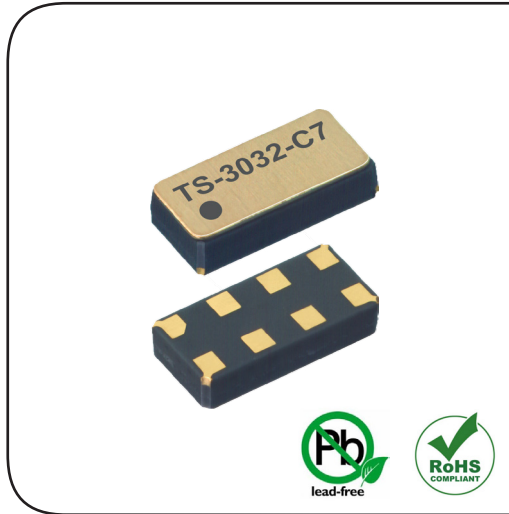
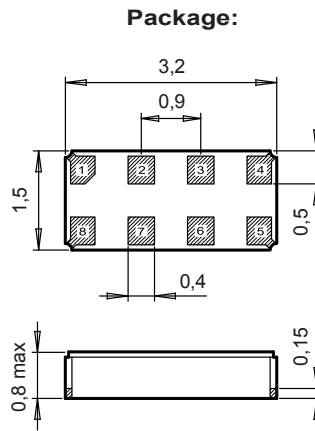


# TS-3032-C7

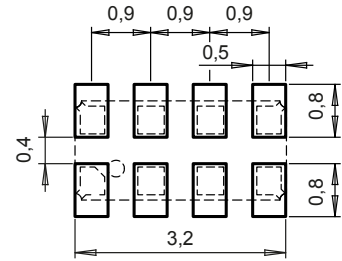
## Temperature Sensor Module with RTC



### DIMENSIONS



### Recommended Solder Pad:



Metal lid is connected to V<sub>SS</sub> (pin #5)

All dimensions in mm typical

### APPLICATIONS

Metering  
Automotive  
IoT Cold Chain  
RTD Replacement  
Wearables, Portables  
Precision Temperature Monitoring

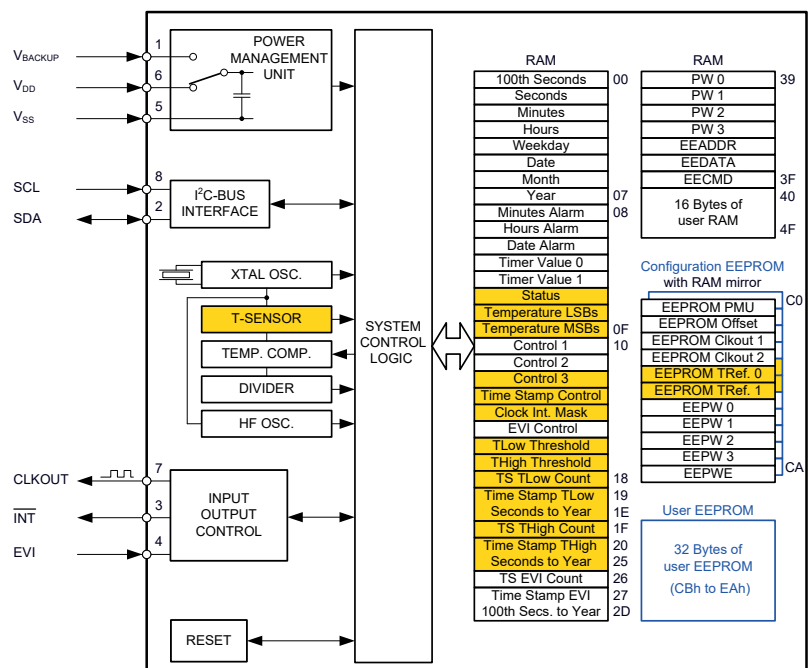
### DESCRIPTION

The TS-3032-C7 is an SMD Digital Temperature Sensor Module with full RTC functions with an embedded XTAL. It operates under vacuum in a hermetically sealed ceramic package with metal lid.

### FEATURES

- 12-bit Temperature Sensor
- Programmable threshold alarms and timestamps
- Accuracy:  $\pm 1^\circ\text{C}$  from  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$
- Readable resolution:  $0.0625^\circ\text{C}$
- Temperature compensated Real-Time Clock:  $\pm 2.5$  ppm
- Ultra low power consumption: 160 nA @ 3 V
- Wide operating voltage range: 1.3 V to 5.5 V
- User programmable Password for write protection
- Automatic Backup Switchover
- Timer, Alarm and External Event functions
- I<sup>2</sup>C-bus interface: 400 kHz
- 100% Pb-free, RoHS-compliant
- Automotive qualification according to AEC-Q200 available

### BLOCK DIAGRAM



## ELECTRICAL CHARACTERISTICS AT 25°C

More detailed information can be found in the Application Manual.

	Symbol	Condition	Min.	Typ.	Max	Unit
Supply voltage	$V_{DD}$	Temp. comp.	1.3		5.5	V
Current consumption Time keeping mode	$I_{DDO}$	I <sup>2</sup> C-bus inactive, $V_{DD} = 3\text{ V}$		160	210	nA
12-bit Temperature Sensor accuracy	$\Delta T$	-40 to +85°C	±1			°C
Readable resolution	$\Delta T$	-40 to +105°C	0.0625			°C

## ENVIRONMENTAL CHARACTERISTICS

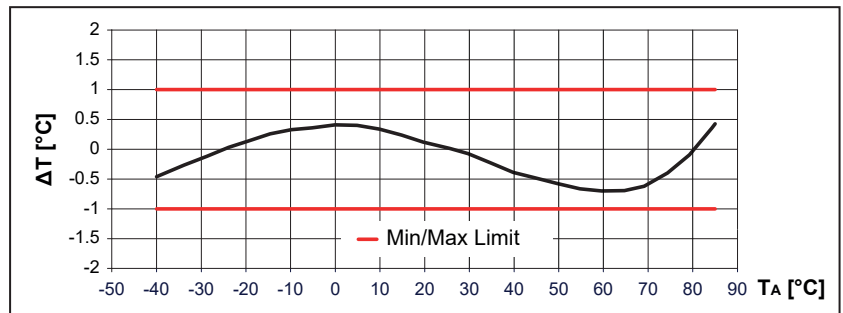
		Conditions	Max. Dev.
Storage temperature range		-55 to +125°C	
TA Operating temperature range		-40 to +85°C <sup>1)</sup>	
Crystal shock resistance	$\Delta F/F$	5000 g, 0.3 ms, ½ sine	±5 ppm
Crystal vibration resistance	$\Delta F/F$	20 g / 10–2000 Hz	±5 ppm

1) Supports extended range from +85°C to +105°C with limitations.

## TERMINATIONS AND PROCESSING

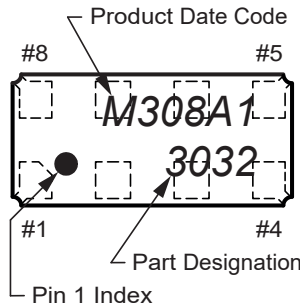
Package	Termination	Processing
SON-8	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s

## TEMPERATURE SENSOR ACCURACY



## PIN CONNECTIONS TOP VIEW

Pin	Connection
1	$V_{BACKUP}$ Backup Supply Voltage
2	SDA Serial Data
3	$\overline{INT}$ Interrupt Output
4	EVI Event Input
5	$V_{SS}$ Ground
6	$V_{DD}$ Power Supply Voltage
7	CLKOUT Clock Output
8	SCL Serial Clock Input



## ORDERING INFORMATION

TS - 3032 - C7 TA QC	
T-Sensor module	Qualification
Product type	QC = Commercial Grade (Standard)
Package size	QA = Automotive Grade AEC-Q200
C7 = 3.2 x 1.5 x 0.8 mm	Temperature range
	TA = -40 to +85°C (Standard)
	(supports extended range from +85°C to +105°C with limitations)
A unique part number will be generated for each product specification, i.e:	
20xxxx-MG01	1'000 pcs (in 12 mm tape on 7" reel)
20xxxx-MG03	3'000 pcs (in 12 mm tape on 7" reel)

All specifications subject to change without notice.



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