

## Re: schottky tempco

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- *From:* gearhead <nospam@xxxxxxxxxxxx>
  - *Date:* Wed, 12 Dec 2007 16:55:34 -0800 (PST)
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On Dec 12, 1:23 pm, gearhead <nos...@xxxxxxxxxxxx> wrote:

Is it 2.2 mV/C?

I need a diode with a low voltage drop and a known temperature coefficient.

I'm going to put it in series with the adjust terminal of a lm317 in constant-current

configuration, so the voltage with respect to ground at the output pin of the 317 will be 1.2 volts plus the voltage drop across the schottky (which will have a constant current through it).

This way I can tune the circuit to give me the exact dV/C I need. It will be for temperature compensation in a lead-acid battery charging circuit. Since I need about 2000 ppm/C, or maybe a little more, a "regular" silicon diode won't work. It would have 2.2 mV/C out of nearly 2 volts (1.2 + Vf), giving me in the 1000 ppm range. So I need to consider using a schottky.

Apparently temperature coefficient varies with the log of the current according to the shockley equation. If I can determine the parameters (like the ideality factor) for a particular schottky I can get the math worked out and fiddle with the current setting to get the temperature characteristic of the circuit right.

I'm going to set the current at 5 or 10 mA to make sure the 317 works right.

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