

Cheap Battery/12v LED Light

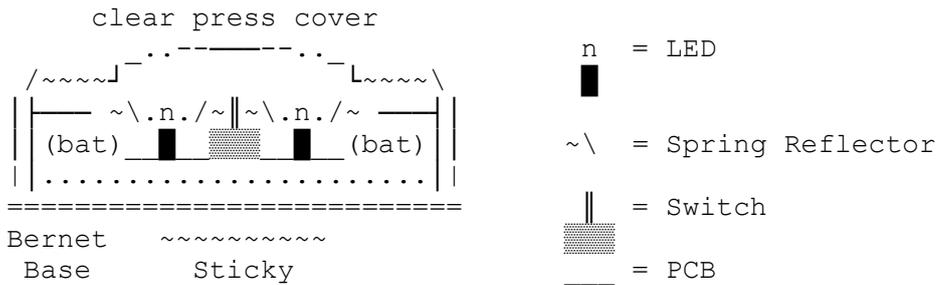
By G8MNY

(Updated Aug 13)

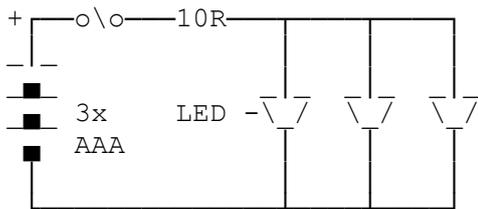
(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)

Recently I discovered the "99p shop" & "Poundland" discount shops are still selling twin packs of 4.5V self contained 3 LED battery lights for 99p (~1.5eu/\$). Is this less than parts cost? I have seen these lamps in 3 packs for far more in other shops!

Inside there is a proper locking "tack" switch, 3 bright LEDs, 10R, flexible reflecting housing button spring, & stick up 3x AAA in the round battery box.



White LEDs are about 3.5V, so a 10R is in series with a 3 paralleled LEDs on 4.5V to limit the current.

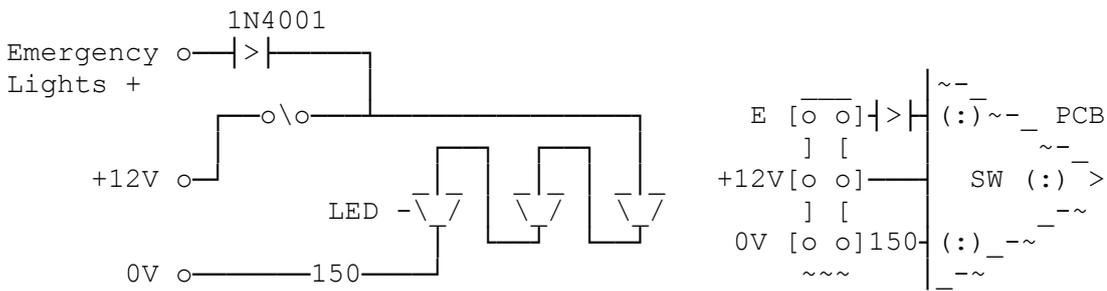


The lights are quite useful as they are. They draw some 90mA from the 3x AAA cells. But I found the double sided sticky quite poor. So I intend to screw the base in place & attach the body.

MODIFICATION FOR 12V & EMERGENCY LIGHTING.

This is a fiddly job! The case is lightly glued around the edge & a small screw driver/knife inserted between the cover & black inner & carefully worked around will crack the glue, & separate 2 undamaged parts.

Putting the LEDs in series is done by tuning the middle one around & cutting 2 of the paralleling PCB tracks. Then remove the 10R & add a 150R to the -ve lead. This will then give about the 25mA @ 13.8V. And by putting a diode input after the switch, an Emergency lighting option can be added. Many of these low power lights can easily be run from a floated battery on mains with a mains fail relay.

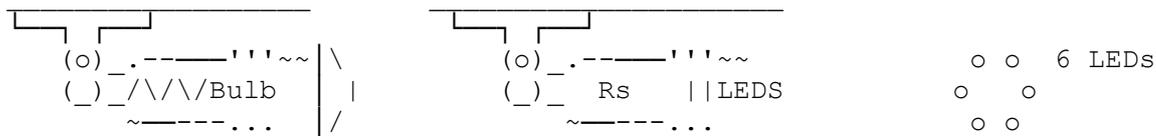


To make room for a small 3 way block connection, with a soldering iron I perforated & cut a hole in the middle of one of the AAA battery holders, to suit the connector. With care the 3 holes for the battery mounting plate still work. The PCB is held firmly back in place on the cut battery mount with heat glue & the lamp tested, then the whole lot is glued back together.

Running permanently these LEDs light have a short life, as they get quite a bit dimmer after 6 months on!

MAP LIGHT

Using some strip board pressed into the chrome holder, I replaced a hot dim power hungry lensed lamp with 6 LEDs. I cut away the copper track away at the edge to make sure there was no shorting to the case.



As this is used for illuminating my radio while /M (14V battery), I used 2 120R as the series Rs, one for each chain of 3 LEDs.

12V SAFETY

Make sure the 12V is fused (e.g. 1A) & there is no fire risk from trapped wires etc.

If you find the light is too directional, just lightly scratch LED lens heads or lamp cover to defuse more of the light.

Why Don't U send an interesting bul?

73 de John G8MNY @ GB7CIP