

THIS SHEET HAS BEEN
REPLACED

INTEGRATED MOSGATED POWER
SEMICONDUCTOR DEVICE WITH HIGH NEGATIVE
CLAMP VOLTAGE AND FAIL SAFE OPERATION

ABSTRACT OF THE DISCLOSURE

A high side switch having a MOSgated power device has a control circuit which contains a control MOSFET which is connected between the gate and source of the MOSgated power device. The input signal to turn the power device on and off is connected to a level translator circuit which is, in turn, connected to an inverter circuit which drives the gate of the control MOSFET. The control MOSFET then prevents the turn on of the power MOSFET during the turn-off process. A high negative clamp voltage causes a higher di/dt reduction of current during turn off to shorten the turn-off time. The power MOS device cannot be turned on whenever V_{cc} is low and the output voltage is negative.

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