

BATTERY CHARGER

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The circuit is capable of supplying either a trickle (50 mA) or high-current (1-A) charge. You can select either charging method or an automatic mode that will first trickle charge a battery if it is particularly low before switching to high-current charging.

Description If the battery's voltage is low, Zener-diode D5 will not conduct sufficient current to produce a voltage drop across R6 to turn Q2 on. With Q2 off, R4 pulls the base of Q1 high, turning it on. That activates K1. With K1 active, the only thing between the battery and the power supply is R2 and D4 (which prevents current from flowing through the circuit from the battery). Once the battery charges a bit, the current through D5 increases, causing a voltage drop across R6 that is of sufficient magnitude to turn on Q2. Transistor Q2, in turn, grounds the base of Q1, keeping it off. With Q1 off, K1 remains in its normally closed state. That places R1 in series with the battery, thereby reducing the current to a trickle.