Re: TO3 & HEATSINK

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From: Norm Dresner (*ndrez_at_att.net*)
Date: 07/28/04

Date: Wed, 28 Jul 2004 16:00:48 GMT

"exxos" <exxos@home.co.uk> wrote in message
news:4107bd61$0$6440$cc9e4d1f@news−text.dial.pipex.com...
>
> "Norm Dresner" <ndrez@att.net> wrote in message
> news:svONc.144428$OB3.71995@bgtnsc05−news.ops.worldnet.att.net...
> >
> > "Norm Dresner" <ndrez@att.net> wrote in message
> > news:_vCNc.337854$Gx4.89883@bgtnsc04−news.ops.worldnet.att.net...
> > > "exxos" <exxos@home.co.uk> wrote in message
> > > news:4106d62f$0$6451$cc9e4d1f@news−text.dial.pipex.com...
> > > > Hi all,
> > > >
> > > > Instead of mounting the TO3 transistor ont he flat part (bottom)
onto
> > the
> > > > heatsink, do you lot recon I could drill a large hole in a heatsink
> and
> > > > mount the can side into it, and put heatpaste around the can and
screw
> > it
> > > > down from the top ? does anyone have any thoughts if this would work
> as
> > > good
> > > > or worse than the bottom just being bolted to the heatsink ?
> > > >
> > > > The transistor I have in mind is a 2N5038, a little higher wattage
> than
> > > the
> > > > 3055, I plan to have around 50watts constant disipation, it should
be
> > ok,
> > > > right ??
> > > >
> > > > Thanks
> > > > chris
> > >
> > > The actual die is mounted to the base of the package. Your scheme

> > *increases*
> > > *the thermal resistance from the junction to the case.*
> > >
> > > *Norm*
> > >
> >
> > *After rereading your post, I see an even worse situation than poor*
thermal
> > *conduction (which can be alleviated with an appropriate H/S and that's*
the
> > *fact that the transistor case isn't at ground potential. With*
traditional
> > *mounting, you can get nice mica (or other material) insulators to*
isolate
> > *the transistor's electric potential from the H/S but not (as far as I*
> *know)*
> > *with your scheme.*
> >
> > *Exactly what are you trying to accomplish?*
> >
> > *Norm*
> >
>
>
> *Its not a good idea then, I was just trying to see if I could avoid*
routing
> *the connection wires though the finn side of the heatsink. The device I*
> *have found is the 2N5038, its for a audio amplifier, its about the best*
gain
> *and wattage I can find, The only other transistor is the TIP3055 which is*
no
> *problem to mount, but lower gain and wattage, perhaps someone where knows*
> *of a good gain transistor ? 5amps 80V 100W or there about with a good*
gain,
> *more there better I guess.*
>

A little more expensive but good performance in the MJ150xx series of power transformers. The complementary pair MJ15003/15004 are higher voltage than you need but especially good for high power audio amplifiers. They're still TO−3 but there's generally no real problem in routing wires through the heat sink if you protect them against rubbing and overheating by installing a gromet in the hole. The 3055 is an old workhorse, best for low frequency designs like subwoofers.

For TO−220 packages, consider a MOSFETs instead of bipolar output stage −− there are some really good medium power units available in this package.
Norm