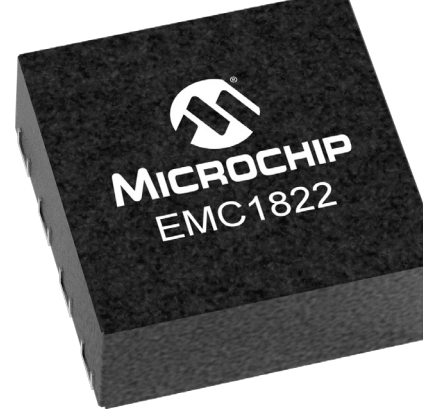


ANALOG SPOTLIGHT

EMC1822/23/24/25/43

Multi-Channel Low-Voltage Temp Sensors With Shutdown



General Information

The EMC1843 device is a 1.8V, 3-channel, high-accuracy, 2-wire (I²C compatible) temperature sensor. Advanced features such as rate of change, shutdown, Resistance Error Correction (REC), Beta Compensation (to support CPU diodes requiring the BJT/transistor model) and ideality configuration combine to provide a robust solution for complex environmental monitoring applications.



Features

- Measures temperature rate of change calculation with preemptive alert(s) limits
- Up to four external temperature monitors:
 - 8-lead devices: $\pm 1^{\circ}\text{C}$ maximum accuracy (-20°C to +105°C TA, -40°C to +125°C TD)
 - $\pm 1.5^{\circ}\text{C}$ maximum accuracy (-40°C to +125°C TA, -40°C to +125°C TD)
 - 10-lead devices: $\pm 1^{\circ}\text{C}$ maximum accuracy (-20°C to +125°C TA, -40°C to +125°C TD)
 - $\pm 1.5^{\circ}\text{C}$ maximum accuracy (-40°C to +125°C TA, -40°C to +125°C TD)
- Internal temperature sensor:
 - $\pm 1^{\circ}\text{C}$ maximum accuracy, -40°C to +125°C
- Temperature sensor resolution (internal/external): 0.125°C
- Resistor programmable system shutdown temperature
- Configurable alert pins operating voltage: 1.62V to 3.6V
- Temperature range: -40°C to +125°C
- Other features: auto-beta compensation, configurable ideality factor, hottest diode compare, resistance error correction
- Available in 8-lead 2x2 mm WDFN, 10-lead 2.5x2.0 mm VDFN and 10-lead MSOP
- Extended temperature range: -40°C to +125°C

Applications

- IoT devices for low system voltage
- Monitoring temperature for food storage
- Industrial applications
- Computing and data centers

Benefits

- Rate of temperature change with preemptive alerts help better regulate devices
- Protective and shutdown features provide robust solution for monitoring systems
- And frees the user from providing unique sensor configurations for each application

EMC1833 Temperature Sensor Evaluation Board



The EMC1833 Temperature Sensor Evaluation Board demonstrates the EMC1843 as well as features for the EMC1812/3/4/5, EMC1822/3/4/5 and EMC1833. The board allows

a user to view and modify registers, such as:

- Plot the temperature of the three temperature channels
- Set alert temperatures associated with those channels
- Evaluate the rate of change measurement and alert functions

microchip.com/EMC1822

