

Re: Driving an OP AMP input with no VCC

Source: <http://sci.tech-archive.net/Archive/sci.electronics.design/2006-11/msg01711.html>

- *From:* Jim Thompson <To-Email-Use-The-Envelope-Icon@xxxxxxxxxxxxxxxx>
 - *Date:* Wed, 08 Nov 2006 08:49:41 -0700
-

On Wed, 08 Nov 2006 15:39:48 GMT, "AJ" <itisme33@xxxxxxxxxxxxxxxx> wrote:

"Fred Bartoli"
<fred._canxxel_this_bartoli@xx> wrote in message [news:4551f17a\\$0\\$3869\\$426a74cc@xxxxxxxxxxxxxxxx](mailto:news:4551f17a$0$3869$426a74cc@xxxxxxxxxxxxxxxx)

Jim Thompson a écrit :

On Wed, 08 Nov 2006 02:18:41 GMT, "AJ"
<itisme33@xxxxxxxxxxxxxxxx>
wrote:

"Jim Thompson"
<To-Email-Use-The-Envelope-Icon@xxxxxxxxxxxxxxxx>
wrote in
message
news:kea2121ebbdkp37cb058475pnslsuunvdi@xxxxxxxx

On Wed, 08 Nov 2006
00:37:57 GMT, "AJ"
<itisme33@xxxxxxxxxxxxxxxx>
wrote:

"Jim
Thompson"
<To-Email-Use-The-Envelope-Icon@xxxxxxxxxxxxxxxx>
wrote
in
message
news:7h8112hib1ioqpss59k0lba5t7lrr8urk3@xxxxxxxx

On

Re: Driving an OP AMP input with no VCC

Tue,
07
Nov
2006
11:38:23
GMT,
"AJ"
<itisme33@xxxxxxxxxxxxxxxx>
wrote:

I
have
a
similar
question
to
one
posted
a
few
days
ago.
I
am
thinking
of
driving
an
OP
AMP
running
at
5V
configured
as
a
follower
with
a
4.0V
input
via
a
10K
and
there
could
be
times
where

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Vcc
is
removed
while
the
input
remains.

Is
it
possible
that
this
could
damage
the
IC
and
should
I
use
a
74LCX541
buffer
as
previously
discussed?

Best
regards,

AJ

Depends
on
the
OpAmp.
Read
the
maximum
input
voltage
spec.
If
it
defines
maximum
input
as
a

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relationship
with
VCC,
then
you
may
have
problems.

Be
more
precise
in
you
question...
OpAmp
type,
etc.

...Jim
Thompson

I am using
and
MCP6044
running at
5V and I
have the
input
clamped via
BAT54S
diodes to a
3.3V rail
and ground.
The
problem is
that my
board may
lose
power while
an input
remains. I
have a TVS
on the 3.3V
rail to
prevent it
going above
3.3V but
this would
mean that
an input

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would be
clamped at
3.6V
while the
OP AMP's
Vcc would
be 0V.

Best regards

AJ

I am unable to view a data
sheet from Microchip's site.
Firefox just
hangs and sucks 100% CPU.
Sorry.

...Jim Thompson

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| James E.Thompson, P.E. |
mens |
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et |
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I love to cook with wine.
Sometimes I even put it in
the food.

Thanks anyway mate, I am not committed to
the MCP6044, can you recommend
one that would be suitable for my
application or tell me what I should
be looking for?

Best regards

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AJ

All inputs and outputs..... VSS ?0.3 V to VDD +0.3 V

I think you will find most, if not all OpAmps have this restriction, so you need some way to protect it.

Post your schematic on a.b.s.e and everyone here will take a look.

...Jim Thompson

So it's time for some update.
Have a look at "over the top" opamps or comparators like LT1716 or LT1782...
Bias current is going high over the supply rail, but it is OK for some applications.

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Thanks,
Fred.

Here is a link to the schematic to make things a bit clearer...
http://61.9.815.52/OP_IN.JPG

^^^
?
?

. The output connects to a PIC analogue input and the idea is to be able to detect a high, low or float condition. The MCP6044 has VSS ?0.3 V to VDD +0.3 V so maybe I will be ok with this configuration. I have done a bit of testing and I haven't blown an OP yet.

I have seen these "over the top" OP's, didn't think of them, thanks for the suggestion.

Best regards,

AJ

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...Jim Thompson

—
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