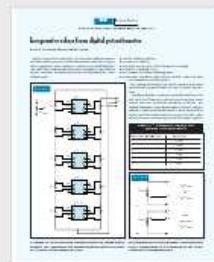


06DI.QRK

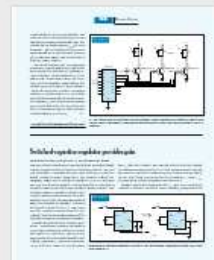
Datei Ansicht Hilfe



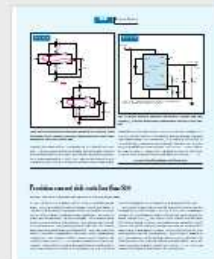
Es wurden keine Übereinstimmungen gefunden. <http://www.edn.com/archives/1998/031398/06di.pdf>



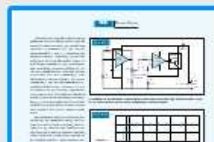
1



2



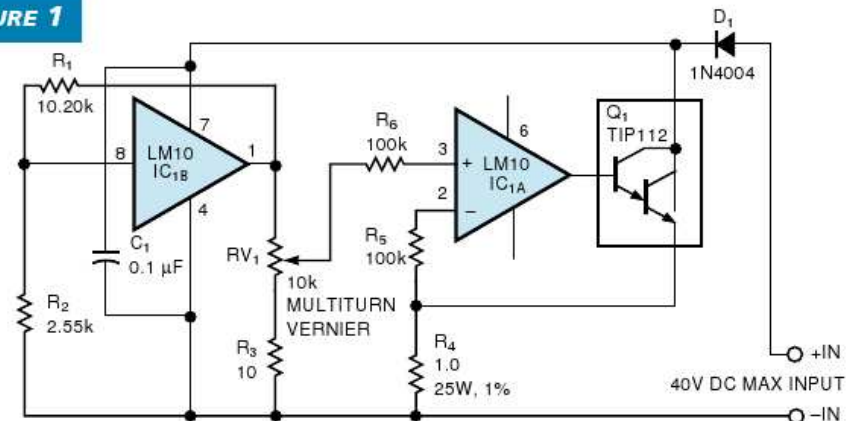
3



Although the current-control mechanism allows the output of the current source to approach zero, the additional currents consumed by the circuit (approximately 400 μ A) establish the baseline current. Therefore, you set the bottom of the potentiometer via R_3 to start at approximately 1 mA. Under normal operation, a current setting of 1 to 300 mA maintains the setpoint within 0.5% with 3 to 40V compliance. Currents above 300 mA require 3 to 5V for compliance. The circuit maintains a 1A current within 300 μ A from 4.9 to 40V or within 0.001% tolerance (Figure 2). You could lower the initial regulation point by one diode junction by removing D_1 , whose sole purpose is to prevent destruction of the active circuitry when you connect the power supply backward.

The principal sources of error in the circuit are the amplifier offset, the tolerance of the reference voltage, the tolerance of R_1 , and the fact that the current includes various branch currents other than the controlled current in the sensing resistor. These branch currents add up to approximately 400 μ A, or roughly five times lower than the offset-voltage error. You can consider

FIGURE 1



A handful of inexpensive parts builds a precision current sink that provides 1-mA to 1A sink current over a wide compliance-voltage range.

FIGURE 2

