Re: Comparator for sensor

Source: http://sci.tech−archive.net/Archive/sci.electronics.basics/2006−01/msg01498.html

- *From*: Manimozhi Baskaran <baskaran@xxxxxxxxxxxxxxxxx>
- *Date*: Tue, 31 Jan 2006 15:24:24 −0500

My Infra Red sensor will detect the temperature range of −40 degree to +60 degree centigrade variation with:
−40 degree to output a typical voltage of < 0.21 V
−20 degree to output a typical voltage of 0.21V,
−15 degree to a typical voltage of 0.3 V etc.,

I like my sensor to detect only the temperature range −40 degree to −5 degree range which would typically vary between 0. 2 V to 0.8 Volts. The typical supply voltage to the sensor will be 5V and its supply current will be 2 mA. The output of the sensor will be anywhere between 0.25 Volts to 4.75 Volts. The output current will be less than 2mA. What type of circuit design should I use in order to detect the range so that it can beep when the voltage is less than 0.8 V which I believe is what I should use as my reference voltage.

Any assistance will be appreciated.

Thanks
Mani

John Fields wrote:

> On Tue, 31 Jan 2006 10:20:28 −0500, Manimozhi Baskaran
> <baskaran@xxxxxxxxxxxxxxxxx> wrote:
>
> > Hi,
> >
> > I am building an application that needs to beep
> > when the voltage output

from the sensor device is less than 0.8 Volts. I am not sure what would

be the right design that I can use for the buzzer to beep. The voltage for the sensor is 5 V DC supply. Should I consider using 741/LM series?

No. Consider using a real comparator, like John Popelish suggested.

However, an LM393 may not be able to give you enough output current to run your beeper, so if you could post what its voltage and current requirements are we can suggest an appropriate means of driving it. Also, if you could tell us what you're using for a sensor we'll be able to suggest how to set up a proper "front end" and provide any hysteresis the circuit may require.

.