PCN Number:	20230802002.1	**PCN Date:**	August 07, 2023
Title:	TMP139 Design Change		
Customer Contact:	Change Management team	**Dept:**	Quality Services
Proposed 1st Ship Date:	Nov. 7, 2023	**Sample Requests accepted until:**	Sept 7, 2023

***Sample requests received after Sept 7, 2023 will not be supported.**

Change Type:

☐	Assembly Site	☒	Design	☐	Wafer Bump Material
☐	Assembly Process	☐	Data Sheet	☐	Wafer Bump Process
☐	Assembly Materials	☐	Part number change	☐	Wafer Fab Site
☐	Mechanical Specification	☐	Test Site	☐	Wafer Fab Material
☐	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Process

PCN Details

Description of Change:

This notification is to inform of a design change to the TMP139 devices. Affected devices are listed in the Product Affected section of this document.

The design changes are digital logic fixes so that the SA pin is sampled correctly when core supply is enabled.

As a result, the device revision MR2 register value will change from 04h to 06h.

The product datasheet(s) has also been updated which was communicated in Notification # 20230522008. This change may be reviewed at the datasheet links provided:
http://www.ti.com/product/TMP139

Reason for Change:

Improved device operation

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

None

Product Affected: Design Change and datasheet updates

TMP139AIYAHR	TMP139AIYAHT

Qualification Report
Approve Date 30-June-2023

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

Type	#	Test Name	Condition	Duration	Qual Device: TMP139AIYAHR(3.2)	QBS Reference: TMP139AIYAHR(1.1 & 3.1)
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	3/231/0
HTOL	B1	Life Test	125C	1000 Hours	-	3/231/0
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/3000/0

Type	#	Test Name	Condition	Duration	Qual Device: TMP139AIYAHR(3.2)	QBS Reference: TMP139AIYAHR(1.1 & 3.1)
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	1/22/0
ESD	E2	ESD CDM	-	1000 Volts	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	1/3/0
LU	E4	Latch-Up	Per JESD78	-	1/6/0	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0
FTY	E6	Final Test Yield	-	-	Pass	-

- QBS: Qual By Similarity
- Qual Device TMP139AIYAHR is qualified at MSL1 260C
- ESD performed on rev 3.1

- 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/

For questions regarding this notice, e-mails can be sent to the Change Management team, or you can contact your local Field Sales Representative.

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