



## ELECTRONIC HEAT DETECTORS

### GENERAL DESCRIPTION

The M75001/M75002/M75003 is thermistor based electronic Heat Detectors IC both with an 114.8°F (46°C) /135°F (57°C) /158°F (70°C) fixed temperature set point or adjustable temperature set point . In addition and has a Rate-Of-Rise of temperature detection feature rated at 15.6°F (8.7°C) per minute. It is designed for use in low power, net work operated, consumer applications with minimum of external components.

### FEATURES

- 5V operating voltage range.
- 103NT thermistor based Heat Detection
- Measurement accuracy :  $\pm 1^{\circ}\text{C}$  , Resolution :  $0.1^{\circ}\text{C}$
- Nominal Sensitivity

**M75001 : 114.8°F (46°C) Fixed Temperature / 15.6°F (8.7°C) per minute Rate-Of-Rise ( @RA=0Ω).**

**M75002 : 135°F (57°C) Fixed Temperature / 15.6°F (8.7°C) per minute Rate-Of-Rise ( @RA=0Ω).**

**M75003 : 158°F (70°C) Fixed Temperature / 15.6°F (8.7°C) per minute Rate-Of-Rise ( @RA=0Ω).**

**Adjustable Temperature/15.6°F (8.7°C) per minute Rate-Of-Rise ( @RA=xxxxΩ), detail please see table 1.**

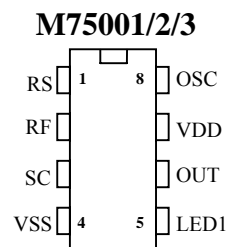
- Low Current design.
- Interchangeable 2-Wire and 4-Wire Bases relay functions.
- Dual Response LEDs (LED1, LED2).  
During standby, the LED1 flash once every 7 seconds.  
During alarm, the LED2 light steady at full brilliance.  
A double flash every 7 seconds indicates a detector with a thermistor trouble.
- Ideal for low powered net work applications.

### APPLICATIONS

- Heat detector.

### PIN ASSIGNMENT

Pin No	Pin Name	Description
1	RS	Connect thermistor resistor
2	RF	Connect reference resistor
3	SC	Common point
4	VSS	Power supply GND
5	LED1	During Standby indicator
6	OUT	At smoke condition occurs, this pin is driven high.
7	VDD	Positive power supply.
8	OSC	For system oscillator in.





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**ABSOLUTE MAXIMUM RATING**

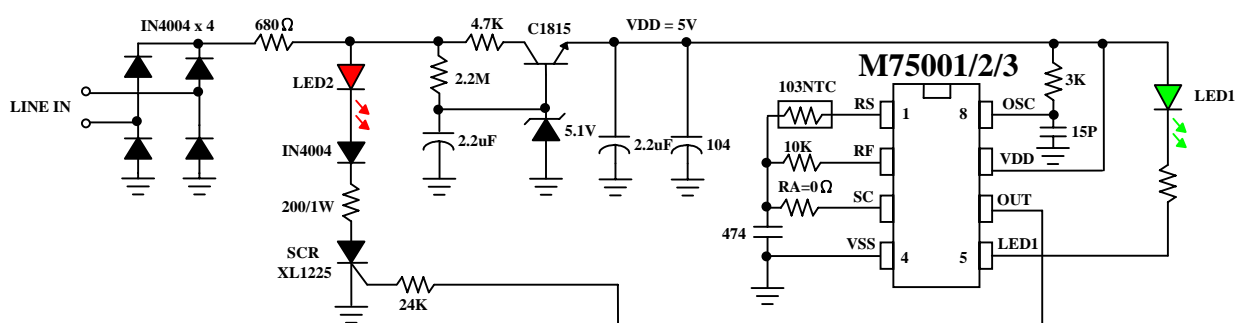
Parameter	Sym.	Rating	Unit
Supply Voltage Range	$V_{DD}$	-0.5 ~ 5	V
Input Voltage Range	$V_{IN}$	-0.3 to $V_{DD} + 0.3$	V
Input Current	$I_{IN}$	10	mA
Operating Temperature Range	$T_A$	-25 ~ 75	°C
Storage Temperature Range	$T_S$	-55 to 125	°C

**ELECTRICAL CHARACTERISTICS**

Characteristics	Sym.	Min.	Typ.	Max.	Unit	Conditions
Operating Voltage	$V_{DD}$	2.4	5	6	V	
Operating Current	$I_{OP}$	—	0.5	1	mA	No load
Quiescent Current	$I_{SB}$	—	—	20	$\mu A$	
Output Drive Current	$I_O$	—	2	—	mA	@ $V_{DS}=1.2V$
Input Voltage	$V_{IH}$	$V_{DD}-0.2$	$V_{DD}$	$V_{DD}$	V	
	$V_{IL}$	$V_{SS}$	$V_{SS}$	$V_{SS}+0.2$		
Oscillator Frequency	$F_{OSC}$	—	8	—	MHz	External $\pm 10\%$

**APPLICATION DIAGRAM**

**(A) Fixed Temperature (@ $R_A=0\Omega$ )**

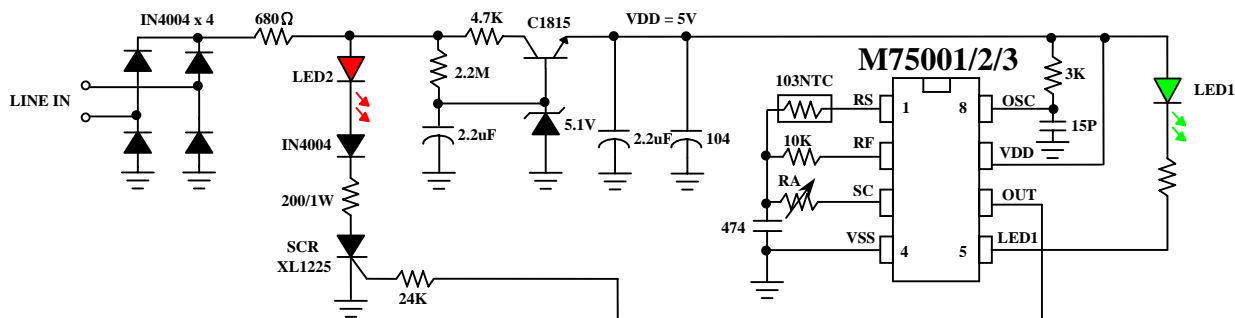


\* All specs and applications shown above subject to change without prior notice.  
(以上電路及規格僅供參考,本公司得逕行修正)



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(B) Adjustable Temperature Set Point



RA	Temperature set point (°F)	Temperature Set point (°C)
17.96KΩ	50	10
12.09KΩ	68	20
8.313KΩ	86	30
5.827KΩ	104	40
4.160KΩ	122	50
3.020KΩ	140	60
2.228KΩ	158	70
1.668KΩ	176	80

\* Table 1

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