22-A110	Highly Accelerated Stress Test: 130°C/85%/96 hours or 110°C/85%/264 hours	3	77	231	3/231/0		
AC	A3	JESD22-A102 JESD22-A118	Autoclave: 121°C/15 psig/96 hours	3	77	231	3/231/0		
TC	A4	JESD22-A104	Temperature Cycle: -65°C/+150°C/500 cycles Post Temperature Cycle Bond Pull: 3 grams minimum	3 1	77 5	231 5	3/231/0 1/5/0		

TEST GROUP B – ACCELERATED LIFETIME SIMULATION TESTS

HTOL	B1	JESD22-A108	High Temp Operating Life: 125°C/1000 hours	3	77	231	3/231/0	QBS to current data	
ELFR	B2	AEC-Q100-008	Early Life Failure Rate:	3	800	2400	3/800/0	QBS to current data	

TEST GROUP C – PACKAGE ASSEMBLY INTEGRITY TESTS

WBS	C1	AEC-Q100-001	Wire Bond Shear Test: (Cpk > 1.67)	30 bonds	5 parts min.	30 bonds	Pass		
WBP	C2	Mil-Std-883 Method 2011	Wire Bond Pull: Each bonder used (Cpk > 1.67)	30 bonds	5 parts min.	30 bonds	Pass		
SD	C3	JESD22-B102	Solderability: (>95% coverage) 8 hr steam age (1 hour for Au-plated leads)	1	30	30	1/30/0		
PD	C4	JESD22-B100 JESD22-B108	Physical Dimensions: (Cpk > 1.67)	3	10	30	3/10/0		

TEST GROUP E- ELECTRICAL VERIFICATION

TEST	E1	User/Supplier Specification	Pre and Post Stress Electrical Test:	All	All	All	Pass		
HBM	E2	AEC-Q100-002	Electrostatic Discharge, Human Body Model: (2kV - H2 or better)	1	See Test Method			QBS to current device data	
CDM	E3	AEC-Q100-101	Electrostatic Discharge, Charged Device Model: (750V corner leads, 500V for all other pins)	1	See Test Method		Pass		
LU	E4	AEC-Q100-004	Latch-Up:	1	6	6		QBS to current device data	
ED	E5	AEC-Q100-009	Electrical Distributions: (Cpk > 1.67)	1	30	30	Pass		

- (1) Grade 0 (or A): -40°C to +150°C ambient operating temperature range
Grade 1 (or Q): -40°C to +125°C ambient operating temperature range
Grade 2 (or T): -40°C to +105°C ambient operating temperature range
Grade 3 (or I): -40°C to +85°C ambient operating temperature range
Grade 4 (or C): -0°C to +150°C ambient operating temperature range
- (2) These are recommended minimum lot/sample sizes. Lot/sample size may be reduced depending on available data.
- (3) Generic data may be used.

Quality and Reliability Data Disclaimer

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customer should provide adequate design and operating safeguards. Quality and reliability data provided by Texas Instruments is intended to be an estimate of product performance based upon history only. It does not imply that any performance levels reflected in such data can be met if the product is operated outside the conditions expressly stated in the latest published data sheet or agreed-to customer specification for a device.

Reliability data shows characteristic failure mechanisms of the specific environmental stress as documented in the industry standards for each stress condition.

Assembly Qualification

Ball Shear Data



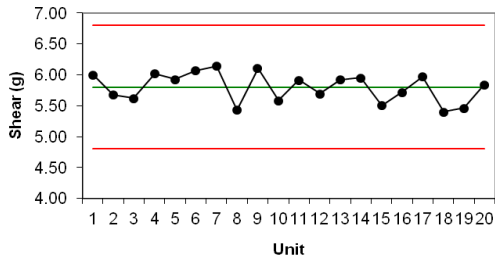
Min	5.13
Max	6.67
Ave	5.80
Stdev	0.33
CPk	1.80
Spec Criteria (LSL) (g)	4.00
Stability	PASS
Capability	PASS
Pass/Fail	PASS

Wire Pull Data

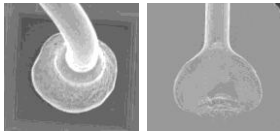
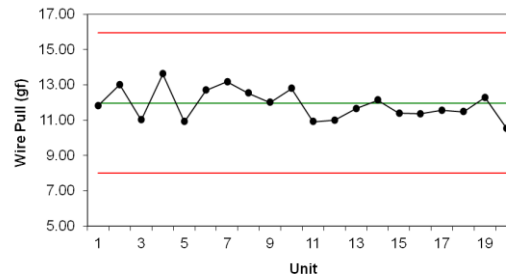


Min	9.10
Max	14.74
Ave	11.89
Stdev	1.33
CPk	1.99
Spec Criteria (LSL) (g)	4
Stability	PASS
Capability	PASS
Pass/Fail	PASS

Xbar Chart for Ball Shear



Xbar Chart for Wirepull



No visual anomalies seen.

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Electrical Characterization

Legend:
CPK < 1.33
1.33 < CPK < 1.67
CPK > 1.67

PASS

Spec Parameter	Test Parameter	LSL	USL	Units	Temp @	Mean	StDev	CPk
VOUT Accuracy	P1100001_VregOut Vin *1mA	2.88	3.12	V	-40	3.006	2.15E-02	1.77
VOUT Accuracy	P1100001_VregOut Vin *1mA	2.88	3.12	V	25	3.008	1.97E-02	1.90
VOUT Accuracy	P1100001_VregOut Vin *1mA	2.88	3.12	V	125	2.983	8.47E-03	4.05
VOUT Accuracy	P1200001_VregOut VinMin *50mA	2.88	3.12	V	-40	2.993	2.15E-02	1.75
VOUT Accuracy	P1200001_VregOut VinMin *50mA	2.88	3.12	V	25	2.988	1.95E-02	1.85
VOUT Accuracy	P1200001_VregOut VinMin *50mA	2.88	3.12	V	125	2.946	8.87E-03	2.48
Ground-pin Current	P120100001_Iq Gnd *Vin 1mA		5.80E-06	Amps	-40	2.90E-06	5.31E-08	18.23
Ground-pin Current	P120100001_Iq Gnd *Vin 1mA		5.80E-06	Amps	25	3.43E-06	1.40E-07	5.64
Ground-pin Current	P120100001_Iq Gnd *Vin 1mA		5.80E-06	Amps	125	4.41E-06	1.22E-07	3.81
Ground-pin Current	P120200001_Iq Gnd *Vin 50mA		5.80E-06	Amps	-40	2.953E-06	5.07E-08	18.72
Ground-pin Current	P120200001_Iq Gnd *Vin 50mA		5.80E-06	Amps	25	3.493E-06	1.25E-07	6.15
Ground-pin Current	P120200001_Iq Gnd *Vin 50mA		5.80E-06	Amps	125	4.322E-06	1.62E-07	3.04
Dropout Voltage	P130100001_DropOut *50mA		0.75	V	-40	0.3605	6.53E-03	19.88
Dropout Voltage	P130100001_DropOut *50mA		0.75	V	25	0.4604	2.65E-03	36.43
Dropout Voltage	P130100001_DropOut *50mA		0.75	V	125	0.5974	8.42E-03	6.04
Dropout Voltage	P130500001_DropOut *15mA		0.75	V	-40	0.1023	1.84E-03	117.34
Dropout Voltage	P130500001_DropOut *15mA		0.75	V	25	0.1305	7.13E-04	289.62
Dropout Voltage	P130500001_DropOut *15mA		0.75	V	125	0.1695	2.35E-03	82.34
Output Current Limit	P180100001_ *ILimit	0.125	0.75	Amps	-40	0.3392	3.31E-03	21.57
Output Current Limit	P180100001_ *ILimit	0.125	0.75	Amps	25	0.2902	1.46E-03	37.72
Output Current Limit	P180100001_ *ILimit	0.125	0.75	Amps	125	0.1632	7.49E-03	1.70
VOUT Accuracy	P4000001_VregOut 3.2 *15mA	2.88	3.12	V	-40	2.998	2.05E-02	1.92
VOUT Accuracy	P4000001_VregOut 3.2 *15mA	2.88	3.12	V	25	2.991	1.76E-02	2.10
VOUT Accuracy	P4000001_VregOut 3.2 *15mA	2.88	3.12	V	125	2.949	9.94E-03	2.31

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TPS79301 - Electrical Characterization

Parameter	Temp	LTL	UTL	Units				Notes
					Avg	StdDev	CPK	
Vreg VIN 3.2v *1mA load	125C	1.129	1.31	VOLTS	1.219E+00	1.935E-03	15.55	
Vreg VIN 5.5v *1mA load	125C	1.129	1.31	VOLTS	1.220E+00	2.078E-03	14.46	
Vreg VIN 5.5v *200mA lo	125C	1.129	1.31	VOLTS	1.245E+00	2.408E-03	9.05	
Vreg VIN 3.2v *200mA lo	125C	1.129	1.31	VOLTS	1.244E+00	2.459E-03	8.92	
Func_Dis VIN 2.7v *10mA loa	125C	-0.8	0.8	VOLTS	1.141E-01	7.991E-02	2.86	
Vdrop VIN 5.5v *200mA lo	125C	73	107	mVOLTS	9.295E+01	2.581E+00	1.81	
siqq Input standby *I	125C	-100	50	nAMPS	3.452E+00	1.975E+00	7.86	
siqq Input standby *I2	125C	-100	50	nAMPS	3.531E+00	1.967E+00	7.87	
siqq Input standby *Delta	125C	-60	30	nAMPS	7.939E-02	1.118E+00	8.92	
lih VENB *0.9v	125C	-0.1	0.1	uAMPS	3.914E-04	1.202E-03	27.62	
lih VENB *1.8v	125C	-0.1	0.1	uAMPS	2.997E-03	3.355E-03	9.64	
iqq_gnd VIN 5.5v *10mA loa	125C	-220	218	uAMPS	-2.060E+02	1.863E+00	2.51	
iqq_gnd VIN 5.5v *100mA lo	125C	-220	218	uAMPS	-2.060E+02	1.833E+00	2.54	
iqq_gnd Delta 5.5 *10mA loa	125C	-120	120	uAMPS	-4.572E+01	2.962E-01	83.60	
OUT ILimit *VIN 5.5v	125C	285	600	mAMPS	3.912E+02	1.453E+01	2.44	
Vreg VIN 3.2v *1mA load	32C	1.129	1.31	VOLTS	1.220E+00	2.290E-03	13.11	
Vreg VIN 5.5v *1mA load	32C	1.129	1.31	VOLTS	1.221E+00	2.258E-03	13.21	
Vreg VIN 5.5v *200mA lo	32C	1.129	1.31	VOLTS	1.241E+00	2.355E-03	9.72	
Vreg VIN 3.2v *200mA lo	32C	1.129	1.31	VOLTS	1.241E+00	2.387E-03	9.61	
Func_Dis VIN 2.7v *10mA loa	32C	-0.8	0.8	VOLTS	2.134E-01	7.076E-02	2.76	
Vdrop VIN 5.5v *200mA lo	32C		107	mVOLTS	8.379E+01	3.847E+00	2.01	
siqq Input standby *I	32C	-100	50	nAMPS	8.107E-01	9.304E-01	17.62	
siqq Input standby *I2	32C	-100	50	nAMPS	1.036E+00	1.085E+00	15.04	
siqq Input standby *Delta	32C	-60	30	nAMPS	2.254E-01	4.271E-01	23.24	
lih VENB *0.9v	32C	-0.1	0.1	uAMPS	7.272E-04	1.160E-03	28.53	
lih VENB *1.8v	32C	-0.1	0.1	uAMPS	3.045E-03	3.117E-03	10.37	
iqq_gnd VIN 5.5v *10mA loa	32C	-220	218	uAMPS	-1.972E+02	1.540E+00	4.94	
iqq_gnd VIN 5.5v *100mA lo	32C	-220	218	uAMPS	-1.972E+02	1.525E+00	4.99	
iqq_gnd Delta 5.5 *10mA loa	32C	-120	120	uAMPS	-4.432E+01	3.277E-01	76.97	
OUT ILimit *VIN 5.5v	32C	285	600	mAMPS	3.928E+02	1.651E+01	2.18	
Vreg VIN 3.2v *1mA load	-40C	1.129	1.31	VOLTS	1.218E+00	3.271E-03	9.07	
Vreg VIN 5.5v *1mA load	-40C	1.129	1.31	VOLTS	1.218E+00	4.698E-03	6.31	
Vreg VIN 5.5v *200mA lo	-40C	1.129	1.31	VOLTS	1.235E+00	3.441E-03	7.26	
Vreg VIN 3.2v *200mA lo	-40C	1.129	1.31	VOLTS	1.235E+00	3.172E-03	7.88	
Func_Dis VIN 2.7v *10mA loa	-40C	-0.8	0.8	VOLTS	1.740E-01	7.400E-02	2.82	
Vdrop VIN 5.5v *200mA lo	-40C		107	mVOLTS	6.969E+01	4.831E+00	2.57	
siqq Input standby *I	-40C	-100	50	nAMPS	4.913E-01	9.005E-01	18.33	
siqq Input standby *I2	-40C	-100	50	nAMPS	5.773E-01	1.055E+00	15.62	
siqq Input standby *Delta	-40C	-60	30	nAMPS	8.597E-02	4.298E-01	23.20	
lih VENB *0.9v	-40C	-0.1	0.1	uAMPS	6.416E-04	1.206E-03	27.46	
lih VENB *1.8v	-40C	-0.1	0.1	uAMPS	2.714E-03	2.310E-03	14.04	
iqq_gnd VIN 5.5v *10mA loa	-40C	-220	218	uAMPS	-1.863E+02	2.058E+00	5.46	
iqq_gnd VIN 5.5v *100mA lo	-40C	-220	218	uAMPS	-1.862E+02	2.009E+00	5.60	
iqq_gnd Delta 5.5 *10mA loa	-40C	-120	120	uAMPS	-4.213E+01	4.148E-01	62.57	
OUT ILimit *VIN 5.5v	-40C	285	600	mAMPS	3.938E+02	1.832E+01	1.98	

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	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com