

FEATURES

- 0.4% Initial Tolerance Max
- *Guaranteed* Temperature Stability
- Maximum 0.6Ω Dynamic Impedance
- Wide Operating Current Range
- Directly Interchangeable with LM336 for Improved Performance
- No Adjustments Needed for Minimum Temperature Coefficient

APPLICATIONS

- Reference for 5V Systems
- 8-Bit A/D and D/A Reference
- Digital Voltmeters
- Current Loop Measurement and Control Systems
- Power Supply Monitor

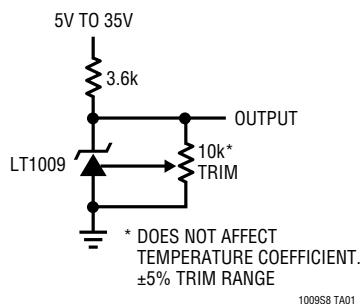
DESCRIPTION

The LT1009 is a precision trimmed 2.5V shunt regulator diode featuring a maximum initial tolerance of only $\pm 10\text{mV}$. The low dynamic impedance and wide operating current range enhances its versatility. The 0.4% reference tolerance is achieved by on-chip trimming which not only minimizes the initial voltage tolerance but also minimizes the temperature drift.

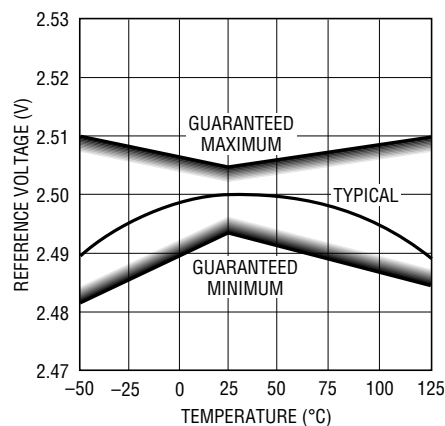
Even though no adjustments are needed with the LT1009, a third terminal allows the reference voltage to be adjusted $\pm 5\%$ to calibrate out system errors. In many applications, the LT1009 can be used as a pin-to-pin replacement of the LM336-2.5 and the external trim network eliminated.

TYPICAL APPLICATION

2.5V Reference



Output Voltage



ABSOLUTE MAXIMUM RATINGS

Reverse Current 20mA
 Forward Current 10mA
 Operating Temperature Range 0°C to 70°C
 Storage Temperature Range -65°C to 150°C
 Lead Temperature (Soldering, 10 sec) 300°C

PACKAGE/ORDER INFORMATION

	ORDER PART NUMBER
	LT1009S8
	PART MARKING
	1009

ELECTRICAL CHARACTERISTICS $V_{IN} = 3V$, Military or Commercial Version

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
V_Z	Reverse Breakdown Voltage	$T_A = 25^\circ C, I_R = 1mA$	2.49	2.50	2.51	V
$\frac{\Delta V_Z}{\Delta I_R}$	Reverse Breakdown Change with Current	$400\mu A \leq I_R \leq 10mA$		2.6	10	mV
r_Z	Reverse Dynamic Impedance	$I_R = 1mA$		0.2	1.0	Ω
$\frac{\Delta V_Z}{\Delta Temp}$	Temperature Stability Average Temperature Coefficient	$T_{MIN} \leq T_A \leq T_{MAX}$ $0^\circ C \leq T_A \leq 70^\circ C$ (Note 1)		0.4	1.4	Ω
$\frac{\Delta V_Z}{\Delta Time}$	Long-Term Stability	$T_A = 25^\circ C \pm 0.1^\circ C, I_R = 1mA$		1.8	4	mV
				15.0	25	ppm/°C
				20		ppm/kHr

The ● denotes specifications which apply over the full operating temperature range.

Note 1: Average temperature coefficient is defined as the total voltage change divided by the specified temperature range.

PACKAGE DESCRIPTION Dimensions in inches (millimeters) unless otherwise noted.

**S8 Package
8-Lead Plastic SOIC**

