MOS (PTY) LTD.
Microsystems On Silicon
Member of ELMOS Semiconductor AG

Application Note:
Sensitivity compensation with a NTC

The sensitivity setting of the M2000C, M2006C and M2008A devices are adjustable according to ambient temperature.

A pyroelectric infrared sensor reacts to changes in radiated thermal energy. The sensor would be least sensitive in an environment where the background temperature and the moving object are the same temperature.

It is desirable to increase the sensitivity of a sensor unit around 37ºC.

The M2000C, M2006C and M2008A are able to change sensitivity according to a voltage applied on the TCOMP input.

The sensitivity profile of the devices is indicated in table 1. Note that it is not a linear function. The voltage applied on the TCOMP input translates into a TCOMP factor that scales the sensitivity of the device.

*Temperature Dependant Circuit*_____

A resistor network such as the one shown here generates a temperature dependent voltage, suitable for use with the M2000C, M2006C and M2008A devices.

*Compensation Graph*_____

Relative Threshold Level vs Temperature
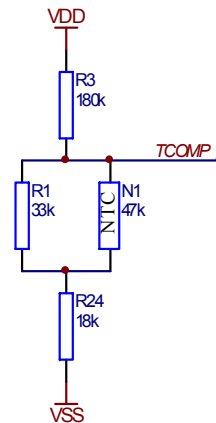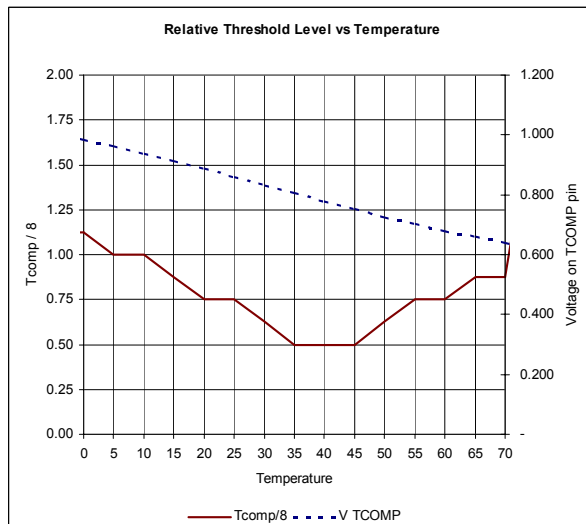
*Temperature Compensation Factors*__

Table 1: Temperature compensation factors

Pin voltage/V_{DD}	TCOMP factor	Pin voltage/ V_{DD}	TCOMP factor
<16/128	7	24/128	8
17/128	6	25/128	9
18/128	5	26/128	10
19/128	4	27/128	11
20/128	4	28/128	12
21/128	5	29/128	13
22/128	6	30/128	14
23/128	7	>31/128	15

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