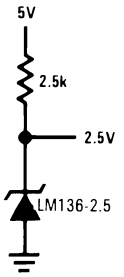
Typical Applications

2.5V Reference



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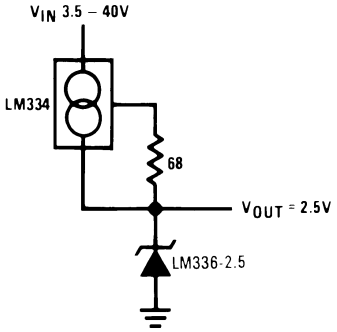
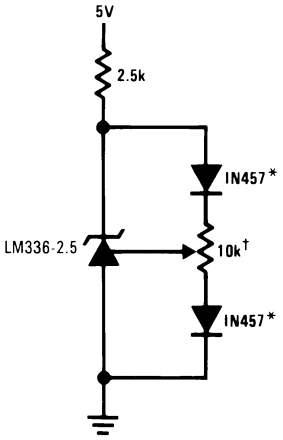
Wide Input Range Reference



00571511

2.5V Reference with Minimum Temperature Coefficient



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†Adjust to 2.490V

*Any silicon signal diode

Application Hints

The LM136 series voltage references are much easier to use than ordinary zener diodes. Their low impedance and wide operating current range simplify biasing in almost any circuit. Further, either the breakdown voltage or the temperature coefficient can be adjusted to optimize circuit performance.

Figure 1 shows an LM136 with a 10k potentiometer for adjusting the reverse breakdown voltage. With the addition of R1 the breakdown voltage can be adjusted without affecting the temperature coefficient of the device. The adjustment range is usually sufficient to adjust for both the initial device tolerance and inaccuracies in buffer circuitry.

If minimum temperature coefficient is desired, two diodes can be added in series with the adjustment potentiometer as shown in *Figure 2*. When the device is adjusted to 2.490V the temperature coefficient is minimized. Almost any silicon signal diode can be used for this purpose such as a 1N914, 1N4148 or a 1N457. For proper temperature compensation the diodes should be in the same thermal environment as the LM136. It is usually sufficient to mount the diodes near the LM136 on the printed circuit board. The absolute resistance of R1 is not critical and any value from 2k to 20k will work.

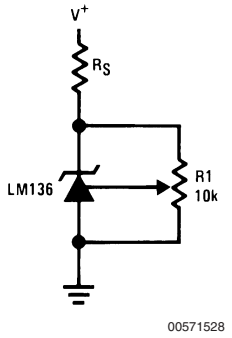


FIGURE 1. LM136 With Pot for Adjustment of Breakdown Voltage (Trim Range = ±120 mV typical)

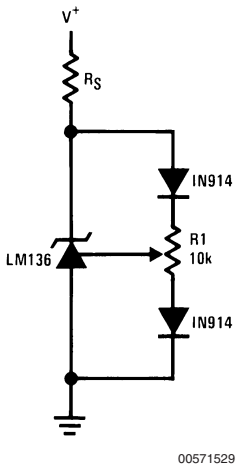
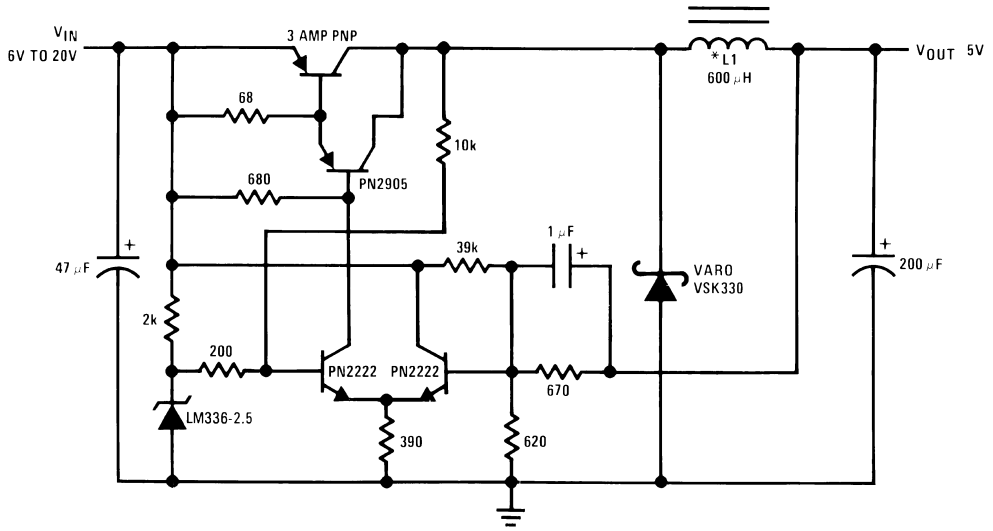


FIGURE 2. Temperature Coefficient Adjustment (Trim Range = ±70 mV typical)

Application Hints (Continued)

Low Cost 2 Amp Switching Regulator†



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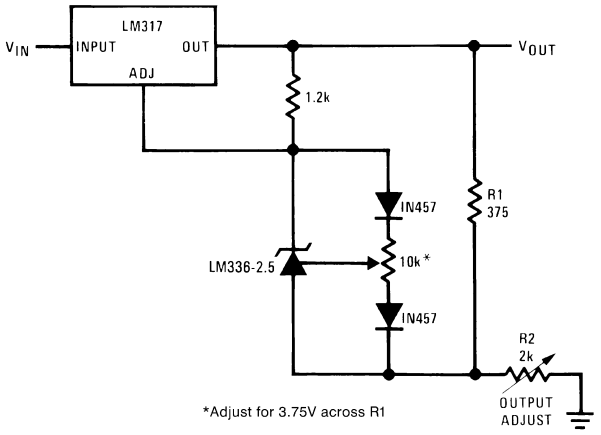
*L1 60 turns #16 wire on Arnold Core A-254168-2

†Efficiency ≈ 80%

Precision Power Regulator with Low Temperature Coefficient



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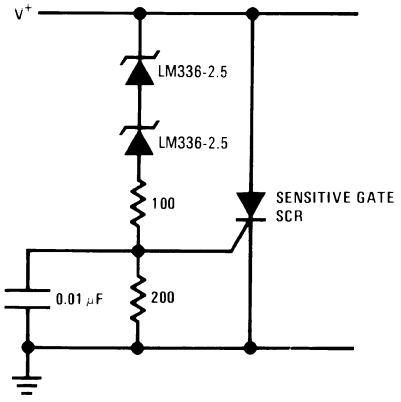
5V Crowbar



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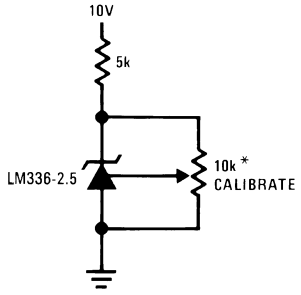
Trimmed 2.5V Reference with Temperature Coefficient Independent of Breakdown Voltage



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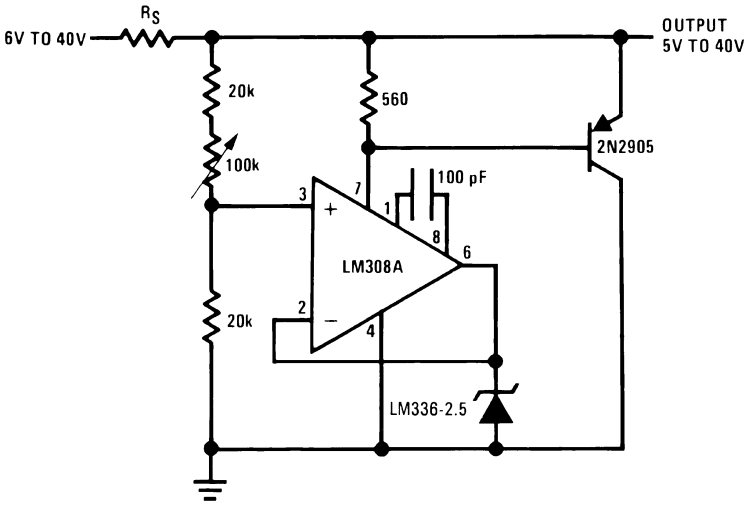
*Does not affect temperature coefficient

Application Hints (Continued)

Adjustable Shunt Regulator



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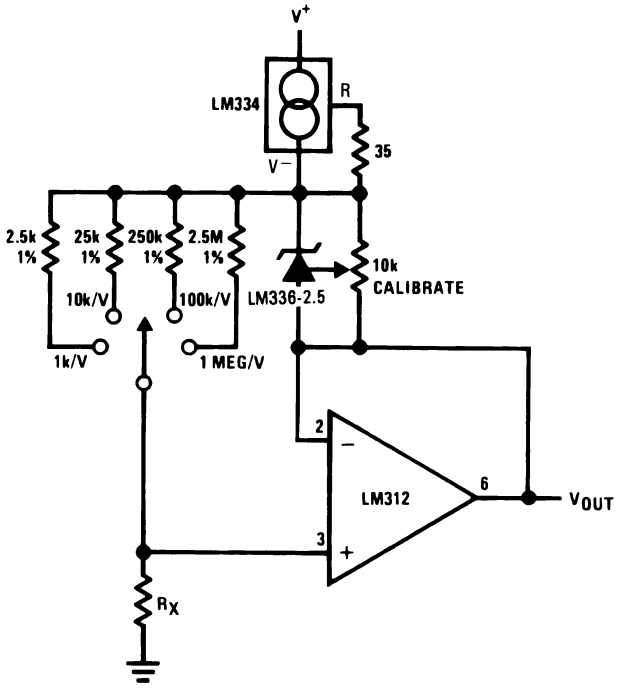
Linear Ohmmeter



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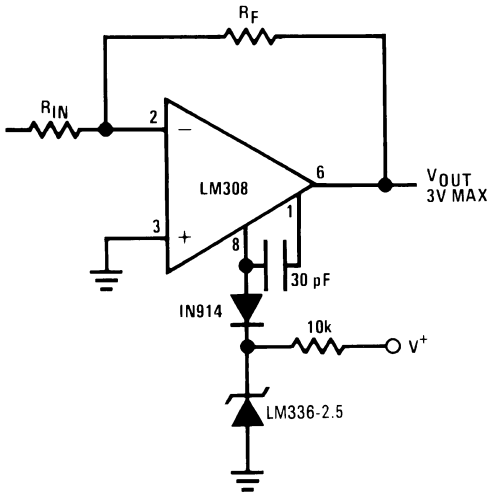
Application Hints (Continued)

Op Amp with Output Clamped



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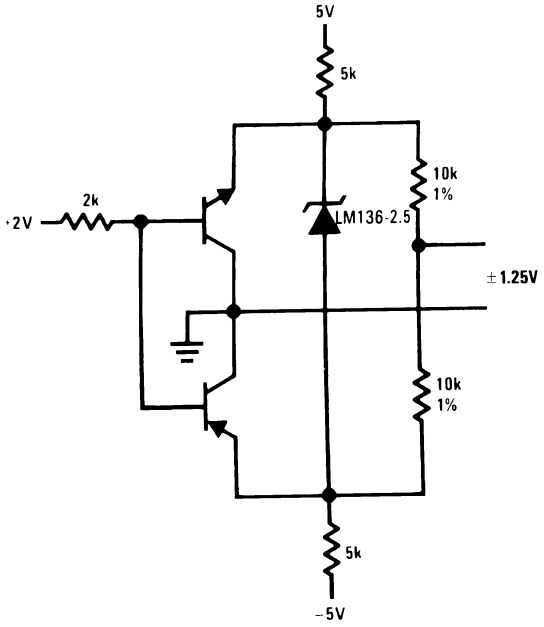
Bipolar Output Reference



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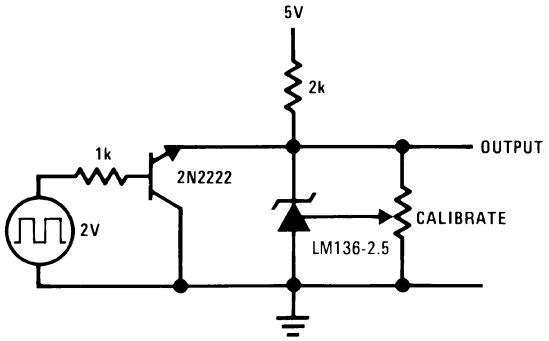
2.5V Square Wave Calibrator



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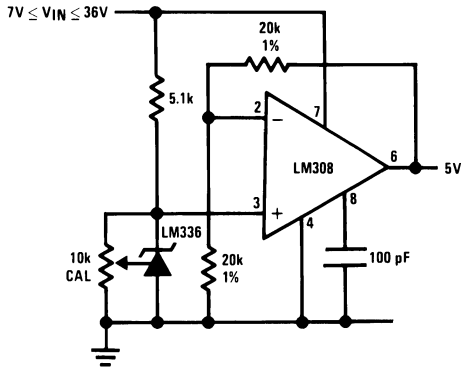
5V Buffered Reference



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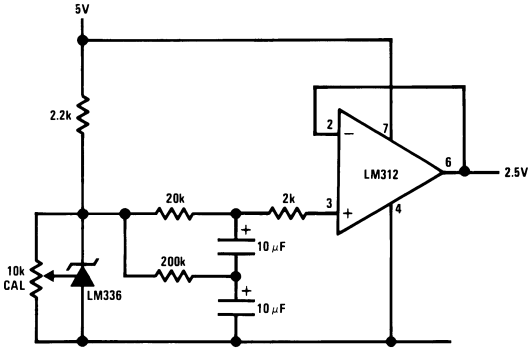
Low Noise Buffered Reference



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