

LM336-2.5-XG

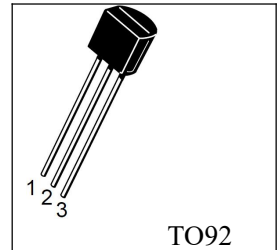
2.5V Integrated Reference Circuit

General Description

The LM336-2.5-XG integrated circuits is precision 2.5V shunt regulator diodes. The monolithic references operate as low-temperature-coefficient 2.5V zeners with a 0.2Ω dynamic impedance. A third terminal provided on the circuit allows the reference voltage and temperature coefficient to be trimmed easily.

The LM336-2.5-XG is useful as precision 2.5V low-voltage references (V_Z) for digital voltmeters, power supplies, or operational-amplifier circuitry. The 2.5V voltage reference makes it convenient to obtain a stable reference from 5-V logic supplies. The LM336-2.5-XG operate as shunt regulators, and can be used as either positive or negative voltage references.

The LM336-2.5-XG is available in TO92 package.



Features

- Low Temperature Coefficient
- Wide Operating Current $400\mu\text{A}$ to 10mA
- 0.2Ω Dynamic Impedance
- $\pm 1.0\%$ Initial Tolerance Available
- Specified Temperature Stability
- Easily Trimmed for Minimum Temperature Drift

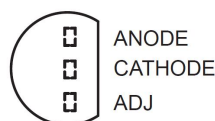
Package Information

Part NO.	Order NO.	Package Description	Package Marking	Package Option
LM336-2.5-XG	LM336-2.5-XG	TO92	SXXX LM336 Z-2.5	1000/Bag 2000/Tape

LM336Z-2.5:Part NO.

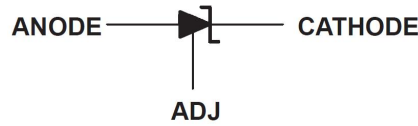
SXXX:Lot NO.

Pin Configuration

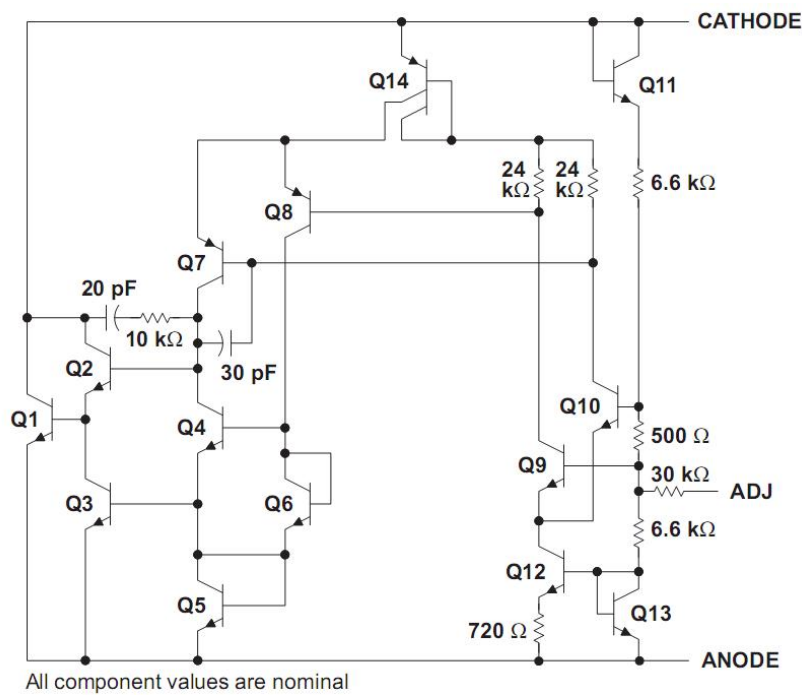


(TOP VIEW) LM336-2.5-XG(TO92)

Symbol Configuration



Functional Block Diagram



Absolute Maximum Ratings (T_{amb}=25°C)

Parameter	Symbol	Value	Unit
Reverse Current	I _R	20	mA
Forward Current	I _F	10	mA
Thermal Resistance Junction to Ambient	θ _{JA}	156	°C/W
Lead Temperature (10 Seconds)	T _{lead}	260	°C
Storage Temperature Range	T _{stg}	-65~150	°C

LM336-2.5-XG

Recommended Operating Conditions

Parameter	Symbol	Min.	Max.	Unit
Operating Free-air Temperature	T_A	0	70	$^{\circ}\text{C}$

Electrical Characteristics at specified free-air temperature (Unless otherwise specified)

Parameter	Test conditions	T_A	Symbol	Min.	Typ.	Max.	Unit
Reference Voltage	$I_Z = 1\text{mA}$	25°C	V_Z	2.39	2.49	2.59	V
Change in Reference Voltage with Temperature	V_Z adjusted to 2.490V $I_Z = 1\text{mA}$	Full range	$\Delta V_{Z(\Delta T)}$		1.8	6.0	mV
Change in Reference Voltage with Current	$I_Z = 400\mu\text{A}$ to 10mA	25°C	$\Delta V_{Z(\Delta I)}$		2.6	10	mV
		Full range			3	12	
Long-term Change in Reference Voltage	$I_Z = 1\text{mA}$	25°C	$\Delta V_{Z(\Delta t)}$		20		ppm/khr
Reference Dynamic Impedance	$I_Z = 1\text{mA}$, $f = 1\text{kHz}$	25°C	Z_D		0.2	1.0	Ω
		Full range			0.4	1.4	

*Full range is 0°C to $+70^{\circ}\text{C}$.

Application Circuit

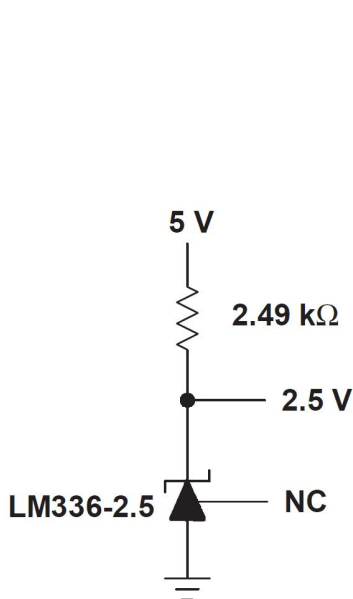


Figure 1. 2.5V Reference

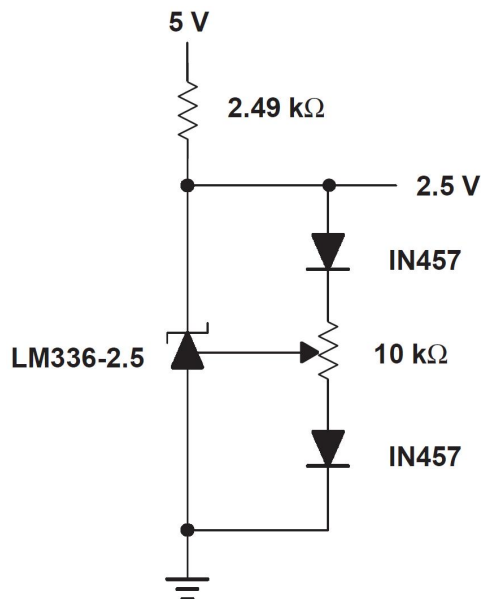


Figure 2. 2.5V Reference with Minimum Temperature Coefficient

Characteristic Curves

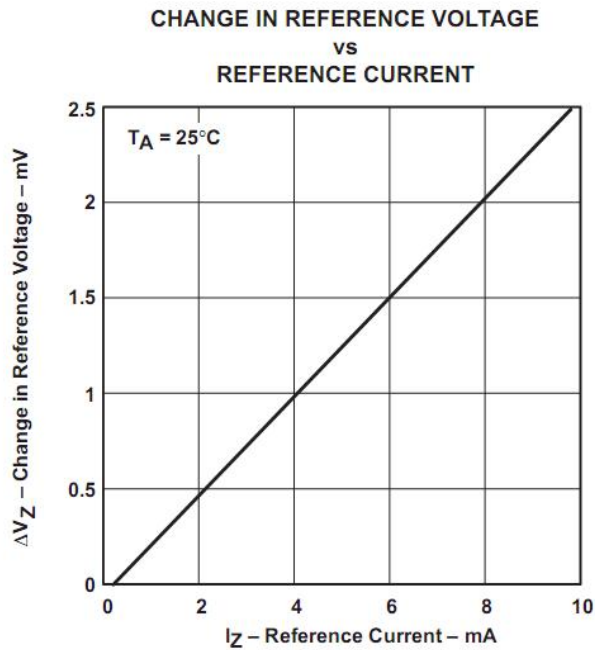


Figure 1

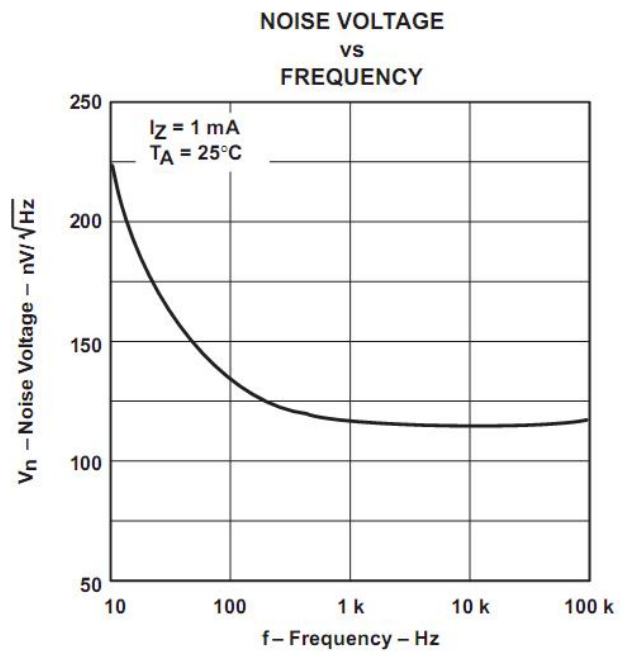


Figure 2

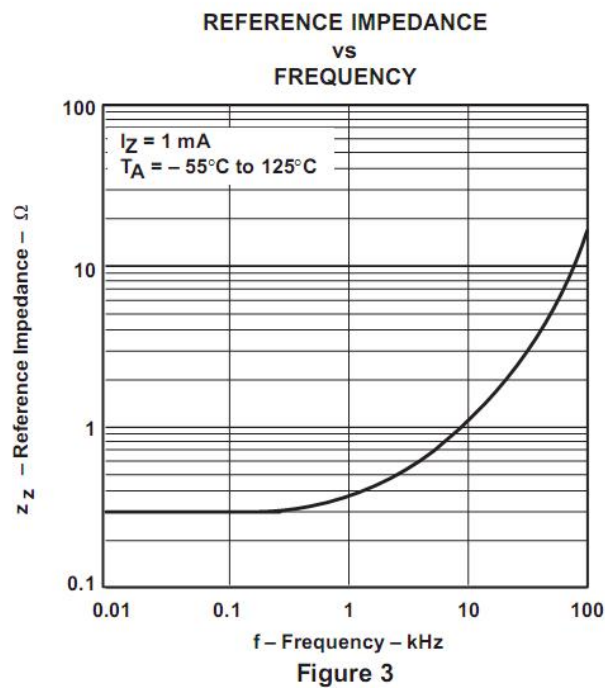
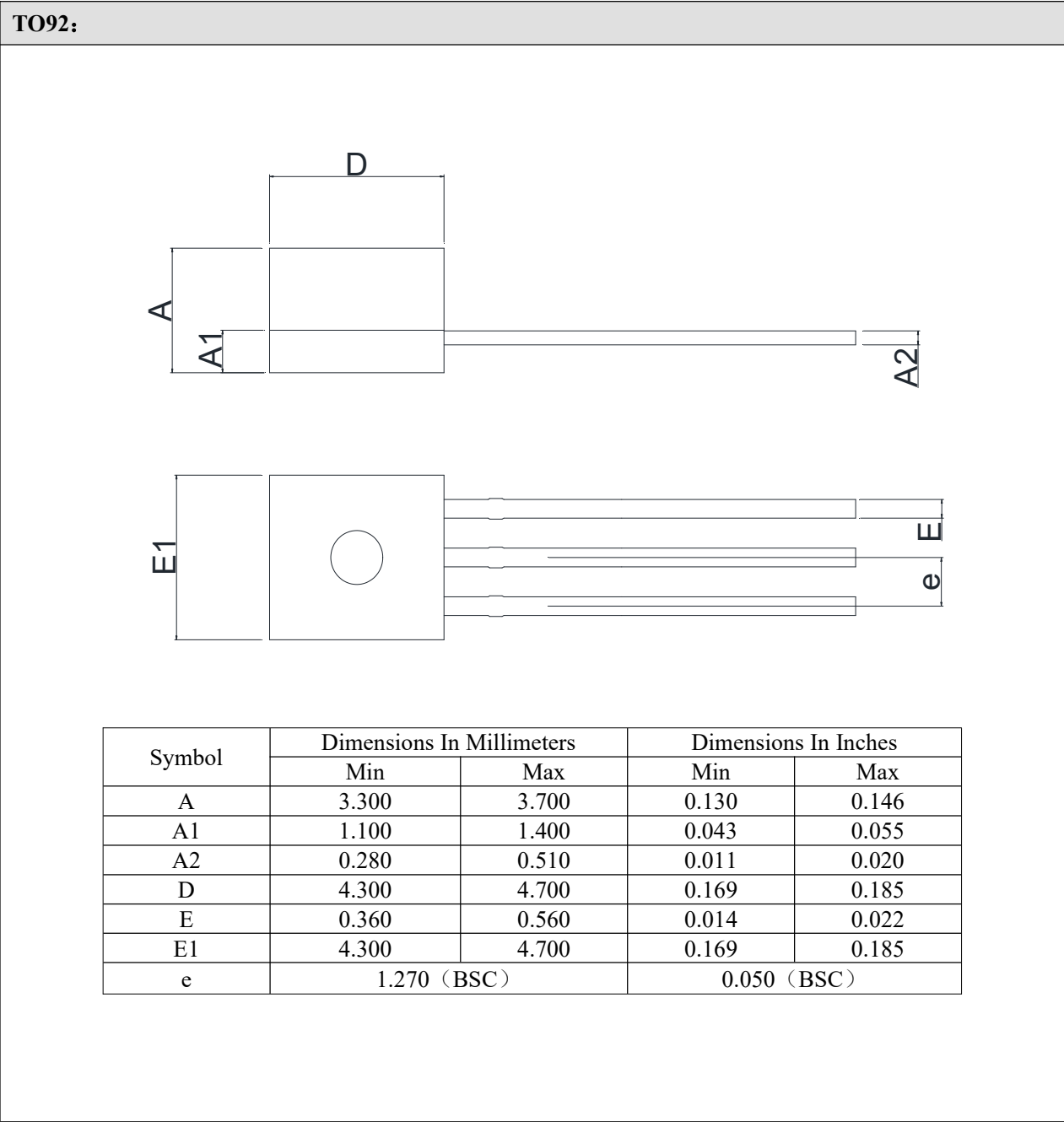


Figure 3

Outline Dimensions



Statements

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- The product upgrades without end, Silicore Technology will wholeheartedly provide customers integrated circuits that have better performance and better quality.