

Symmetrical power supply

Shown is a simple power supply having symmetrical outputs and overload protection such that if a heavy load or short circuit is applied to either output both switch off rapidly. Each transistor derives its forward bias from the opposite supply rail and while the transistors are in saturation an increasing load will cause the output to fall under the regulation of the transformer. With a further increase in load the transistors come out of saturation and eventually remove each other's forward bias. If the trip circuit

is used with an active power supply having negligible output resistance then switch off occurs solely to the transistors coming out of saturation. The zener voltage must be between V_o and $2V_o$ and the value of R

$$\leq \frac{h_{FE}(2V_o - V_Z - 0.7)}{I_L}$$

where I_L is the maximum load current required.

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