Precision Low Voltage P-Channel Cascode Current Sources

Description

This is a multiple p-channel cascode current source with gates and drains diode-connected. Cascoding buffers the current source set by RSET from the loadings, so that variations of the load have minimal impact on other loads and the current source itself. Matched MOSFETs in this circuit produce a constant current ISOURCE at the output for different loads. Matching full scale readings produce best results when RLOAD = RSET. RLOAD and RSET resistor types, their temperature coefficients and tolerances affect the accuracy readings directly, so for best results match RSET resistor characteristics to RLOAD characteristics. Notice when connecting multiple device packages to build a larger array of cascode current sources with multiple outputs, the first devices in a cascode circuit should be from one IC package, and then the second device in the cascode circuit should be from a second package. Thus, matching across the circuits is preserved with best same chip error cancellation possible.

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