



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

**PCN# 20120530003
Shannon PG 2.0
Information Only**

Date: 6/5/2012
To: Newark PCN

Dear Customer:

This is an information-only announcement of a change to a device that is currently offered by Texas Instruments.

The changes discussed within this PCN are for your information only. Please see the attachment details for the planned implementation date.

This notification period is per TI's standard process. Any negotiated alternative change requirements will be provided via the customer's defined process. Customers with previously negotiated, special requirements will be handled separately. Any inquiries should be directed to your local Field Sales Representative.

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

20120530003
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
TMX320C6678CYP	null

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

PCN Number:	20120530003		PCN Date:	06/05/2012	
Title:	Shannon Revision 2.0 Release				
Customer Contact:	PCN_ww_admin_team@list.ti.com	Phone:	+1(214)480-6037	Dept:	Quality Services
Proposed 1st Ship Date:	06/05/2012	Estimated Sample Availability:	06/05/2012		
Change Type:	Device revision change from PG 1.0 to PG 2.0				
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Assembly Materials
<input checked="" type="checkbox"/>	Design	<input type="checkbox"/>	Electrical Specification	<input type="checkbox"/>	Mechanical Specification
<input 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 type="checkbox"/>	Wafer Fab Site	<input type="checkbox"/>	Wafer Fab Materials	<input type="checkbox"/>	Wafer Fab Process
PCN Details					
Description of Change:					
<p>Shannon device change from PG 1.0 to PG 2.0</p> <p>Customers using Revision 1.0 products are encouraged to migrate to Revision 2.0 concurrent with this device revision.</p>					
Reason for Change:					
Address errata on PG 1.0.					
Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):					
None					
Changes to product identification resulting from this PCN:					
<p>Die rev symbol will change from 10 to 20 in the device top-side marking. The orderable part number will change to "A".</p>					
Product Affected:					
<p>PG 1.0 devices</p> <p>TMS320C6678CYP TMS320C6678CYP25 TMS320C6678CYPA TMS320C6678XCYP TMS320TCI6608CYP TMS320TCI6608CYPA TMX320C6672CYP TMX320C6672CYP5 TMX320C6674CYP TMX320C6678CYP TMX320C6678CYP25 TMX320C6678CYPA TMX320TCI6608CYP</p>					

PG 2.0 devices

TMS320C6671ACYP
TMS320C6671ACYPA
TMS320C6672ACYP
TMS320C6672ACYPA
TMS320C6674ACYPA
TMS320C6678ACYP
TMS320C6678ACYP25
TMS320C6678ACYPA
TMS320C6678AGYPA
TMS320C6678AXCYP
TMS320TCI6608ACYP
TMS320TCI6608ACYPA
TMS320TCI6608AXCYP
TMX320C6672ACYP
TMX320C6672ACYP25
TMX320C6674ACYP
TMX320C6678ACYP
TMX320TCI6608ACYP
TMX32C6678ACYP25
TMX32TCI6602ACYP25
TMX32TCI6604ACYP25

TMS320C6678x Rev2.0, Multicore DSP CYP Reliability

Product Qualification Report

Release Date:

04.23.12

Attribute Description	
Title	TMS320C6678x Rev 2.0, Product Qualification Report
Status	Released
Package Attributes:	
A/T Site	Amkor-K4
Device Nickname	Shannon
Mold Compound	N/A
Package Designator	841 CYP
Package Type	Organic Substrate Flip-Chip BGA
MSL	MSL4 at 245°C
Package Family	FCBGA
Thermally Enhanced Package	Yes
Type of Thermal Enhancement	Heat Spreader
Underfill	NAU-27
Solder Ball Composition	SAC305 (Sn/Ag3%/Cu0.5%)
Substrate Composition	Organic substrate
Substrate Finish	Pb-free SOP
Bump Composition	Pb-free SOP
Fab Process	C014.P (40 nm)
Wafer Fab Site	TSMC-12
Approval Information:	
Release Date	04.23.12
QSS Number	009-401
Green/Pb-Free Status	Green (RoHS compliant)

Product Data Sheet Link:

<http://www.ti.com/product/tms320c6678>

Qualification Vehicles

1. The TMS320C6678x is one of 3 Keystone family SOCs which share the same architecture, silicon features, package, package drawing, and pin count.
 - a. There are slight differences among them in die size and silicon functionality.
 - b. All 3 die have same package footprint, same # of package pins, and same package drawing.
2. Qualification data utilized all 3 devices for this report (TMS320C6678x).
3. Relative to Shannon Rev1.0, Shannon Rev2.0 includes minor logic updates and bug fixes.

Product Information	TMS320C6678x Qualification Device	TMS320TCI6618x Keystone #1	TMS320TCI6616x Keystone #2
Silicon Details			
Die Revision	1.0/2.0	1.0	1.0
Technology	40 nm	40 nm	40 nm
Fab	TSMC-12	TSMC-12	TSMC-12
# Metal Levels	9LM-Cu	9LM-Cu	9LM-Cu
Fab Buffer Layer	Polyimide-Amkor	Polyimide-Amkor	Polyimide-Amkor
Substrate Details			
FC Pad Finish	Pb-free SOP	Pb-free SOP	Pb-free SOP
BGA Pad Finish	Pb-free SOP	Pb-free SOP	Pb-free SOP
Package Details			
Assembly Site	Amkor-K4	Amkor-K4	Amkor-K4
BUMP Site	Amkor-K4	Amkor-K4	Amkor-K4
Package Type	Organic - FCBGA	Organic - FCBGA	Organic - FCBGA
Package Type / Designator	CYP	CYP	CYP
Pkg Size (mm x mm)	24.0 x 24.0	24.0 x 24.0	24.0 x 24.0
# Pkg Pins	841	841	841
Bump Metal	SnAg	SnAg	SnAg
BGA Metal	SAC305	SAC305	SAC305
Underfill	NAU-27	NAU-27	NAU-27
Bump pitch (mm)	0.170	0.170	0.170
Ball Pitch (mm)	0.80	0.80	0.80
MSL	4-245C	4-245C	4-245C

Qualification Results

Qual Test	Conditions	Device	Sample Size	Results	Comment
Package Testing					
MSL-4 Precon.	Level 4 at 245°C	TMS320C6678x-Rev1	3 Lots	188 / 0	Pass
MSL-4 Precon.	Level 4 at 245°C	TMS320TCI6616	3 Lots	1015 / 0	Pass
Temp Cycle ¹	-40°C / 125°C	TMS320TCI6616	3 Lots	231 / 0	Pass
Temp Cycle ¹	-55°C / 125°C	TMS320C6678x-Rev1	3 Lots	78 / 0	Pass
THB ¹	85°C / 85% RH / Vdd max	TMS320TCI6616	3 Lots	77 / 0	Pass
Unbiased HAST ¹	130°C, 85% RH	TMS320C6678x-Rev1	3 Lots	78 / 0	Pass
Unbiased HAST ¹	110°C, 85% RH	TMS320TCI6616	3 Lots	222 / 0	Pass
Storage Bake ¹	150°C	TMS320TCI6616	3 Lots	234 / 0	Pass
Silicon Testing					
ESD-HBM	±1000V	TMS320C6678x-Rev2	5 Units	5 / 0	Pass
ESD-CDM ²	+250V, All Pins but SerDes TX	TMS320C6678x-Rev2	5 Units	5 / 0	Pass
	-250V, All Pins but SerDes TX	TMS320C6678x-Rev2	5 Units	5 / 0	Pass
	-150V, SerDes TX Pins	TMS320C6678x-Rev2	5 Units	5 / 0	Pass
Latchup	±100 mA @90°C/1.5Vmax; ±200 mA @25°C/1.5Vmax	TMS320C6678x-Rev2	6 units	6 / 0	Pass
HTOL	HTOL - 125°C Tj, 1000 hrs	TMS320TCI6616	3 Lots	360 / 0	Pass
HTOL	HTOL - 125°C Tj, 1000 hrs	TMS320C6678x-Rev1	3 Lots	129 / 0	Pass
HTOL	HTOL - 125°C Tj, 600 hrs	TMS320C6678x-Rev2	3 Lots	110 / 0	Pass
BLR Testing					
Temp Cycle	0C / 100C (Virgin Units)	TMS320TCI6618x- Daisy Chain	32	44 / 0 thru	Pass
Temp Cycle	0C / 100C (Rework Units)		12	3500 Cyc	Pass

1. Includes IPC/JEDEC MSL4 at 245°C peak reflow moisture precondition
2. Due to the sensitive nature of the high-speed SerDes transmit (TX) pins, these 24 pins pass CDM to -150V on the negative polarity. See the silicon errata for additional details: <http://www.ti.com/product/tms320c6678>

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