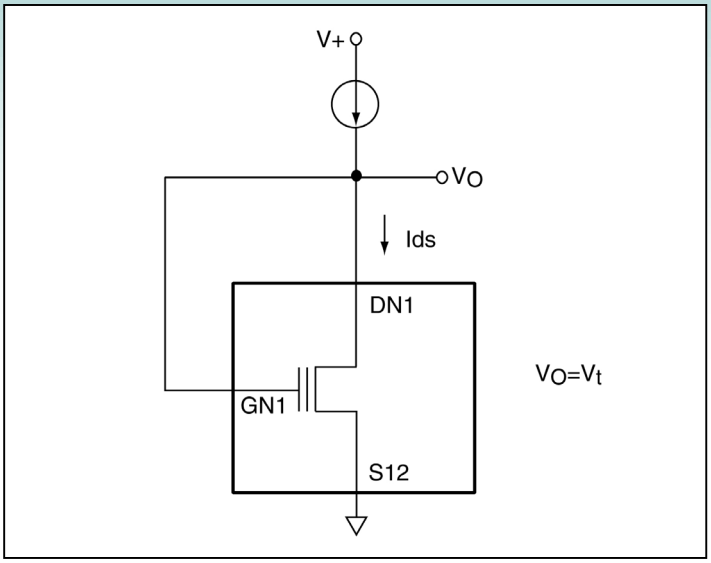
Category: MOSFET **CIRCUIT IDEAS FOR DESIGNERS** Schematic no. fet_11102.0

Basic EPAD® MOSFET Connection with Current Source Drive



Description

This circuit shows a basic diode–connected MOSFET connection driven by a constant current source. The drain terminal is shorted to the gate terminal. When connected in this manner, this circuit produces an output voltage VO. The drain current Ids that flows through the MOSFET increases exponentially with increases of VO, with Ids vs. VO characteristics similar to that of a forward biased diode. Hence the term "diode-connected" configuration. This type of circuit is very useful to clamp or control the output to a certain voltage level and not allowing VO to increase rapidly with current increase. When a constant current of 68μA is applied, the resultant output voltage tend to be temperature stable. This results in a voltage about 550mV above threshold voltage of the EPAD MOSFET. At other voltage or current levels, the tempco changes from positive to negative as a function of drain currents. By selecting and setting a constant current source level, a voltage output with a certain positive, zero or negative temperature coefficient can be maintained.

Recommended Components

¼ ALD1108xx; ½ ALD1109xx; or any of the EPAD MOSFETs

Other Related Circuit Ideas

Schematic no. fet_11100.0 Basic MOSFET/EPAD MOSFET Inverter Circuit
Schematic no. fet_11101.0 Basic MOSFET/EPAD MOSFET Diode-Connected Circuit