

# **Battery cabinet reverse communication high voltage**





## Overview

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Which MOSFET is used for high-side reverse-battery protection?

Either an N-channel or a P-channel MOSFET can be used for high-side reverse-battery protection. An N-channel device provides the lowest power loss topology by virtue of its low  $R_{DS(ON)}$ . However, a gate voltage greater than the battery voltage is needed to turn the MOSFET on.

What is reverse battery polarity?

Reverse battery, often referred to as reverse polarity, is extremely common in automotive applications. This application report details the reverse battery mechanism, impact and protection of TI smart high side switches and the MCU as well.

How is reverse battery protection selected for a gate driver?

The reverse battery protection circuitry is selected for a given gate driver based on the structure of the gate driver—the gate driver has either an internal charge pump, VCP, an internal regulator charge pump, CP1, or bootstrap capacitor, CBOOTX, terminals, as presented in Table 2.

What is a reverse battery protection scheme?

Hence, a reverse battery protection scheme that features very low power loss is required. Another feature of this scheme is that, if the battery polarity is reversed, the body diodes included in each MOSFET become forward biased.



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ABSTRACT Reverse battery, often referred to as reverse polarity, is extremely common in automotive applications. This application report details the reverse battery ...

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REVERSE BATTERY PROTECTION CIRCUIT A simplified block diagram of the reverse battery protection systems using the charge pump voltage, VCP, terminal to drive ...

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Consequently some form of electronic blocking or reverse-polarity voltage protection is necessary, not solely to safeguard the battery itself but to protect the ever ...

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The system includes two 30kW Sol-Ark inverters and high-voltage Pytes HV48100 batteries, with a total of 32 batteries Battery reversal can be fatal to portable equipment. However, ...

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