



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PDN# 20230320003.3A

**Discontinuance of select MicroStar BGA Jr. devices
Product Discontinuance Notification**

Date: August 08, 2023
To: Digi-Key PCN

Dear Customer:

Revision A is to announce the extension of the Last Date to Order. Details are provided in Description of Withdrawal/Discontinuance section on page 3 of this document.

The recipient has been identified for notification of changes for one or more of the products affected by the change detailed in the notice. Customers are notified based on the past twenty-four (24) months of the customer's purchase history or the recipient is listed as being part of GIDEP (Government-Industry Data Exchange Program).

TI would appreciate it if you would notify us of any future demand and estimated quantities needed for the affected products as soon as possible.

In an attempt to satisfy continuing requirements, TI is offering a non-cancelable, non-refundable last time buy for the product. Related dates are included in the notification. We will contact you as soon as we have completed a review of all customer responses and determined the appropriate course of action required to satisfy the need for this/these products.

Any inquiries should be directed to your local Field Sales Representative.

If additional supply is required beyond the dates defined in this letter, please contact your local Field Sales Representative to determine if the parts may be available from a TI-authorized distributor for discontinued products. There is no guarantee of continued supply for these products.

For questions regarding this notice, contact your local Field Sales Representative or the Change Management team.

Sincerely,

Change Management Team
SC Business Services

20230320003.3A
Attachments1

Products Affected:

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

DEVICE	CUSTOMER PART NUMBER
TM4C123BH6ZRBI	null
TM4C123BH6ZRBI7R	null
TM4C123GH6ZRBT7	null
TM4E1231H6ZRBI	null
TM4E1231H6ZRBI7R	null
TM4E123GH6ZRBI7R	null

Details of this Product Discontinuance follow on the next page(s).

PDN Number:	20230320003.3A		PDN Date:	August 08, 2023																								
Title:	Discontinuance of select MicroStar BGA Jr. devices																											
Customer Contact:	Change Management team	Dept:	Quality Services																									
Last date to order:	Sept 20, 2023 Nov 20, 2023	Last date to ship:	March 20, 2024																									
Change Type:	Product Discontinuance - End Of Life																											
Product Discontinuance Notification Details																												
Description of Discontinuance:																												
Revision A is to announce the extension of the Last Date to Order to Nov 20, 2023 as shown above. This change is due to the delay in the release of replacement devices. There is no change to the original Last date to ship as noted above. Texas Instruments, Incorporated (TI) is announcing the discontinuance of select MicroStar BGA Jr. package devices. A non-cancelable, non-refundable last time buy is being offered per the date shown above. Part numbers are shown in the Product Affected section below. Recommended replacements are being offered as shown in the Product Affected Section. Availability of replacement device samples (in nFBGA packages) is estimated to be 30 days after this notification. These devices are estimated to be released to production in August 2023. For questions regarding the sample/release status of a particular device, please contact tm4c_zrb@list.ti.com. The devices in the MicroStar BGA package were redesigned using a laminate BGA package (nFBGA). nFBGA provides the same X and Y dimensions as MicroStar BGA, and provides pin-to-pin and footprint compatibility. However the nFBGA PCB land pattern and stencil recommendations have been updated to achieve better soldering results after extensive testing and evaluation. For more details, please refer to this nFBGA application note. BOM for new nFBGA Package: <table border="1"> <tr> <td></td> <td>Assembly Site nFBGA</td> </tr> <tr> <td>Assembly Site</td> <td>TI Philippines (no change)</td> </tr> <tr> <td>Mount Compound</td> <td>film/epoxy</td> </tr> <tr> <td>Mold compound</td> <td>4212500 / 4205283</td> </tr> <tr> <td>Wire Type</td> <td>Cu</td> </tr> <tr> <td>Substrate</td> <td>Laminate</td> </tr> </table> NOTE: There are no samples offered for withdrawn/obsolete products. For samples of any replacement products, please contact your local sales representative. Reason for Withdrawal/Discontinuance: Due to an equipment End-Of-Life notice from our substrate supplier, we are phasing out certain MicroStar BGA Jr package devices and offering a last time buy. Product Affected: <table border="1"> <thead> <tr> <th>DEVICES BEING DISCONTINUED</th> <th>RECOMMENDED REPLACEMENT PRODUCTS</th> <th>Pin to Pin Match (Yes/No)</th> </tr> </thead> <tbody> <tr> <td>TM4C123BH6ZRBI</td> <td>TM4C123BH6NMRI</td> <td>Yes</td> </tr> <tr> <td>TM4C123BH6ZRBI7</td> <td>TM4C123BH6NMRI7</td> <td>Yes</td> </tr> <tr> <td>TM4C123BH6ZRBI7R</td> <td>TM4C123BH6NMRI7R</td> <td>Yes</td> </tr> </tbody> </table>						Assembly Site nFBGA	Assembly Site	TI Philippines (no change)	Mount Compound	film/epoxy	Mold compound	4212500 / 4205283	Wire Type	Cu	Substrate	Laminate	DEVICES BEING DISCONTINUED	RECOMMENDED REPLACEMENT PRODUCTS	Pin to Pin Match (Yes/No)	TM4C123BH6ZRBI	TM4C123BH6NMRI	Yes	TM4C123BH6ZRBI7	TM4C123BH6NMRI7	Yes	TM4C123BH6ZRBI7R	TM4C123BH6NMRI7R	Yes
	Assembly Site nFBGA																											
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DEVICES BEING DISCONTINUED	RECOMMENDED REPLACEMENT PRODUCTS	Pin to Pin Match (Yes/No)																										
TM4C123BH6ZRBI	TM4C123BH6NMRI	Yes																										
TM4C123BH6ZRBI7	TM4C123BH6NMRI7	Yes																										
TM4C123BH6ZRBI7R	TM4C123BH6NMRI7R	Yes																										

TM4C123BH6ZRBIR	TM4C123BH6NMRIR	Yes
TM4C123GH6ZRBIR	TM4C123GH6NMRI	Yes
TM4C123GH6ZRBIR7	TM4C123GH6NMRI7	Yes
TM4C123GH6ZRBIR7R	TM4C123GH6NMRI7R	Yes
TM4C123GH6ZRBIR	TM4C123GH6NMRIR	Yes
TM4C123GH6ZRBIR7	TM4C123GH6NMRT	Yes
TM4C123GH6ZRBIR7R	TM4C123GH6NMRT7	Yes
TM4C123GH6ZRBIR7R	TM4C123GH6NMRT7R	Yes
TM4E1231H6ZRBIR	TM4E1231H6NMRI	Yes
TM4E1231H6ZRBIR7R	TM4E1231H6NMRI7R	Yes
TM4E123GH6ZRBIR7	TM4E123GH6NMRI7	Yes
TM4E123GH6ZRBIR7R	TM4E123GH6NMRI7R	Yes
TM4E1G31H6ZRBIR	TM4E1G31H6NMRI	Yes

Qualification Report (nFBGA)

Approve Date 20-Jan-2020

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: OM AP5 912 ZV L	QBS Package Reference: AM351 7ZCN	QBS Package Reference: CODM IO ZW CR	QBS Package Reference: LMK0 4616Z CRR	QBS Package Reference: MSP43 0FG43 91ZCA	QBS Package Reference: MSP43 0FR59 94IZV W	QBS Package Reference: PC D32 15C00 AZBH R, PC D32 15C00 BZBH R	QBS Package Reference: TMP5 70LS3 137BZ W TQ Q1	QBS Package Reference: TMS32 0DM64 46ZW T	QBS Package Reference: TPS65 9038T ZWSR Q1	QBS Package Reference: TS3DD R4000 ZBAR
ACC	Autoclave 121C	96 Hours	-	-	-	-	-	3/231/0	-	-	-	-	-
BLR	Board Level Reliability, Temp Cycle, -40/125C	1000 Cycles	-	1/32/0	1/32/0	-	-	-	-	1/32/0	-	-	-
BLR	Board Level Reliability, Temp Cycle, -40/85C	1000 Cycles	-	-	-	-	-	-	1/32/0	-	-	-	-
CDM	ESD - CDM	250 V	1/3/0	-	-	-	2/6/0	1/3/0	-	-	-	-	-
CDM	ESD - CDM	500 V	1/3/0	-	-	-	-	-	-	1/3/0	1/3/0	1/3/0	-
CDM	ESD - CDM	750 V	-	-	-	-	-	-	-	1/3/0	1/3/0	1/3/0	-
CDM	ESD - CDM	1000 V	-	-	-	-	-	-	-	-	1/3/0	-	1/3/0
CDM	ESD - CDM	1500 V	-	-	-	1/3/0	-	-	6/18/0	-	-	-	-

Type	Test Name / Condition	Duration	Qual Device: <u>OM AP5 912 ZV L</u>	QBS Package Reference: <u>AM351 7ZCN</u>	QBS Package Reference: <u>CODM IO ZW CR</u>	QBS Package Reference: <u>LMK0 4616Z CRR</u>	QBS Package Reference: <u>MSP43 0FG43 9IZCA</u>	QBS Package Reference: <u>MSP43 0FR59 94IZV W</u>	QBS Package Reference: <u>PC D32 15C00 AZBH R, PC D32 15C00 BZBH R</u>	QBS Package Reference: <u>TMP5 70LS3 137BZ WIO Q1</u>	QBS Package Reference: <u>TMS32 0DM64 46ZW T</u>	QBS Package Reference: <u>TPS65 9038T ZWSR Q1</u>	QBS Package Reference: <u>TS3DD R4000 ZBAR</u>
ED	Electrical Characterization, side by side	Per Datasheet Parameters	Pass	-	-	-	-	-	-	-	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters		-	-	Pass	-	-	Pass	Pass	Pass	Pass	Pass
FLAM	Flammability (IEC 695-2-2)	-	-	-	-	-	-	-	3/15/0	-	-	-	3/15/0
FLAM	Flammability (UL 94V-0)	-	-	-	-	-	-	-	3/15/0	-	-	-	3/15/0
FLAM	Flammability (UL-1694)	-	-	-	-	-	-	-	3/15/0	-	-	-	3/15/0
HAST	Biased HAST, 110C/85%RH	264 Hours	-	3/231/0	-	3/231/0	-	3/231/0	3/231/0	-	-	-	1/77/0
HBM	ESD - HBM	1000 V	-	-	-	-	2/6/0	1/3/0	-	-	1/3/0	-	-
HBM	ESD - HBM	2000 V	-	-	-	-	2/6/0	-	6/18/0	1/3/0	1/3/0	1/3/0	-
HBM	ESD - HBM	3000 V	-	-	-	-	-	-	-	-	-	-	1/3/0
HBM	ESD - HBM	4000 V	-	-	-	1/3/0	-	-	-	-	-	-	-
HTOL	Life Test, 90C	2000 Hours	-	-	-	-	-	-	-	-	3/387/0	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	-	-	-	-	6/462/0	3/231/0	-	3/231/0	-
HTOL	Life Test, 115C	1000 Hours	-	-	-	1/77/0	-	-	-	-	-	-	-
HTOL	Life Test, 140C	480 hours	-	-	-	-	-	-	-	-	-	-	1/77/0
HTSL	High Temp Storage Bake 150C	1000 Hours	3/231/0	3/45/0	-	1/77/0	3/231/0	3/231/0	3/231/0	1/45/0	3/231/0	-	-
HTSL	High Temp Storage Bake 150C	500 Hours	-	-	-	-	-	-	-	-	-	2/90/0	-
HTSL	High Temp Storage Bake 170C	420 hours	-	-	-	-	-	-	-	-	-	-	3/231/0
MQ	Manufacturability (Assembly)	(per mfg. Site specific)	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Type	Test Name / Condition	Duration	Qual Device: <u>OMAP5912ZVL</u>	QBS Package Reference: <u>AM3517ZCN</u>	QBS Package Reference: <u>CODMIOZWCR</u>	QBS Package Reference: <u>LMK04616ZCRR</u>	QBS Package Reference: <u>MSP430FG439IZCA</u>	QBS Package Reference: <u>MSP430FR5994IZVW</u>	QBS Package Reference: <u>PCD3215C00AZBHR, PCD3215C00BZBHR</u>	QBS Package Reference: <u>TMP570LS3137BZWTQO1</u>	QBS Package Reference: <u>TMS320DM6446ZWTT</u>	QBS Package Reference: <u>TPS659038TZWSRQ1</u>	QBS Package Reference: <u>TS3DDR4000ZBAR</u>
		ation)											
MSL	Moisture Sensitivity, JEDEC	Level 3-260C	3/36/0	-	-	-	3/36/0	3/36/0	3/36/0	3/36/0	3/36/0	3/36/0	3/36/0
PD	Physical Dimensions	(per mechanical drawing)	3/15/0	-	-	-	1/5/0	-	3/15/0	-	-	3/30/0	3/15/0
SS	Ball Shear	Balls	3/90/0	3/150/0	-	3/240/0	3/60/0	3/60/0	3/540/0	1/50/0	-	3/150/0	3/60/0
SD	Solderability	PB-Free Solder	3/66/0	-	-	-	1/12/0	-	3/66/0	-	-	-	3/66/0
TC	Temperature Cycle, -55/125C	1000 Cycles	-	3/231/0	-	-	-	-	-	3/231/0	3/231/0	3/231/0	-
TC	Temperature Cycle, -55/125C	700 Cycles	3/231/0	-	-	3/231/0	3/231/0	3/231/0	3/231/0	-	-		3/231/0
THB	Biased Temperature and Humidity, 85C/85% RH	1000 Hours	-	-	-	-	-	-	-	3/230/0	3/231/0	3/231/0	-
UHA	Unbiased HAST 110C/85%RH	264 Hours	3/231/0	-	-	3/231/0	3/231/0	-	3/231/0	3/231/0	3/231/0	3/231/0	-
UHA	Unbiased HAST 130C/85%RH	96 Hours	-	3/231/0	-	-	-	-	-	-	-	-	3/231/0
WBP	Wire Pull	Wires	1/76/0	3/228/0	-	3/228/0	3/228/0	3/228/0	3/228/0	3/300/0	3/228/0	3/300/0	3/228/0
WBS	Ball Bond Shear	Wires	1/76/0	3/228/0	-	3/228/0	3/228/0	3/228/0	3/228/0	3/300/0	3/228/0	3/300/0	3/228/0

- QBS: Qual By Similarity*

- Qual Device OMAP5912ZVL is qualified at LEVEL3-260CG

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, 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 JEDEC47 : -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 Change Management team or your local Field Sales Representative.

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