Re: Looking for a circuit to

Source: http://sci.tech−archive.net/Archive/sci.electronics.basics/2004−07/0266.html

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From: Robert C Monsen (*rcsurname_at_comcast.net*)
Date: 07/08/04

Date: Thu, 08 Jul 2004 05:48:21 GMT

−−−−− Original Message −−−−−
From: "Terry Pinnell" <terrypinDELETE@THESEdial.pipex.com>
Newsgroups: sci.electronics.basics
Sent: Wednesday, July 07, 2004 10:14 PM
Subject: Re: Looking for a circuit to

> "Robert C Monsen" <rcsurname@comcast.net> wrote:
>
> >
> >"Terry Pinnell" <terrypinDELETE@THESEdial.pipex.com> wrote in
message
> >news:b7loe0hc57bqare5cqh1k9t394nqtv3tvg@4ax.com...
> >> "Robert C Monsen" <rcsurname@comcast.net> wrote:
> >>
> >> >
> >> >"John Fields" <jfields@austininstruments.com> wrote in message
> >> >news:6ffle01kr2l54bosdi060g07p7hv7m145s@4ax.com...
> >> >> On Mon, 05 Jul 2004 16:38:17 GMT, "Robert C Monsen"
> >> >> <rcsurname@comcast.net> wrote:
> >>
> >> >> Unfortunately, because of bounce it will also fire when the
> >switch
> >> >> opens. :−(
> >>
> >>
> >> >I think you are right. How about this one?
> >> <snip circuit with aded 100k at pin 2>
> >>
> >> I don't see how that will help?
> >
> >What happens is that the switch bounces on open cause the node
behind
> >the cap to wiggle above the rail... The diode behind the 100k
resistor
> >(or protection diode inside the chip) keeps this from hurting the
> >chip's inputs. . On open bounces, the trigger pin never gets lower
> >than about 4.5V.

> >
> >*Give it a try, I built it, it works...*
>
> *OK, then my 555 model must be unrealistic, or my*
> *schematic/configuration flawed. I still got spurious triggering when*
I
> *simulated it:*
> *http://www.terrypin.dial.pipex.com/Images/WindowSwTimerSIM2.gif*
>
> *(If you want, I'll send you the CKT and PWL.)*
>
> – –
> *Terry Pinnell*
> *Hobbyist, West Sussex, UK*
>
>

No, you put the diode to 5V on the wrong side of the 100k resistor.

The problem is that the diode keeps that node from getting up above
5.7V, so
the quick drops of the far left side on switch bounce cause the chip
to trigger.
Putting the diode on the other side of the 100k resistor means it
doesn't
affect that node as much, which can now go up to 10V when the switch
opens.
Thus, bounces on switch open now bounce between 10V and 5V rather than
5V
and 0V, and therefore don't trigger the 555. The diode simply protects
the
555 from any damage that the 10V might cause, and is probably not
required
for cmos 555s, since they have input protection diodes anyway.

Regards,
Bob Monsen