



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. Vo is equal to VT multiplied by the gain G=1+RB/RA. 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 Vo, with Ids versus Vo characteristics similar to that of a forward biased diode. Vo 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  $68\mu$ A Ids, the Vo 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.

For full schematic diagram and notes, please register and login at aldinc.com

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