

CONTROL CIRCUIT FOR PROTECTING AN EXCESS DISCHARGE OF A BATTERY**ABSTRACT OF THE DISCLOSURE**

An overcharge or excess discharge can be avoided by an electronic switch formed of a single transistor. A positive electrode of a battery cell (3) is connected to a positive connection terminal (1). A negative electrode is grounded and connected through a transistor (4) to a negative connection terminal (2). When a terminal voltage of the battery cell (3) is a detection voltage or greater, an output from a detecting circuit (5) is supplied through a series circuit of resistors (6), (7) and a positive temperature coefficient resistor (PTC) (8) to the base of the transistor (4) and supplied to power supply terminals of comparators (9), (10). Further, voltage-divided outputs of resistors (11), (12) and the connection terminal (2) are respectively connected through resistors (13), (14) to positive and negative input terminals of the comparators (9), (10). The outputs of the comparators (9), (10) are connected through transistors (15), (16) to a junction between the resistors (6) and (7). The output from the comparator (9) is grounded through a transistor (17) and the base of the transistor (17) is grounded and connected to the connection terminal (2) through resistors (18), (19).

Figure 1