

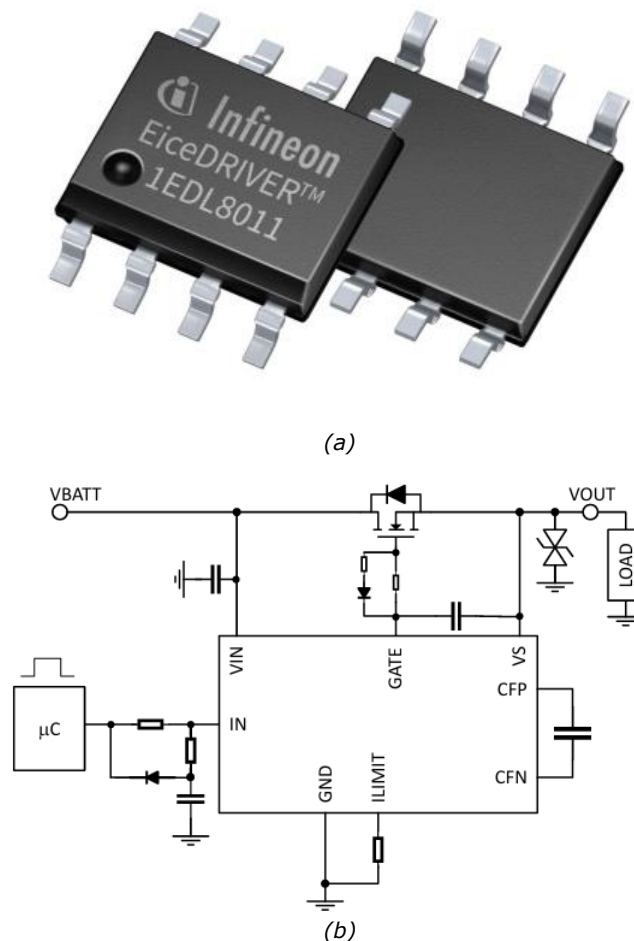
## High-Side Gate Driver Protects Battery-Driven Applications

[Infineon Technologies'](#) EiceDRIVER 1EDL8011 is a high-side gate driver designed to protect battery-powered applications such as cordless power tools, robotics, e-bikes, and vacuum cleaners in the event of a fault. The device provides fast turn-on and turn-off of high-side n-channel MOSFETs with its high gate-current capabilities.

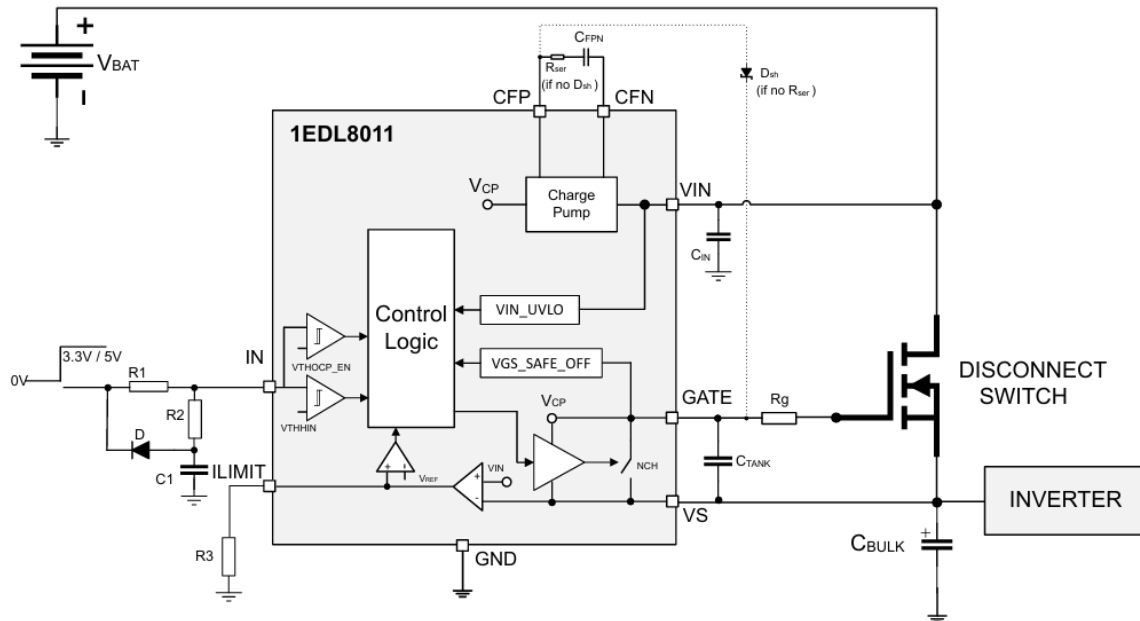
In battery-powered applications such as motor drives and switched-mode power supplies (SMPSs), the power supply architecture often requires that a module can be disconnected from the main supply rail when a fault occurs in that module. To achieve this functionality, it is common to use high-side disconnect switches (e.g. MOSFETs) to prevent a load short circuit from affecting the battery. The EiceDRIVER 1EDL8011 addresses this requirement (see Figs. 1 and 2).

The 1EDL8011 has a wide operating voltage range of 8 V to 125 V and a high gate-sinking current of up to 1 A, allowing for efficient switching. Additionally, the product has an extremely low off-mode quiescent current of 1  $\mu$ A, helping to minimize power consumption in sleep mode. The device also includes a  $V_{DS}$  sense feature that is used to trigger an overcurrent shutdown by monitoring the drain-to-source voltage of the disconnect MOSFET. The driver is available in a DSO-8 package, making it well suited for space-constrained designs.

The 1EDL8011 is available now. For more information, see the 1EDL8011 [page](#).



*Fig. 1. The EiceDRIVER 1EDL8011 provides fast turn-on and turn-off of high-side n-channel MOSFETs with its powerful gate-current capabilities. For battery-powered applications, the IC is used to manage inrush current and protects in case of faults. A package photo (a) and typical application diagram (b) are pictured here.*



*Fig. 1. System functional block diagram. The device consists of an integrated charge pump with an external capacitor to provide strong start-up. The internal charge pump provides the MOSFET gate voltage when the operating input voltage is low. The gate driver IC manages inrush current and provides fault protection. Undervoltage lockout (UVLO) protection at input voltage prevents the device from operating under hazardous conditions. It also includes overcurrent protection (OCP), adjustable current setting threshold, time delay and a safe start-up mechanism with flexible blanking during MOSFET turn-on transitions.*