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Underwriters Laboratories Inc.®

File E232195
Project 03SC08623

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REPORT

ON

COMPONENT – TEMPERATURE INDICATING AND REGULATING EQUIPMENT

National Semiconductor Corp.
Sunnyvale, California

DESCRIPTION

PRODUCT COVERED:

Component – Temperature Sensing Integrated Circuit Device, Model LM61, followed by B or C suffix, followed by I, followed by M3 or Z, may be followed by X.

ELECTRICAL RATINGS:

*

Operating Supply Voltage Range: +2.7V to +10V
Maximum Operating Temperature for LM61B: 85°C
Maximum Operating Temperature for LM61C: 100°C

*

MODEL NOMENCLATURE: LM61BIM3X

LM61	X	I	X	X
I	II		III	IV

I: Series Designation

II: Operating Ratings

B: Operates from –25°C to 85°C and has an accuracy of ± 3°C
C: Operates from –30°C to 100°C and has an accuracy of ± 4°C

III: Package

M3: Encapsulated in an SOT 23 lead plastic package
Z: Encapsulated in an TO-92 lead plastic package (slightly smaller than the SOP package)

IV: Shipping material

X: Device delivered in tape-and-reel external shipping material

GENERAL:

When a low voltage signal is applied to the input (pin V+), a low voltage output signal is generated (pin Vo) when operated below the rated operating temperature of the device. The output voltage is leinearly proportional to the Celsius temperature (+10mV/°C) and has a DC offset of +600 mV.

Temperature (°C)	Output (mV)
100	1600
85	1450
25	850
0	600
-25	350
-30	300

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Conditions of Acceptability – For use only in complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

1. These devices are intended to be used only in Class 2 or Low-Voltage, Limited Energy (LELV) circuits. These devices have not been evaluated for other circuits or abnormal conditions.

2. These devices have not been evaluated for overshoot temperatures.

3. The enclosure has not been evaluated for insulation of live parts. The body of each device is considered to be a live part. The suitability of spacings between the body of these devices and other live parts shall be determined in the end product evaluation.

4. The suitability of the connection and mounting means of these devices with respect to temperature and secureness shall be determined in the end product evaluation.

5. The devices covered by this Report have undergone 6000 cycles of Endurance Testing. Although calibrated, these devices are not intended for safety (limiting) applications.

"LM61" SERIES

General – Devices consist of an IC with leads for surface mount connection. Only the following materials are controlled. Represents all models.

1. IC Chip – One provided. For models with M3 suffix overall approximately 2.9 mm 1.3 mm by 0.9 mm. For models with Z suffix, overall approximately 5 mm by 5 mm by 4 mm. Refer to ILL. 1.

*2. Leads – Three provided. **Lead finishing can be CU SN or SN** Length may vary. Secured to IC Chip by molding.

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