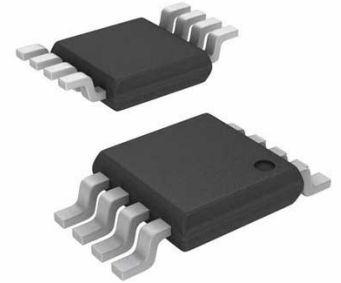


## Temp Sensor Digital Serial (2-Wire, I2C, SMBus) Automotive 8-Pin VSSOP T/R



Images are for reference only

[Inquiry](#)

**Manufacturer:** [Texas Instruments, Inc](#)

**Package/Case:** MSOP-8

**Product Type:** Sensors, Transducers

**RoHS:** RoHS Compliant/Lead free 

**Lifecycle:** Active

### General Description

The TMP75-Q1 and TMP175-Q1 devices are digital temperature sensors ideal for negative temperature coefficient (NTC) and positive temperature coefficient (PTC) thermistor replacement. The devices offer a typical accuracy of  $\pm 1^{\circ}\text{C}$  without requiring calibration or external component signal conditioning. Device temperature sensors are highly linear and do not require complex calculations or look-up tables to derive the temperature. The on-chip, 12-bit, analog-to-digital converter (ADC) offers resolutions down to  $0.0625^{\circ}\text{C}$ . The devices are available in the industry-standard, LM75, 8-pin SOIC and VSSOP footprint.

The TMP175-Q1 and TMP75-Q1 feature SMBus, two-wire, and  $I^2C$  interface compatibility. The TMP175-Q1 device allows up to 27 devices on one bus. The TMP75-Q1 allows up to eight devices on one bus. The TMP175-Q1 and TMP75-Q1 both feature an SMBus alert function.

The TMP175-Q1 and TMP75-Q1 devices are ideal for extended temperature measurement in a variety of communication, computer, consumer, environmental, industrial, and instrumentation applications. The TMP75-Q1 production units are 100% tested against sensors that are NIST-traceable and are verified with equipment that are NIST-traceable through ISO/IEC 17025 accredited calibrations.

The TMP175-Q1 and TMP75-Q1 devices are specified for operation over the temperature range of  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ .

## Key Features

AEC-Q100 Qualified with:  
Temperature Grade 1: -40°C to +125°C Ambient Operation Temperature Range

HBM ESD Classification Level 2

CDM ESD Classification Level C6

TMP175-Q1 Accuracy:  
±1°C (Typical) from -40°C to +125°C

±2°C (Maximum) from -40°C to +125°C

TMP75-Q1 Accuracy:  
±1°C (Typical) from -40°C to +125°C

±3°C (Maximum) from -40°C to +125°C

TMP175-Q1: 27 Addresses

TMP75-Q1: 8 Addresses, NIST Traceable

Digital Output: SMBus , Two-Wire, and I<sup>2</sup>C Interface Compatibility

Resolution: 9 to 12 Bits, User-Selectable

Low Quiescent Current: 50-µA, 0.1-µA Standby

Wide Supply Range: 2.7 V to 5.5 V

Small 8-Pin VSSOP and 8-Pin SOIC Packages

## Recommended For You

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### **TMP451AIDQFR**

Texas Instruments, Inc  
WSO8

### **TMP411AQDGKRQ1**

Texas Instruments, Inc  
MSOP8

### **TMP100AQDBVRQ1**

Texas Instruments, Inc  
SOT-23-6

### **TMP75AQDGKRQ1**

Texas Instruments, Inc  
VSSOP8

### **TMP112AQDRLRQ1**

Texas Instruments, Inc  
SOT-563

### **TMP101NAQDBVRQ1**

Texas Instruments, Inc  
SOT23-6

### **TMP102AQDRLRQ1**

Texas Instruments, Inc  
SOT-563

### **TMP422AQDCNRQ1**

Texas Instruments, Inc  
SOT23-8

### **TMP421AQDCNRQ1**

Texas Instruments, Inc  
SOT23-8

### **TMP451AQDQWRQ1**

Texas Instruments, Inc  
WSO8

### **TMP451HQDQFRQ1**

Texas Instruments, Inc  
WSO8

### **TMP411DQDGKRQ1**

Texas Instruments, Inc  
MSOP8

**TMP451AQDQFRQ1**

Texas Instruments, Inc

WSO8

**TMP75BQDGKRQ1**

Texas Instruments, Inc

MSOP8

**TMP126EDBVRQ1**

Texas Instruments, Inc

SOT23-6