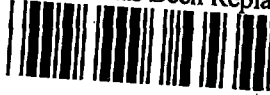


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REPLACED

POWER MOSFET WITH OVERCURRENT
AND OVER-TEMPERATURE PROTECTION AND CONTROL
CIRCUIT DECOUPLED FROM BODY DIODE

ABSTRACT OF THE DISCLOSURE

An NPN transistor is added to the chip of a power integrated circuit which contains a power MOSFET and a control circuit in a common chip. The NPN transistor is coupled between the P well containing the integrated circuit components and the N type substrate of the chip and is turned on in response to the forward biasing of the body diode of the power MOSFET. A depletion mode control MOSFET transistor is coupled, through a fault latch circuit, to the power MOSFET gate and is in series with a capacitor. The node between the power MOSFET gate and capacitor is decoupled from the N type substrate when the bipolar transistor turns on, to turn off the power MOSFET.