



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20180920003.1

**Transfer of select BiFET devices from GFAB to FFAB Wafer Fab site
Change Notification / Sample Request**

Date: September 25, 2018

To: TOKYO ELECTRON DEVICE (DSTR) PCN

Dear Customer:

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

We request you acknowledge 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. If you require samples or additional data to support your evaluation, please request within 30 days.

The changes discussed within this PCN will not take effect any earlier than **90** days from the date of this notification, unless customer agreement has been reached on an earlier implementation of the change. This notification period is per TI's standard process.

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).

PCN Team
SC Business Services

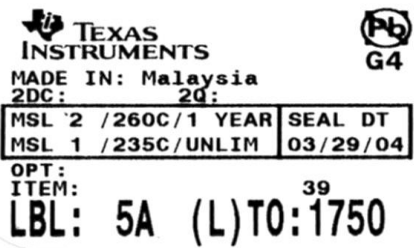
20180920003.1
Attachment: 1

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
LF347MX/NOPB	null
LF347N/NOPB	null
LF353M/NOPB	null
LF356M/NOPB	null
LF356N/NOPB	null
LF398AN/NOPB	null
LF398M/NOPB	null
LF398MX/NOPB	null
LF412ACN/NOPB	null
LF412CN/NOPB	null
LF444ACN/NOPB	null
LM334MX/NOPB	null
LM334Z/NOPB	null
LF398N/NOPB	null
LF353MX/NOPB	null
LF444CMX/NOPB	null
LF347M/NOPB	null

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

PCN Number:	20180920003.1		PCN Date:	Sep 25, 2018																			
Title:	Transfer of select BiFET devices from GFAB to FFAB Wafer Fab site																						
Customer Contact:	PCN Manager		Dept:	Quality Services																			
Proposed 1st Ship Date:	Dec 25, 2018		Estimated Sample Availability:	Date provided at sample request.																			
Change Type:																							
☐ Assembly Site	☐ Assembly Process	☐ Assembly Materials																					
☐ Design	☐ Electrical Specification	☐ Mechanical Specification																					
☐ Test Site	☐ Packing/Shipping/Labeling	☐ Test Process																					
☐ Wafer Bump Site	☐ Wafer Bump Material	☐ Wafer Bump Process																					
☒ Wafer Fab Site	☒ Wafer Fab Materials	☐ Wafer Fab Process																					
	☐ Part number change																						
PCN Details																							
Description of Change:																							
This change notification is to announce the transfer of select BiFET devices from GFAB to the FFAB (FR-BIP-1) Wafer Fab site for the selected devices listed in the "Product Affected" section.																							
<table border="1" style="width: 100%;"> <thead> <tr> <th colspan="3">Current Fab Site</th> <th colspan="3">New Fab Site</th> </tr> <tr> <th>Current Fab Site</th> <th>Process</th> <th>Wafer Diameter</th> <th>New Fab Site</th> <th>Process</th> <th>Wafer Diameter</th> </tr> </thead> <tbody> <tr> <td>GFAB6</td> <td>BiFET</td> <td>150 mm</td> <td>FFAB</td> <td>BiFET</td> <td>200 mm</td> </tr> </tbody> </table>						Current Fab Site			New Fab Site			Current Fab Site	Process	Wafer Diameter	New Fab Site	Process	Wafer Diameter	GFAB6	BiFET	150 mm	FFAB	BiFET	200 mm
Current Fab Site			New Fab Site																				
Current Fab Site	Process	Wafer Diameter	New Fab Site	Process	Wafer Diameter																		
GFAB6	BiFET	150 mm	FFAB	BiFET	200 mm																		
Qual details are provided in the Qual Data Section.																							
Reason for Change:																							
Greenock, Scotland (GFAB) Wafer Fab site closure.																							
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):																							
None																							
Changes to product identification resulting from this PCN:																							
Current:																							
Current Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City																				
GFAB6	GF6	GBR	Greenock																				
New Fab Site:																							
New Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City																				
FR-BIP-1	TID	DEU	Freising																				
Sample product shipping label (not actual product label)																							
  (1P) SN74LS07NSR (Q) 2000 (D) 0336 (31T) LOT: 3959047MLA (4W) TKY (1T) 7523483S12 (P) (2P) REV: (V) 0033317 (20L) CS0: SHE (21L) CCO: USA (22L) AS0: MLA (23L) ACO: MYS																							
Product Affected:																							
LF147J	LF298M	LF444ACN/NOPB	LM334Z/NOPB																				
LF156H	LF298M/NOPB	LF444CM/NOPB	TL082CM/NOPB																				
LF156H/NOPB	LF298MX	LF444CN/NOPB	TL082CP/NOPB																				
LF198AH/NOPB	LF298MX/NOPB	LF398AN/NOPB	LF444TDA1																				
LF198H	LF347 MWC	LF398H	LF444TDA2																				

LF198H/NOPB	LF347BN/NOPB	LF398H/NOPB	LM134 MDC
LF256H	LF347M	LF398M	LM134H
LF256H/NOPB	LF347M/NOPB	LF398M/NOPB	LM134H/NOPB
LF347N/NOPB	LF347MX	LF398MX/NOPB	LM234Z-3/NOPB
LF353MX/NOPB	LF347MX/NOPB	LF398N/NOPB	LM234Z-6/NOPB
LF356 MWC	LF353M	LF412 MWC	LM334 MWC
LF356H	LF353M/NOPB	LF412ACN/NOPB	LM334M
LF356H/NOPB	LF353N/NOPB	LF412CN/NOPB	LM334M/NOPB
LF356M/NOPB	LF356M	LF412MH/NOPB	LM334MX/NOPB
LF356N/NOPB	LF356MX/NOPB	LF442-MWA	LM334SM/NOPB
LF398 MDC	LF412MH	LF444CM	LM334SMX/NOPB
LF298H	LF442AMH	LF444CMX/NOPB	LM334Z/LFT1
LF298H/NOPB	LF442AMH/NOPB	LM334SMX	TL082CMX/NOPB

Qualification Report

FFAB BIFET Technology Qualification Approve Date 19-Sept-2018

Product Attributes

Attributes	Qual Device: LF412ACN/NOPB	QBS Process Reference: <u>LM2576HVT-5.0/NOPB</u>	QBS Package Reference: <u>LP2951ACM</u>
Assembly Site	TIEM-AT	TIEM-AT	TIEM-AT
Package Family	PDIP	TO-220	SOIC
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	FFAB	FFAB	FFAB
Wafer Process	BIFET	SLM	SLM

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: <u>LF412ACN/NOPB</u>	QBS Process Reference: <u>LM2576HVT-5.0/NOPB</u>	QBS Package Reference: <u>LP2951ACM</u>
AC	Autoclave, 121C	96 Hours	-	3/231/0	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	3/90/0	3/90/0	-
ELFR	Early Life Failure Rate, 125C	48 Hours	1/800/0	3/2400/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	-
THBT	Temp Humidity Bias 85C/85%RH	1000 Hours	-	-	3/231/0
HBM	ESD - HBM	2500 V	3/9/0	3/9/0	-
CDM	ESD - CDM	1500 V	3/9/0	-	-
HTOL	Life Test, 125C	1000 Hours	3/231/0	3/231/0	-
HTSL	High Temp. Storage Bake, 150C	1000 Hours	1/77/0	3/231/0	3/231/0
LU	Latch-up	(per JESD78)	3/18/0	3/18/0	-
TC	Temperature Cycle, - 65/150C	500 Cycles	-	3/231/0	3/231/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	Pass	-	-
MQ	Manufacturability (Wafer Fab)	(per mfg. Site specification)	Pass	-	-

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle and HTSL as applicable.
- The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours
- The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours

- The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles

Quality and Environmental data is available at TI's external Web site: <http://www.ti.com/>

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 you can contact 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