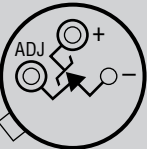
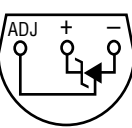


LM136-2.5/LM336-2.5

ABSOLUTE MAXIMUM RATINGS (Note 1)

Operating Temperature Range	LM136-2.5 (OBSOLETE) -55°C to 125°C	Lead Temperature (Soldering, 10 sec) 300°C
	LM336-2.5 0°C to 70°C	Reverse Current 15mA
Storage Temperature Range	 -65°C to 150°C	Forward Current 10mA

PACKAGE/ORDER INFORMATION

 BOTTOM VIEW H PACKAGE 3-LEAD TO-46 METAL CAN $T_{JMAX} = 150^{\circ}\text{C}$, $\theta_{JA} = 440^{\circ}\text{C/W}$ (NOTE 2) OBSOLETE PACKAGE Consider the Z Packages for Alternate Source	ORDER PART NUMBER	 BOTTOM VIEW Z PACKAGE 3-LEAD PLASTIC TO-92 $T_{JMAX} = 150^{\circ}\text{C}$, $\theta_{JA} = 160^{\circ}\text{C/W}$ (NOTE 2)	ORDER PART NUMBER
	LM136H-2.5 LM136AH-2.5 LM336H-2.5 LM336AH-2.5		LM336Z-2.5 LM336BZ-2.5

Consult LTC Marketing for parts specified with wider operating temperature ranges.

ELECTRICAL CHARACTERISTICS The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at $T_A = 25^{\circ}\text{C}$. (Note 2)

SYMBOL	PARAMETER	CONDITIONS		LM136/LM136A			LM336/LM336B			UNITS
				MIN	TYP	MAX	MIN	TYP	MAX	
V_Z	Reverse Breakdown Voltage	$T_A = 25^{\circ}\text{C}$, $I_R = 1\text{mA}$ LM136/LM336 LM136A/LM336B		2.440	2.490	2.540	2.390	2.490	2.590	V
				2.465	2.490	2.515	2.440	2.490	2.540	V
$\frac{\Delta V_Z}{\Delta I_R}$	Reverse Breakdown Change with Current	$400\mu\text{A} \leq I_R \leq 10\text{mA}$ $T_A = 25^{\circ}\text{C}$ $T_{MIN} \leq T_A \leq T_{MAX}$	●		2.6	6		2.6	10	mV
					3.0	10		3.0	12	mV
r_Z	Reverse Dynamic Impedance	$I_R = 1\text{mA}$ $T_A = 25^{\circ}\text{C}$ $T_{MIN} \leq T_A \leq T_{MAX}$	●		0.2	0.6		0.2	1.0	Ω
					0.4	1.0		0.4	1.4	Ω
$\frac{\Delta V_Z}{\Delta \text{Temp}}$	Temperature Stability	V_R Adjusted to 2.490V, $I_R = 1\text{mA}$, $T_{MIN} \leq T_A \leq T_{MAX}$ (See Figure 1)	●		12	18		1.8	6	mV
$\frac{\Delta V_Z}{\Delta \text{Time}}$	Long Term Stability	$T_A = 25^{\circ}\text{C} \pm 0.1^{\circ}\text{C}$, $I_R = 1\text{mA}$			20			20		ppm/kHr

Note 1: Absolute Maximum Ratings are those values beyond which the life of a device may be impaired.

Note 2: The LT1009 is an improved, low cost, pin for pin replacement for the "A" and "B" versions. For further information consult the LT1009 data sheet.

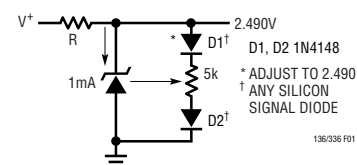
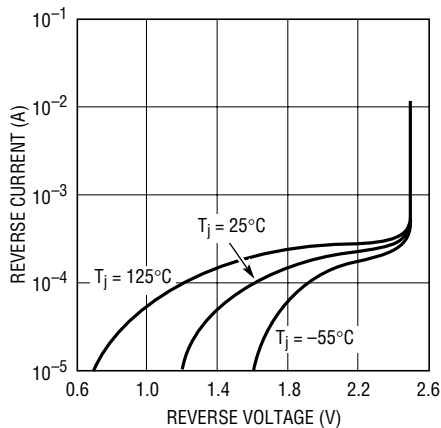


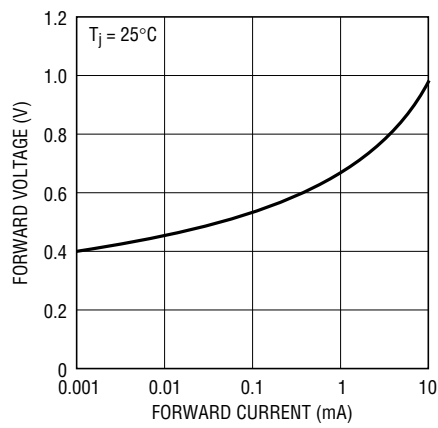
Figure 1. Adjusting the LM336 for Minimum Temperature Coefficient

TYPICAL PERFORMANCE CHARACTERISTICS

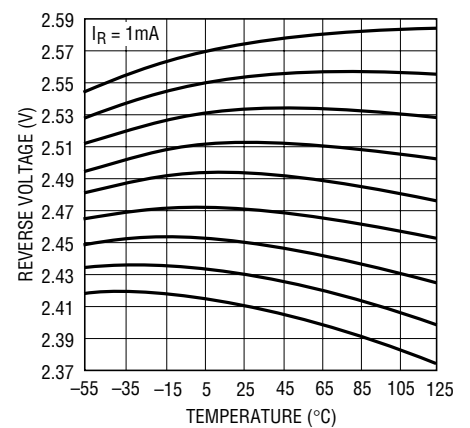
Reverse Characteristics



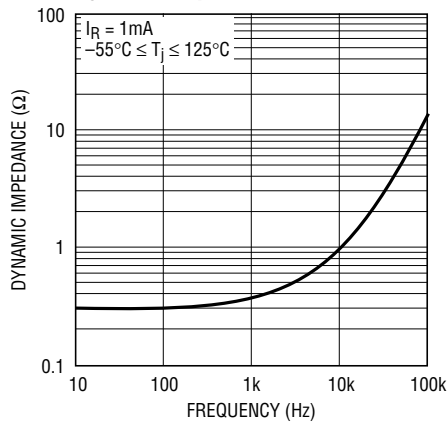
Forward Characteristics



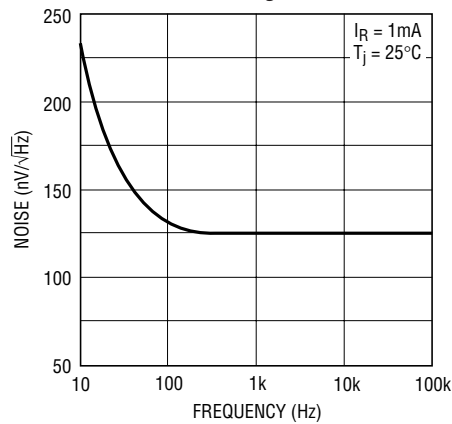
Temperature Drift



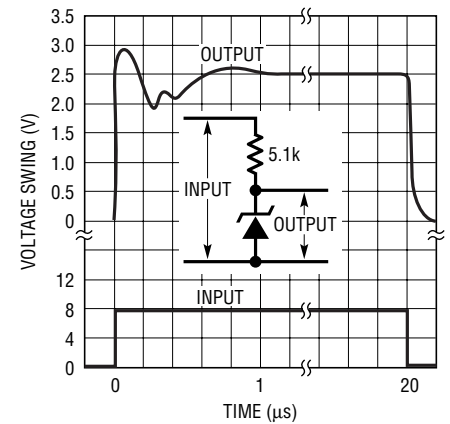
Dynamic Impedance



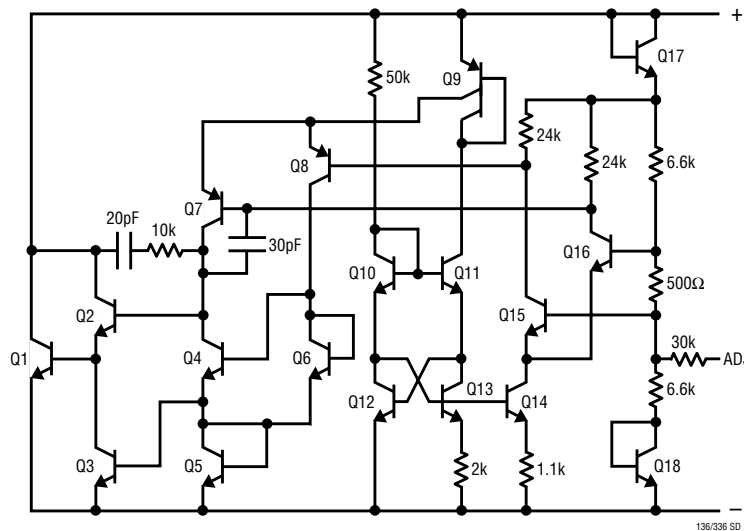
Zener Noise Voltage



Response Time



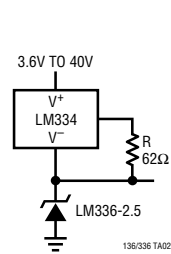
SCHEMATIC DIAGRAM



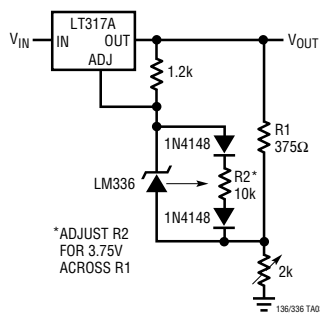
LM136-2.5/LM336-2.5

TYPICAL APPLICATIONS

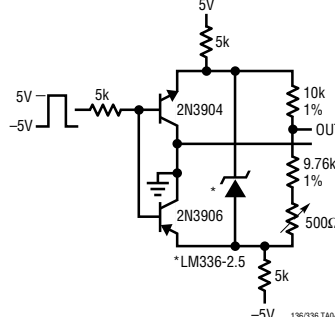
Wide Supply Range, Reference



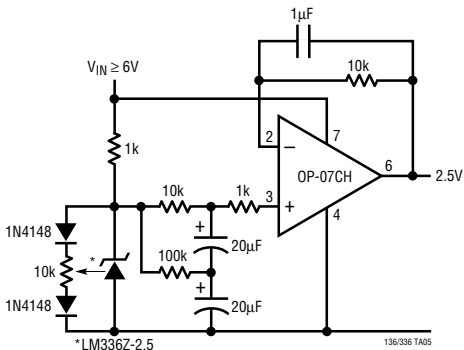
Low Temperature Coefficient Power Regulator



Switchable ±1.25V Bipolar Reference

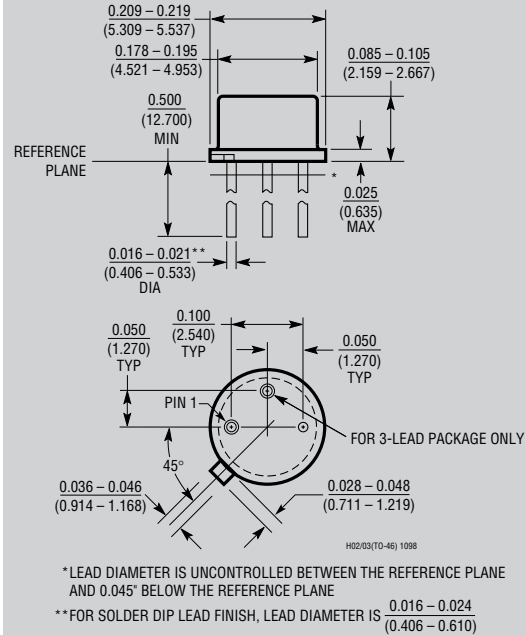


Low Noise 2.5V Buffered Reference



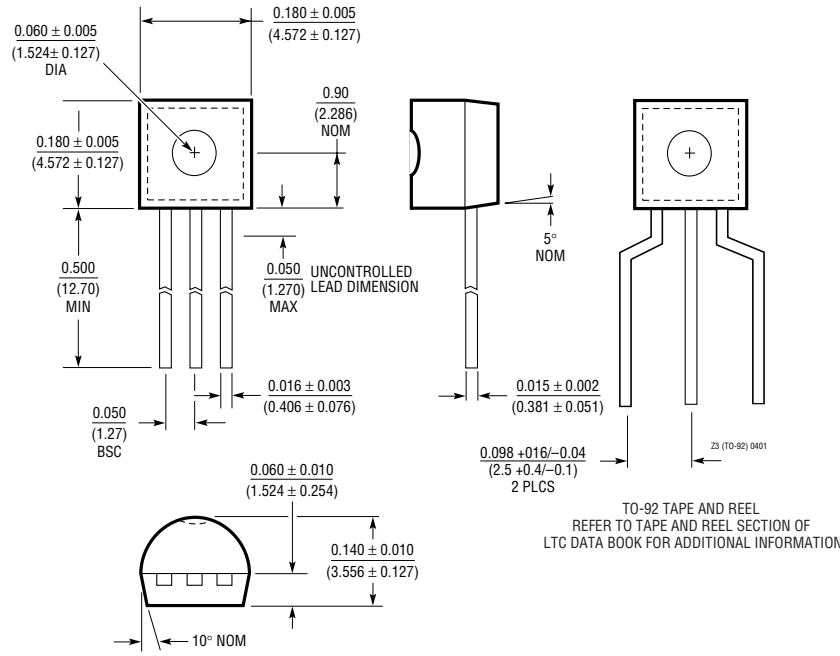
PACKAGE DESCRIPTION

H Package 2-Lead and 3-Lead TO-46 Metal Can (Reference LTC DWG # 05-08-1340)



OBSOLETE PACKAGE

Z Package 3-Lead Plastic TO-92 (Similar to TO-226) (Reference LTC DWG # 05-08-1410)



RELATED PARTS

PART NUMBER	DESCRIPTION	COMMENTS
LT1009	Precision 2.5V Shunt Reference	0.2% Max Initial Tolerance