

Fluorescent 12V Dimmers

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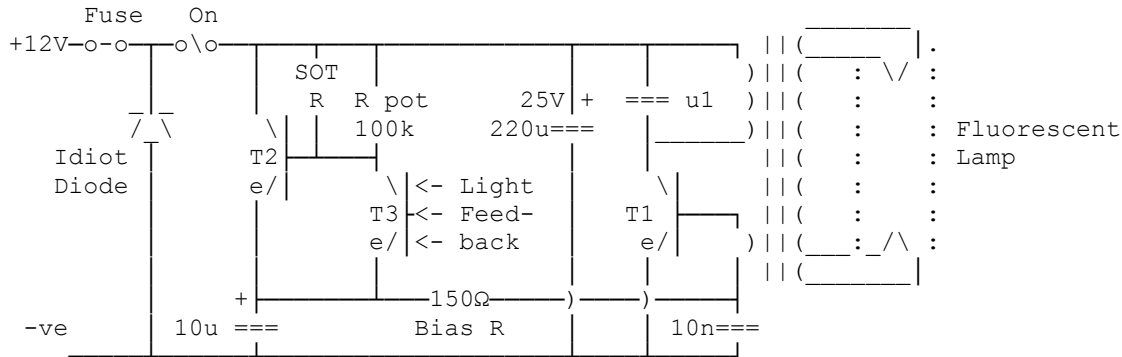
By G8MNY

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(8 Bit ASCII Graphics use code page 437 or 850)

NEED

For /P operation a 12V fluorescent lamp is often too bright once your eyes get acclimatised to the dark. This not only annoyingly attracts all flying moths in the area, but also drains your battery more than needed. Here is a simple modification that should work on most simple lamp designs.



HOW IT WORKS

T1 is the usual self oscillating power switching NPN (TAB or 2N3055). Instead of say a 220Ω bias R to +12V, a lower value 150Ω is used in series with a variable voltage/current supply. This consists of a switched volume control pot (eg. small edge wheel type) that also turns the lamp on, the pot is wired as a variable R to be at minimum resistance on turn on, to ensure the lamp lights.

The current through this variable R controls the base drive of T2 (BC107), but this drive can be shorted out by an optical NPN T3 (eg. metal case TO92 NPN with the top cut off). The optical feedback regulates on low brilliances only, tending to reduce any flicker. T3 needs an aperture so see the lamp or to be placed next to the tube to see its light.

Adjust the maximum value of the variable R with fixed 'Select On Test' R in parallel to get a good no off dimming action. Try 47k - 2M SOT as needed.

RFI

If the inverter does not have a 220uF across the 12V, do add one, as it does reduced the pulse current on the wiring (aerial). Do not put the fluorescent lamps near aerials as it can make a good RF mixer as well as noise sources!

LAMP LIFE

Using a dimmed lamp may also extend lamp life, that is surprisingly sort on these single ended pulse DC lit lamps. Remember to swap the lamp around to wear out the other electrode to extend lamp life!

Y don't U send an interesting bul?

73 de John G8MNY @ GB7CIP