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FEEDBACK. The connection between the optocoupler and mains voltage is made using four 0.25-W resistors connected in series. For safety you should always use 0.5-W resistors, which are suitable for operation at 250 V DC. The type of optocoupler specified and its PCB layout are also questionable. A VDE certified optocoupler with a wider 0.4" (10.16 mm) lead separation together with a slot in the PCB would provide air separation between the high and low voltage leads of the optocoupler, as well as increase the creepage path length.

Volker Schulze

The 0.25-W resistors used here are specified to handle 250 V. There is no issue from the safety point of view using these four series-connected resistors.

The optocoupler specified in this design is UL, CSA and IEC/EN/DIN EN 60747-5-2 compliant (The last spec referred to here was introduced on the 1st January 2004 and replaces the VDE 0884 safety standard).

We always use a creepage distance of 6 mm from tracks carrying AC line voltages on our PCBs but it wouldn't hurt to also cut a slot in the board under the optocoupler.

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