

LED Driver 10V/1A in EmitterSwitchingTechnique instead of a Power MOS Transistor.

Characteristics:

Designation: LED Driver 10W

Application: Power Supply 10W Power LED

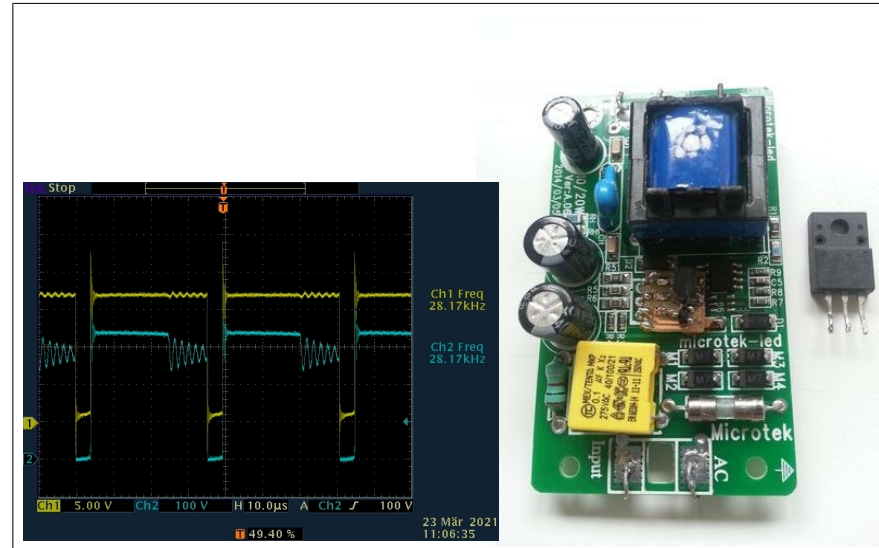
Power: 100-240V, 10V/1A

Prize: low cost

Special: LED Driver in EmitterSwitching-Technique instead of a Power MOS Transistor. Very robust and reliable.

Fig. left: LED Driver open, Original Power MOS Transistor TO220 nearby

Fig. far left: Signals, U_{CE} blue, U_B yellow.



Description:

In the case of the examined LED driver with a Power MOS switching transistor and a control IC, the expensive Power MOS transistor was replaced by a low-cost EmitterSwitchingTechnique stage. The control IC takes over all functions as in the original solution with the Power MOS transistor. Power MOS transistors are relatively expensive for this type of application because they must be designed for UDS 600V and more and for currents up to 4A so that the switching losses are low, i.e. the transistor must be oversized and is therefore expensive. In contrast, the switching transistor in EmitterSwitchingTechnique is very inexpensive. Figure 1 shows the signals, Figure 2 the basic circuit of the emitter switching stage with a MOS transistor in the emitter of the bipolar high-voltage power switching transistor.

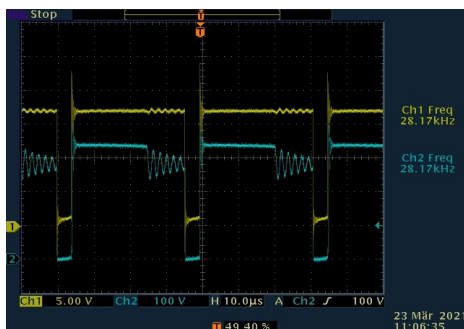


Fig 1: Signals U_{CE} blue, U_B , yellow.

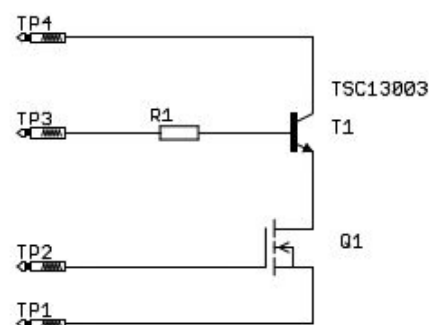


Fig 2: EmitterSwitchingTechnique, Basic