



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN 20200519003.2
Qualification of RFAB Wafer Fab site for LM5360xx devices
Final Change Notification

Date: May 26, 2020
To: PREMIER FARNELL PCN
\$Recipients_Cc%

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

PCN 20200519003.2
Final Change Notification
Attachments

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
LM536003QDSXTQ1	null
LM536005QDSXTQ1	null
LM53600AQDSXTQ1	null
LM536015QDSXTQ1	null

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

PCN Number:	PCN 20200519003.2	PCN Date:	May 26, 2020
Title:	Qualification of RFAB Wafer Fab site for LM5360xx devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	Nov 26, 2020	Estimated Sample Availability:	Date provided at sample request
Change Type:			
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet
<input type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process
<input type="checkbox"/>		<input checked="" type="checkbox"/>	Wafer Bump Site
<input type="checkbox"/>		<input checked="" type="checkbox"/>	Wafer Bump Material
<input type="checkbox"/>		<input checked="" type="checkbox"/>	Wafer Bump Process
<input type="checkbox"/>		<input checked="" type="checkbox"/>	Wafer Fab Site
<input type="checkbox"/>		<input checked="" type="checkbox"/>	Wafer Fab Materials
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments Incorporated is announcing the qualification of RFAB Wafer Fab site for LM5360xx devices.

Current			New		
Wafer Fab Site	Process	Wafer Diameter	Wafer Fab Site	Process	Wafer Diameter
DP1DM5	LBC8	200 mm	RFAB	LBC8	300 mm

The LBC8 process technology has been running successfully in production at RFAB since 2013.

Reason for Change:

Continuity of Supply.

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

None

Changes to product identification resulting from this PCN:

Current

Chip Sites	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
DP1DM5	DM5	USA	Dallas

New

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
RFAB	RFB	USA	Richardson

Sample product shipping label (not actual product label)



MADE IN: Malaysia
2DC: 2Q:

MSL '2 / 260C / 1 YEAR	SEAL DT
MSL 1 / 235C / UNLIM	03 / 29 / 04

OPT: 39
ITEM: LBL: 5A (L)T0:1750



(1P) SN74LS07NSR
(Q) 2000 (D) 0336
(31T) LOT: 3959047MLA
(4W) TKY (1T) 7523483SI2
(P)
(2P) REV: (V) 0033317
(20L) CS0: SHE (21L) CCO: USA
(22L) AS0: MLA (23L) ACC: MYS

Product Affected:

LM536003QDSXRQ1	LM53600MQDSXRQ1	LM53601AQWDSXRQ1
LM536003QDSXTQ1	LM53600MQDSXTQ1	LM53601AQWDSXTQ1

LM536005QDSXRQ1	LM53600NQDSXRQ1	LM53601LQDSXRQ1	
LM536005QDSXTQ1	LM53600NQDSXTQ1	LM53601LQDSXTQ1	
LM53600AQDSXRQ1	LM536013QDSXRQ1	LM53601LQWDSXRQ1	
LM53600AQDSXTQ1	LM536013QDSXTQ1	LM53601LQWDSXTQ1	
LM53600LQDSXRQ1	LM536015QDSXRQ1	LM53601MQDSXRQ1	
LM53600LQDSXTQ1	LM536015QDSXTQ1	LM53601MQDSXTQ1	
LM53600LQWDSXRQ1	LM53601AQDSXRQ1	LM53601NQDSXRQ1	
LM53600LQWDSXTQ1	LM53601AQDSXTQ1	LM53601NQDSXTQ1	

**Automotive Process change Qualification Summary
(As per AEC-Q100 and JEDEC Guidelines)**

Approved 10-Dec-2019

Product Attributes

Attributes	Qual Device: <u>LM5360xxQDSXTQ1</u>	QBS Process Reference: <u>S0704038C0PLPR</u>
Automotive Grade Level	Grade 1	Grade 1
Operating Temp Range	-40 to +125 C	-40 to +125 C
Product Function	Power Management	Power Management
Die Attributes	-	-
Wafer Fab Supplier	RFAB	RFAB
Wafer Diameter (mm)	300	300
Wafer Process Technology	Power BiCMOS	Power BiCMOS
Wafer Process ID	LBC8	LBC8
Die Size (L,W) (mm)	1.7 X 2.3	8.38 X 8.11

- QBS: Qual By Similarity

- Qual Device LM5360xxQDSXQ1 family is qualified at LEVEL2-260C

Qualification Results

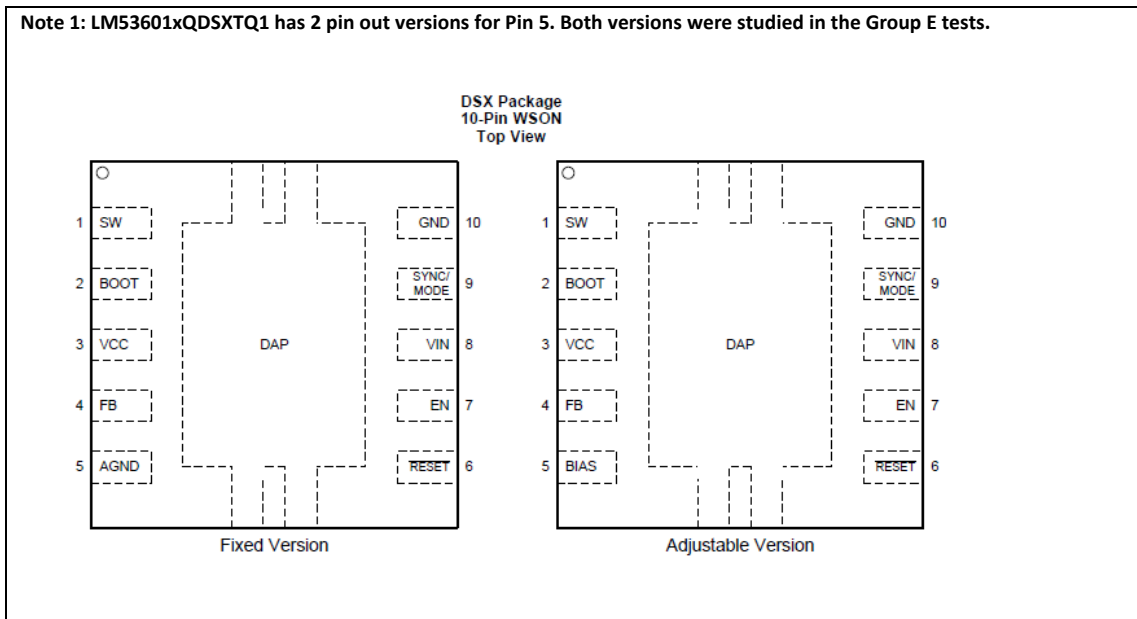
Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: <u>LM53601xxLQDSXTQ1</u>	QBS wafer fab Process Reference: <u>S0704038C0PLPR</u>
Test Group A – Accelerated Environment Stress Tests								
PC	A1	JEDEC J-STD-020 JESD22-A113	3	All units for A2 to A4	Automotive Preconditioning Level 2	ATE	3/693/0	-
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 hours	3/231/0	-
uHAST	A3	JEDEC JESD22-A102	3	77	130C/85%RH	96 hours	3/321/0	-
TC	A4	JEDEC JESD22-A104 and Appendix	3	77	Temperature Cycle, -65/150C	500 cycles	3/77/0	-

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: <u>LM53601xvLODSXT01</u>	QBS wafer fab Process Reference: <u>S0704038C0PLPR</u>
		3						
TC	A4	MIL-STD883 Method 2011	1	5 units	Temperature Cycle, -65/150C	Post 500 cycles	5 units/ 30 wires pass.	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 150C	1000 hours	1/45/0	-
Test Group B – Accelerated Lifetime Simulation Tests								
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 150C	408 hours	3/231/0	-
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 125C	48 Hours	-	3/2400/0
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life 150C	1000 hours	N/A	-
Test Group C – Package Assembly Integrity Tests								
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear (Cpk>1.67)	-	1/30/0	-
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull (Cpk>1.67)	-	1/30/0	-
SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability >95% Lead Coverage	-	1/15/0	-
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions (Cpk>1.67)	-	3/30/0	-
Test Group D – Die Fabrication Reliability Tests								
EM	D1	JESD61	-	-	Electro migration	-	Completed Per Process Technology Requirements	-
TDDDB	D2	JESD35	-	-	Time Dependent 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							See note 1	
HBM	E2	AEC Q100-002	1	3	ESD - HBM - Q100	250V, 500V,	1/3/0 Fixed version 1/3/0 Adjustable	-

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: <u>LM53601xvLODSXT01</u>	QBS wafer fab Process Reference: <u>S0704038C0PLPR</u>
						1000V, 2000V, 2500V	Version	
CDM	E3	AEC Q100-011	1	3	ESD - CDM - Q100	250V, 500V, 750V	1/3/0 Fixed version 1/3/0 Adjustable Version	-
LU	E4	AEC Q100-004	1	6	Latch-up	125C	1/6/0 Fixed version 1/6/0 Adjustable Version	-
ED	E5	AEC Q100-009	3	30	Auto Electrical Distributions	Cpk>1.67 Room, hot, and cold test	3/90/0 Fixed and Adjustable versions	

Note 1: LM53601xQDSXTQ1 has 2 pin out versions for Pin 5. Both versions were studied in the Group E tests.



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

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

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