

PCN Number:	20200109001.1	PCN Date:	Jan 13, 2020
Title:	BQ9002 ROM Fix and Die Change		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	April 13, 2020	Estimated Sample Availability:	Date provided at sample request.
Change Type:			
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process
<input checked="" type="checkbox"/>	Design	<input type="checkbox"/>	Assembly Materials
<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Electrical Specification
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Mechanical Specification
<input type="checkbox"/>	Wafer Fab Site	<input type="checkbox"/>	Packing/Shipping/Labeling
<input type="checkbox"/>		<input type="checkbox"/>	Test Process
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Material
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Process
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Materials
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Process
<input type="checkbox"/>		<input type="checkbox"/>	Part number change

Notification Details

Description of Change:

This notification is to inform of minor ROM changes to the BQ9002 family of devices. Affected devices are listed in the Product Affected section of this document. The changes and updates are as follows:

- 1) Clear task pointer, when not cleared can lead to unpredictable operation.
- 2) Clear smb command buffer that is used when doing smb style commands over SDQ, HDQ.
- 3) Clear smb block size variable that is used when doing smb style commands over SDQ, HDQ.
- 4) Add HW watchdog to serial communication bus.
- 5) The DEVICE ID in the ROM code will change from die Rev A2 (0x9101) and die Rev A3 (0x9102).

Reason for Change:

Improved device functionality

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

None.

Changes to product identification resulting from this PCN:

Die Rev designator for the affected devices will change as shown in the table and sample label below:

Current	New
Die Rev [2P] A2	Die Rev [2P] A3

Sample product shipping label (not actual product label)

 MADE IN: Malaysia 2DC: 2d: MSL 2 / 260C / 1 YEAR SEAL DT MSL 1 / 235C / UNLIM 03/29/04 OPT: ITEM: 39 LBL: 5A (L) TO: 1750	 	(1P) SN74LS07NSR (Q) 2000 (D) 0336 (31T) LOT: 3959047MLA (4W) TKY (1T) 7523483SI2 (P) (2P) REV: (V) 0033317 (20L) CSO: SHE (21L) CCO: USA (22L) ASO: MLA (23L) ACO: MYS
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Product Affected:

BQ78Z100DRZR	BQ9002DRZR	SN28Z719DRZR	SN9002DRZR
BQ78Z100DRZT	BQ9002DRZT	SN28Z719DRZT	SN9002DRZT

Qualification Report**BQ9002DRZR (9WP9002A3) ROM Fix, (TSMCF3 /0.18um-28L-eFlash)**

Approve Date 10-Oct-2019

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: <u>BQ9002DRZR</u>	QBS Product Reference: <u>BQ28Z610DRZ</u>	QBS Product Reference: <u>BQ9002DRZTMC</u>	QBS Process Reference: <u>MSP430F5510IRGC</u>	QBS Process Reference: <u>MSP430F6638IPZ</u>	QBS Process Reference: <u>TPS62110RSA</u>	QBS Package Reference: <u>BQ9002DRZTMC</u>
-	Test SPQ	Test Program Validation	-	Pass	-	-	-	-	-
AC	Autoclave 121C	96 Hours	-	-	-	3/231/0	-	3/231/0	1/77/0
ED	Electrical Characterization	Per Datasheet Parameters	Pass	-	Pass	-	-	-	Pass
EDR	Non Volatile Memory Endurance 105C	20000 Cycles	-	-	-	3/42/0	-	-	-
EDR	Non Volatile Memory Endurance Room Temp	20000 Cycles	-	-	-	3/84/0	-	-	-
EDR	EEPROM Write /Erase Test, 105C	20k Cycles	-	-	-	-	3/36/0	-	-
EDR	EEPROM Write /Erase Test, 25C	20k Cycles	-	-	-	-	3/36/0	-	-
EDR	EEPROM Write /Erase Test, M40C	20k Cycles	-	-	-	-	3/36/0	-	-
ELFR	Early Life Failure Rate, 140C	48 Hours	-	-	-	-	-	3/1881/0	-
ELFR	Early Life Failure Rate BI, 125C	24 Hours	-	-	-	3/2400/0	-	-	-
ELFR	Early Life Failure Rate BI, 125C	8 Hours	-	-	-	3/2400/0	-	-	-
FW	Firmware Validation	EVM or Customer	-	Pass	-	-	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	-	3/231/0	-
HBM	ESD - HBM	2500 V	-	-	1/3/0	1/3/0	-	-	-
CDM	ESD - CDM	1000 V	-	-	1/3/0	-	-	-	-
HTOL	Life Test, 150C 4.5V	300 Hours	-	-	-	-	3/231/0	-	-
HTOL	Life Test, 150C Tj	300 Hours	-	-	-	3/231/0	-	-	-
HTOL	Life Test, 140C	480 Hours	-	-	-	-	-	3/231/0	-
HTSL	High Temp. Storage Bake, 25C	0 Hours	-	-	-	-	1/12/0	-	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	3/231/0	5/264/0	3/231/0	1/77/0
LU	Latch-up	(per JESD78)	-	-	1/6/0	3/18/0	-	3/15/0	1/6/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	3/231/0	3/231/0	3/231/0	1/77/0
TS	Thermal Shock, -65/150C	500 Cycles	-	-	-	-	-	3/231/0	-
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	-	-	-	-	-	1/77/0

QBS: Qual By Similarity

- Qual Device BQ9002DRZR is qualified at LEVEL2-260C
- Device BQ9002DRZR contains multiple dies.
- 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 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

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