

PCN Number:	20140505001	PCN Date:	05/16/2014
Title:	Qualification of Additional Fab (DMOS6), Assembly/Test (TAI) and Cu Wire Option for select MSP430FR57xx devices in the TSSOP Package		
Customer Contact:	PCN Manager	Phone:	+1(214)480-6037
		Dept:	Quality Services
*Proposed 1st Ship Date:	08/16/2014	Estimated Sample Availability:	Date Provided at Sample request
Change Type:			
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change
<input type="checkbox"/>	Mechanical Specification	<input checked="" type="checkbox"/>	Test Site
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process
		<input type="checkbox"/>	Wafer Bump Site
		<input type="checkbox"/>	Wafer Bump Material
		<input type="checkbox"/>	Wafer Bump Process
		<input checked="" type="checkbox"/>	Wafer Fab Site
		<input type="checkbox"/>	Wafer Fab Materials
		<input type="checkbox"/>	Wafer Fab Process
PCN Details			
Description of Change:			
<p>This notification is to announce the qualification of additional fab (TI-DMOS6), assembly/test (TI-Taiwan) and Cu wire option for select MSP430FR57xx devices in the TSSOP Package.</p>			
Wafer Fab Differences			
Currently Qualified Sites, process, wafer dia.		Additional Site, process, wafer dia.	
DP1DM5, E035 Process, 200mm		DMOS6, E035 Process, 300mm	
Assembly Site Material Differences for DA Package (There are no other BOM changes)			
Material	Current Site/MLA	Additional Site/TAI	
Bond Wire Diameter	0.96 mil	0.8 mil	
Mold Compound	4209002	4211471	
Assembly Site Material Differences for PW Package (There are no other BOM changes)			
Material	Current Site/MLA	Additional Site/TAI	
Bond Wire Composition	Au	Cu	
Bond Wire Diameter	0.96 mil	0.8 mil	
Mold Compound	4206193	4211471	
Device Grouping (shown in Product Affected Section)			
Group 1 Devices:			
<ul style="list-style-type: none"> 38 pin DA package/Only adding Fab site 			
Group 2 Devices:			
<ul style="list-style-type: none"> 28 pin PW package/Adding Fab site, A/T site, and includes Cu wire change 			
<p>Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.</p>			
Reason for Change:			
<p>Add wafer fab capacity and continuity of supply.</p> <ol style="list-style-type: none"> To align with world technology trends and use wiring with enhanced mechanical and electrical properties Maximize flexibility within our Assembly/Test production sites. Cu is easier to obtain and stock 			

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

None

Changes to product identification resulting from this PCN:

There will be no change to topside symbol.

Shipment Labels:

Current Fab Site

Chip Site	Chip site code (20L)	Chip country code (21L)
DP1DM5	DM5	USA

Additional

Chip Site	Chip site code (20L)	Chip country code (21L)
DMOS6	DM6	USA

Note: The die revision code will change from "H" (DP1DM5) to "J" (DMOS6). This is only for tracking purposes. There is no change to the die.

Current Assembly Site

Assembly Site	Assembly site Origin (22L)	Assembly country Origin (23L)
TI-Malaysia	MLA	MYS

Additional

Assembly Site	Assembly site Origin (22L)	Assembly country Origin (23L)
Taiwan	TAI	TWN

Device Marking for TI Malaysia and TI Taiwan are the same.

Assembly site code for TI Malaysia = K

Assembly site code for TI Taiwan = T

Sample product shipping label (not actual product label)

Product Affected:

Group 1: 38 pin DA package devices/Only adding Fab site			
MSP430FR5721IDA	MSP430FR5725IDAR	MSP430FR5731IDA	MSP430FR5735IDAR
MSP430FR5721IDAR	MSP430FR5727IDA	MSP430FR5731IDAR	MSP430FR5737IDA
MSP430FR5723IDA	MSP430FR5727IDAR	MSP430FR5733IDA	MSP430FR5737IDAR
MSP430FR5723IDAR	MSP430FR5729IDA	MSP430FR5733IDAR	MSP430FR5739IDA
MSP430FR5725IDA	MSP430FR5729IDAR	MSP430FR5735IDA	MSP430FR5739IDAR
Group 2: 28 pin PW package devices/Adding Fab site, A/T site, and includes Cu wire change			
MSP430FR5720IPW	MSP430FR5724IPWR	MSP430FR5730IPW	MSP430FR5734IPWR
MSP430FR5720IPWR	MSP430FR5726IPW	MSP430FR5730IPWR	MSP430FR5736IPW
MSP430FR5722IPW	MSP430FR5726IPWR	MSP430FR5732IPW	MSP430FR5736IPWR
MSP430FR5722IPWR	MSP430FR5728IPW	MSP430FR5732IPWR	MSP430FR5738IPW
MSP430FR5724IPW	MSP430FR5728IPWR	MSP430FR5734IPW	MSP430FR5738IPWR

**Qualification Report
MSP430FR5739IDA/PW transfer to DM6 / TAI
Approved 04/23/2014**

Product Attributes

Attributes	Qual Device: MSP430FR5739IRHA E035.1 Process Qual	Qual Device: MSP430FR5739IDA Package Qual	Qual Device: MSP430FR5738IPW Package Qual	Supporting QBS: MSP430L092SPWR Package Qual
Assembly Site	TI-Clark	TI-TAIWAN	TI-TAIWAN	TI-TAIWAN
Package Family	QFN	TSSOP	TSSOP	TSSOP
Bond Wire Diameter (mils)	0.8	0.8	0.8	0.8
Mold Compound	4208625	4211471	4211471	4206193
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	TI-DMOS6	TI-DMOS6	TI-DMOS6	TI-DMOS5
Wafer Fab Process	E035.1	E035.1	E035.1	C035

- QBS: Qual By Similarity

- Qual Device for package MSP430FR5739IDA is qualified at LEVEL2-260CG

Qualification Results

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

Test Name	Condition/ Duration	Qual Device: MSP430FR5739IRHA Process Qual	Qual Device: MSP430FR5739IDA Package Qual	Qual Device: MSP430FR5738IPW Package Qual	Supporting QBS: MSP430L092SPWR Package Qual
Biased HAST	96 hrs/85%RH, 130C	-	-		3/231/0
Autoclave	96 hrs/121C / 100%	-	3/231/0		3/231/0
Temperature Cycle	500 cycles -65C/+150C	-	3/231/0		3/231/0
High Temp Storage Bake	1000hrs/150C	-	3/231/0		3/231/0
** Life Test	125C (1000 hrs)	3/231/0	-		-
** Endurance: FRAM extrinsic cycle	25C, 1e ⁷ cycles, full size	3/231/0	-		-
** FRAM data retention and imprint	125C/85C (1000 hrs)***	3/231/0	-		-
ESD CDM	500V	3/9/0	3/9/0	3/9/0	-
ESD HBM	2000V	3/9/0	3/9/0		-
Latch-Up	100mA/85C, 1.5xVcc	3/18/0	-		-

- Preconditioning was performed for Autoclave, Biased HAST, Temperature Cycle, High Temp Storage Bake. MSL2 for MSP430FR5739IDA and MSL1 for MSP430L092SPWR are applied.

** Preconditioning: MSL 3 @ 260

***: SS data retention at 125C, OS imprint at 85C 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 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