

Re: Protecting ADC Inputs

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On Mon, 27 Dec 2004 18:31:07 -0600, "Richard" <rwskinner ATawesomenet Dot net> wrote:

>I'm built a circuit board for my Analog card. My normal inputs will be 0-5
>vdc but the max allowed on the ADC is 10 vdc.

>I was thinking about putting some zeners across the input circuit so the
>voltage will never go above 10 volts. I left a space from each input to
>ground for a surface mount 1/2 watt resistor. These were there so we could
>do a 4-20ma conversion.

>

>So, First, will zeners work without affecting my normal input voltage?

>Second, are zeners available close to the 10 volt range?

>

>Any better simpler solutions?

>

>Thanks,

>Richard

>

>

Zeners are good. 6.8 volts, 1 watt maybe, should absorb some pretty good zaps. A 6-volt or better zener will conduct tiny currents at 5 volts. A series polyfuse might be nice, too, in case somebody decides to connect +48 volts to your input or something.

If your ADC input is high impedance, a series RC ahead of it is prudent too. That gives additional zap/latchup protection and filters noise, too. It's a generally good policy to avoid connecting any IC pin directly to the outside world.

John