EMCT03
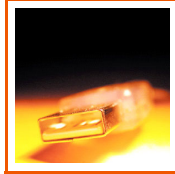
1°C Triple SMBus Temperature Sensor

General Description

The EMCT03 is a System Management Bus (SMBus) temperature sensor that is capable of monitoring three temperature zones for a PC or embedded environment. The three temperature zones consist of two external and one internal temperature diode. The internal 11 bit sigma-delta ADC architecture with digital filtering attributes to superb linearity and immunity to interference and noise. An extended temperature format may be selected for compatibility with a broad range of CPUs. Selectable conversion rates and standy mode support low-power operation.

Applications

- Desktop and Notebook Computers
- Thermostats
- Smart batteries
- Industrial / Automotive

Features

- Low Power; 3.0V to 3.6V Supply
  — Programmable conversion rate
  — < 1mA at 16 Conversions per Second
  — < 3uA in Standy Mode
- SMBus 2.0 Compliant interface
- Two External Temperature Monitors:
  — Range -64°C to +191°C
  — 0.125°C resolution
  — ±1°C Accuracy 40°C to 80°C
  — Diode Fault Reporting
- Internal Temperature Monitor
  — Range 0°C to +85°C
  — 0.125°C resolution
  — ±3°C Accuracy 0°C to 85°C
- Programmable Conversion Rate
- MSOP-8 3x3mm Package

Simplified Block Diagram

PRODUCT PREVIEW

Package Outline

TOP VIEW

DETAIL 'A'

SIDE VIEW

END VIEW

SEE DETAIL 'A'
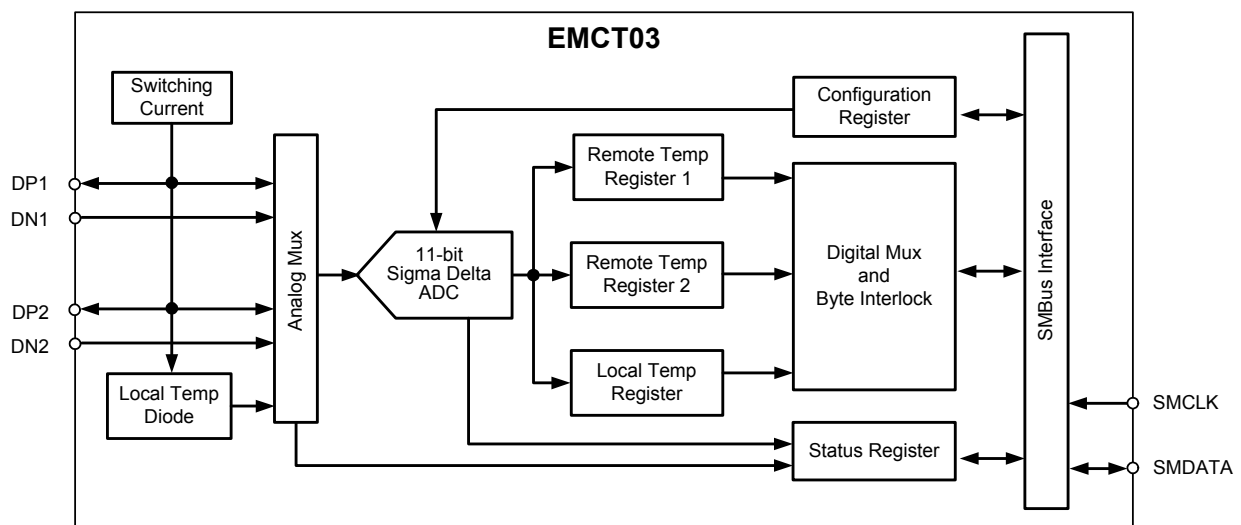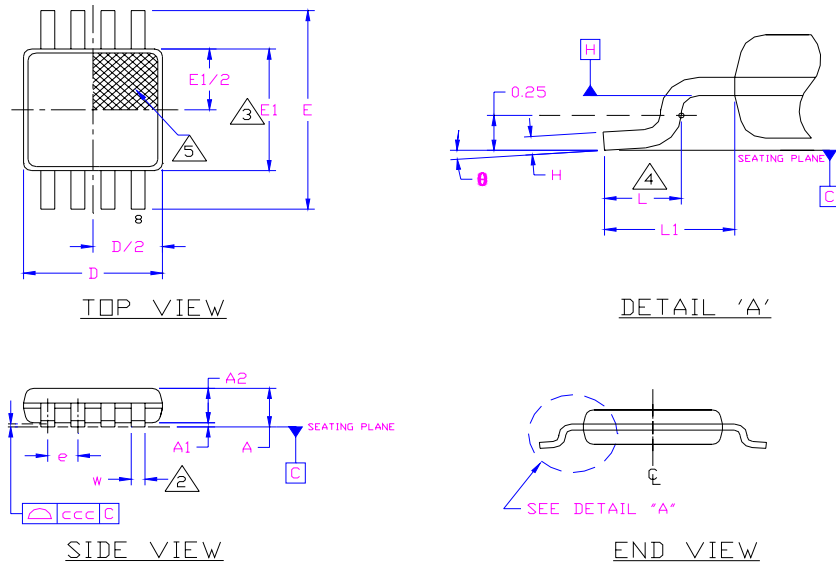
Figure 1 8-Pin MSOP Package Outline - 3x3mm Body 0.65mm Pitch

Table 1 8-Pin MSOP Package Parameters

	MIN	NOMINAL	MAX	REMARKS
A	0.80	~	1.10	Overall Package Height
A1	0.05	~	0.15	Standoff
A2	0.75	0.85	0.95	Body Thickness
D	2.80	3.00	3.20	X Body Size
E	4.65	4.90	5.15	Y Span
E1	2.80	~	3.20	Y body Size
H	0.08	~	0.23	Lead Foot Thickness
L	0.40	~	0.80	Lead Foot Length
L1	0.95 REF			Lead Length
e	0.65 BSC			Lead Pitch
θ	0°	~	8°	Lead Foot Angle
W	0.22	~	0.38	Lead Width
ccc	~	~	0.10	Coplanarity

Notes:

1. Controlling Unit: millimeters.

2. Tolerance on the true position of the leads is ± 0.065 mm maximum.

3. Package body dimensions D and E1 do not include mold protrusion or flash. Dimensions D and E1 to be determined at datum plane H. Maximum mold protrusion or flash is 0.15mm (0.006 inches) per end, and 0.15mm (0.006 inches) per side.

4. Dimension for foot length L measured at the gauge plane 0.25 mm above the seating plane.

5. Details of pin 1 identifier are optional but must be located within the zone indicated.

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ORDER NUMBER(S):

EMCT03-ACZB for 8-pin MSOP package

EMCT03-ACZB-TR for 8-pin MSOP package (Tape and Reel)

EMCT03-ACZL for 8-pin MSOP package (Lead Free)

EMCT03-ACZL-TR for 8-pin MSOP package (Lead Free, Tape and Reel)

Evaluation Board Available upon request.

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