

PCN Number:	20221130001.1	PCN Date:	December 01, 2022
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Title:	TMP139 Design Change and Datasheet Updates		
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Customer Contact:	PCN Manager	Dept:	Quality Services
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Proposed 1st Ship Date:	Mar. 1, 2023	Sample Requests accepted until:	Dec 30, 2022
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***Sample requests received after December 30, 2022 will not be supported.**

Change Type:			
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process
<input checked="" type="checkbox"/>	Design	<input checked="" type="checkbox"/>	Electrical Specification
<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material
<input type="checkbox"/>	Wafer Fab Site	<input type="checkbox"/>	Wafer Fab Materials
		<input type="checkbox"/>	Part number change

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.

The device register value for minor revision ID will reflect the change in silicon by changing content from 0x02 to 0x04.

The datasheet number will be changing:

	Current	New
Device Family	Datasheet Number	Datasheet Number
TMP139	SNIS217	SNIS217B

The product datasheet(s) is also updated as seen in the change revision history below:



TMP139
SNIS217B – DECEMBER 2020 – REVISED NOVEMBER 2022

TMP139 0.5 °C Accuracy, JEDEC DDR5 Grade B, Digital Temperature Sensor With I²C and I3C Interface

4 Revision History

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

Changes from Revision A (February 2022) to Revision B (November 2022)	Page
• Changed <i>Device Information</i> table to <i>Package Information</i>	1
• Updated typical I_Q from 4.7 μA to 8.3 μA	5
• Updated max I_Q from 10 μA to 12.4 μA	5
• Updated test condition for I_{DDR} and typical current.....	5
• Updated test condition for I_{DDW} and typical current.....	5
• Updated typical active current from 92 μA to 99 μA	5
• Updated typical standby current from 0.6 μA to 4 μA	5
• Updated max standby current from 4 μA to 6.5 μA	5
• Updated t_{SUSTA} in I3C mode from 19.2 ns to 12 ns to match JESD302-1.....	6
• Updated t_{HDSTA} in I3C mode from 38.4 ns to 30 ns to match JESD302-1.....	6
• Updated t_{SUSTO} in I3C mode from 19.2 ns to 12 ns to match JESD302-1.....	6
• Changed Figure 6-8 through Figure 6-12	8
• Moved the <i>Power Supply Recommendations</i> and <i>Layout</i> sections to the <i>Application and Implementation</i> section.....	48

These changes 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):

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

Current	New
Die Rev [2P]	Die Rev [2P]
BA	C

Sample product shipping label (not actual product label)

 TEXAS INSTRUMENTS MADE IN: Malaysia 2DC: 20: MSL '2 /260C/1 YEAR SEAL DT MSL 1 /235C/UNLIM 03/29/04 OPT: ITEM: 39 LBL: 5A (L)T0:1750	 G4		(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: Design Change and datasheet updates

TMP139AIYHR	TMP139AIYAHT
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Qualification Report

Approve Date 17-Nov-2022

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: <u>TMP139AIYAHR(PG 3.1)</u>	QBS Reference: <u>TMP139AIYAHR(PG 1.0)</u>	QBS Reference: <u>TMP139AIYAHR(PG 3.0)</u>
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	1/77/0
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/3000/0	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	1/22/0	-
ESD	E2	ESD HBM	-	2000 Volts	1/3/0	1/3/0	1/3/0
ESD	E2	ESD CDM	-	1000 Volts	1/3/0	1/3/0	1/3/0
LU	E4	Latch-Up	Per JESD78	-	1/6/0	1/3/0	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	1/30/0
FTY	E6	Final Test Yield	-	-	1/Pass	-	-

- QBS: Qual By Similarity
- Qual Device TMP139AIYAHR is qualified at MSL1 260C
- 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

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

Location	E-Mail
WW PCN Team	PCN_ww_admin_team@list.ti.com

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