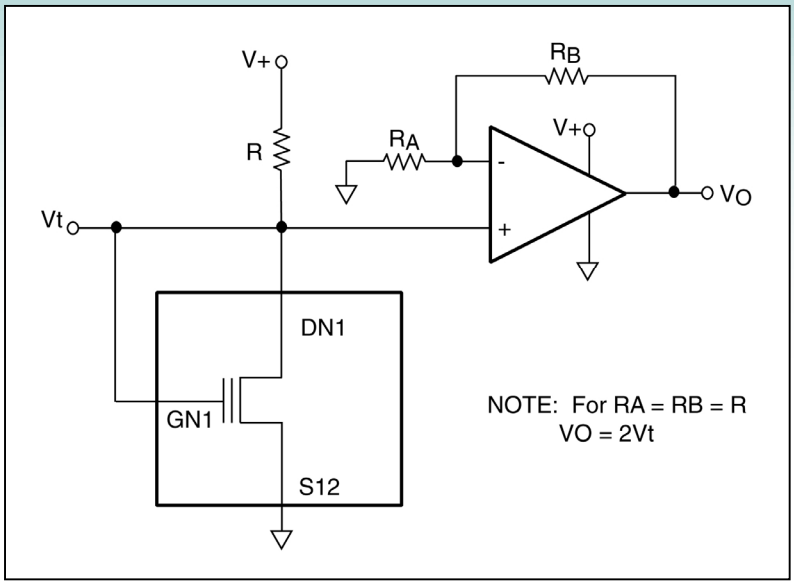
Category: MOSFET **CIRCUIT IDEAS FOR DESIGNERS** Schematic no. fet_11109.0

Diode–Connected (EPAD®) MOSFET with Buffer Amplifier Output



Description

This circuit is a diode–connected EPAD MOSFET with buffer amplifier set up in the non-inverting amplifier configuration. V_O is equal to V_T multiplied by the gain $G=1+R_B/R_A$. The drain DN1 of the EPAD MOSFET is shorted to the gate terminal GN1. When connected in this manner, this circuit produces a drain current Ids that flows through the MOSFET which increases exponentially with increases of V_O, with Ids versus V_O characteristics similar to that of a forward biased diode. V_O is set by the selection of bias resistor R and the specific EPAD MOSFET part number. At a voltage about 55mV above threshold voltage of the EPAD MOSFET, or at 68μA Ids, the V_O tends to be temperature stable. At other voltage or current levels, the tempco changes from positive to zero to negative as a function of drain current. This tempco characteristic is determined by appropriate selection of resistor value of R.

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

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