



LM57B10EB
8/7/09 (R2.1)

LM57 Evaluation Kit Manual

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1 General Description

The LM57 Evaluation Kit is a RoHS compliant kit designed to facilitate evaluation of the LM57 Resistor Programmable Temperature Switch and Analog Temperature Sensor. The Evaluation Board has a 10°C hysteresis LM57B in an LLP-8 presoldered to the board. There is a jumper to allow for shorting the Trip-Test pin to ground and an 8 pin header that brings all package pins out for ease of characterization and testing.

The board can take either 0805 surface mount trip point set resistors or ¼ Watt axial lead resistors. The trip point set resistors are not stuffed in the board allowing the customer to set their own custom trip point according to the values found in the table of Section 1 of the LM57 datasheet. It is also possible to drive in set point voltages on the 8 pin header with two voltage source using the information in Section 7 of the datasheet.

2 Quick Start

The first step is to choose a temperature trip point and install RSET1 and RSET2 (surface mount) or RSET1A and RSET2A (axial lead) resistors according to the table in Section 1, Page 8 of the datasheet.

All of the devices pins come out to the 8 pin header. You provide power (VDD) and ground (GND) through the banana jacks on the board or through the header. After powering up the part, the temperature can be derived from the voltage on the VTEMP pin, along with the correct equation for the temperature based on the gain setting chosen by the temperature switch setting resistors. See Section 2.1 on page 11 for the VTEMP

equation and the table in Section 1, Page 8 for which gain (J2, J3, J4 or J5) the part is set for.

The two pin jumper, P1, right above the part is used to short the trip test point to ground for normal use. To activate the triptest function, remove the short and drive the trip test point with Vdd. Once activated, the outputs of the part will be asserted - low for Tover\ and high for Tover. Also, the Vtemp pin will have the voltage corresponding to the internal set point for the comparator. In this way, you can check that your external circuitry works with the LM57 without having to use a temperature handler. You can also verify what Vtemp, and hence what temperature, you are set for.

3 BOM

Designator	Value	Package	Description	Manufacturer	Part Number	RoHS
AA		N/A	Printed Circuit Board			Y
C1	2.2uF	3216-18	TA, 16V, 10%, 5.9Ohm ESR	Vishay-Sprague	'293D225X9016A2TE3	Y
C2	0.01uF	0805	Ceramic, X7R, 100V, 10%	AVX	'08051C103KAT2A	Y
C3	1000pF	0805	Ceramic, COG/NP0, 50V, 5%	Kemet	'C0805C102J5GACTU	Y
GND, VDD		1/4-28	Uninsulated Standard .175 Female Banana Jack Panel Mount	Emerson Network Power Connectivity Solutions	108-0740-001	Y
J1	1x8		Header, TH, 100mil, 1x8, Tin plated for LM57 board	Sullins	PBC36SAAN	Y
P1	1x2		Header, TH, 100mil, 1x2, Tin plated, 230 mil above insulator	Sullins	PBC36SAAN	Y
R1	1.00k	0805	1%, 0.125W	Vishay-Dale	CRCW08051k00FKEA	Y
R2	200k	0805	5%, 0.125W	Vishay-Dale	'CRCW0805200kJNEA	Y
U1		LLP-8	Resistor Programmable Temperature Switch and Analog Temperature Sensor	National Semiconductor	LM57B-10	Y

4 Schematic

