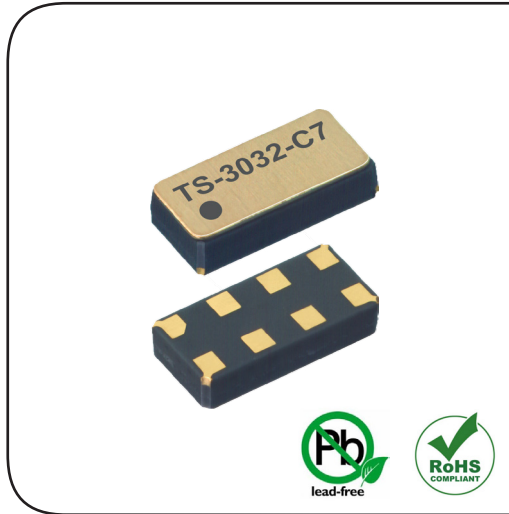
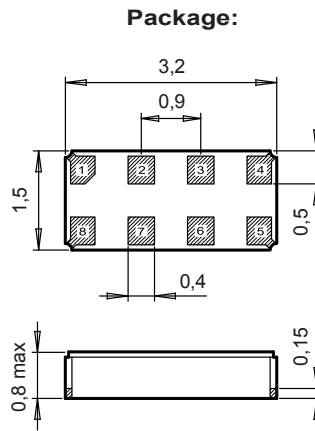


TS-3032-C7

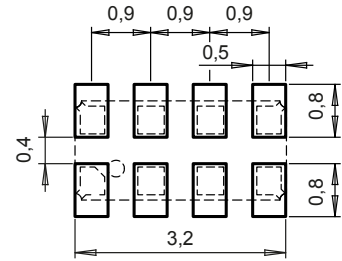
Temperature Sensor Module with RTC



DIMENSIONS



Recommended Solder Pad:



Metal lid is connected to V_{SS} (pin #5)

All dimensions in mm typical

APPLICATIONS

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

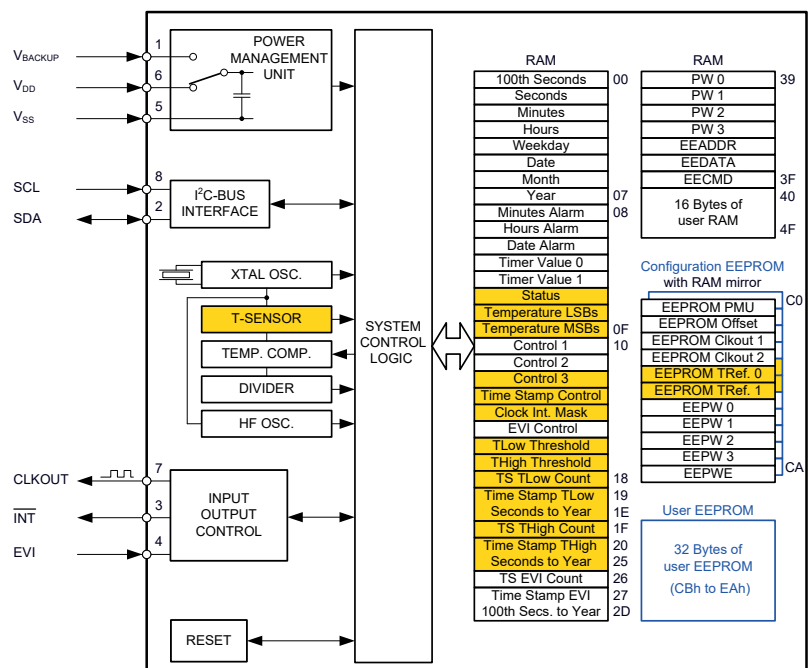
DESCRIPTION

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: $\pm 1^\circ\text{C}$ form -40°C to $+85^\circ\text{C}$
- Readable resolution: 0.0625°C
- Temperature compensated Real-Time Clock: ± 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
- I²C-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 ² C-bus inactive, $V_{DD} = 3\text{ V}$ | | 160 | 210 | nA |
| 12-bit Temperature Sensor accuracy | ΔT | -40 to +85°C | ±1 | | | °C |
| Readable resolution | ΔT | -40 to +105°C | 0.0625 | | | °C |

ENVIRONMENTAL CHARACTERISTICS

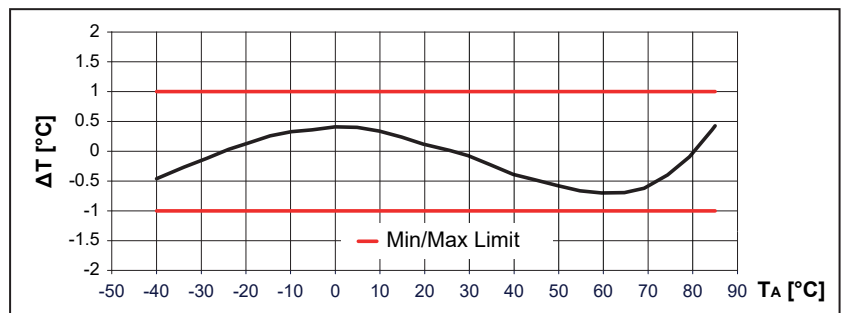
| | | Conditions | Max. Dev. |
|--------------------------------|--------------|----------------------------|-----------|
| Storage temperature range | | -55 to +125°C | |
| TA Operating temperature range | | -40 to +85°C ¹⁾ | |
| Crystal shock resistance | $\Delta F/F$ | 5000 g, 0.3 ms, ½ sine | ±5 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

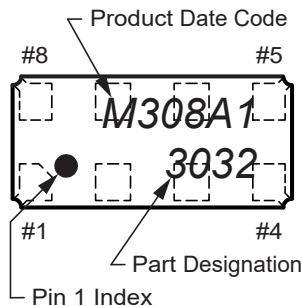
| Package | Termination | Processing |
|---------|-----------------|---|
| SON-8 | Au flashed pads | IPC/JEDEC J-STD-020C 260°C / 20 - 40 s |

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) QA = Automotive Grade AEC-Q200 |
| Package size | | Temperature range |
| C7 = 3.2 x 1.5 x 0.8 mm | | 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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