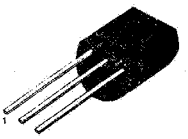
PROGRAMMABLE SHUNT REGULATOR

The LM336-2.5/B integrated Circuits are precision 2.5V shunt regulators. The monolithic IC voltage references operates as a low temperature coefficient 2.5V zener with 0.2Ω dynamic impedance. A third terminal on the KA336-2.5/B allow the reference voltage and temperature coefficient to be trimmed easily.
LM3362.5/B are useful as a precision 2.5V low voltage reference for digital voltmeters, power supplies or op amp circuitry. The 2.5V make it convenient to obtain a stable reference from low voltage supplies. Further, since the LM336-2.5/B operate as shunt regulators, they can be used as either a positive or negative voltage reference.

TO-92



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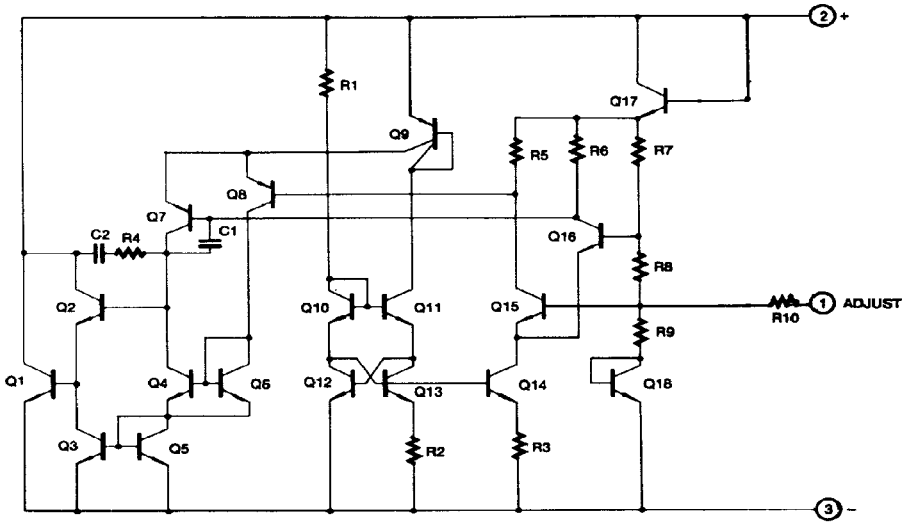
FEATURES

- Low temperature coefficient
- Guaranteed temperature stability 4mV typical
- 0.2 Ω dynamic impedance
- ±1.0% initial tolerance available.
- Easily trimmed for minimum temperature drift

ORDERING INFORMATION

Device	Package	Operating Temperature
LM336Z-2.5	TO-92	0 ~ +70°C
LM336Z-2.5B		
LM236Z-2.5		-25 ~ +85°C

SCHEMATIC DIAGRAM



FAIRCHILD SEMICONDUCTOR™

Rev. B

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Value	Unit
Reverse Current	I_R	15	mA
Forward Current	I_F	10	mA
Operating Temperature Range LM336-2.5/B LM236-2.5	T_{OPR}	0 ~ + 70 - 25 ~ +85	°C °C
Storage Temperature Range	T_{STG}	- 60 ~ + 150	°C

ELECTRICAL CHARACTERISTICS ($T_{MIN} < T_A < T_{MAX}$, unless otherwise specified)

Characteristic	Symbol	Test Conditions	LM336/236			LM336B			
			Min	Typ	Max	Min	Typ	Max	
Reverse Breakdown Voltage	V_R	T_A = +25°C I_R = 1mA	2.44	2.49	2.54	2.465	2.49	2.515	V
Reverse Breakdown Change with Current	$\Delta V_R/\Delta I_R$	T_A = +25°C 400μA ≤ I_R ≤ 10mA		2.6	6		2.6	10	mV
Reverse Dynamic Impedance	Z_D	T_A = +25°C I_R = 1mA		0.2	0.6		0.2	1	Ω
Temperature Stability	ST_T	I_R = 1mA $T_{MIN} \le T_A \le T_{MAX}$		1.8	6		1.8	6	mV
Reverse Breakdown Change with Current	$\Delta V_R/\Delta I_R$	$T_{MIN} \le T_A \le T_{MAX}$ 400μA ≤ I_R ≤10mA		3	10		3	12	mV
Reverse Dynamic Impedance	Z_D	I_R = 1mA $T_{MIN} \le T_A \le T_{MAX}$		0.4	1		0.4	1.4	Ω
Long Term Stability	ST	I_R = 1mA $T_{MIN} \le T_A \le T_{MAX}$		20			20		ppm

LM236: T_{MIN} = -25°C, T_{MAX} = +85°C
LM336: T_{MIN} = 0°C, T_{MAX} = +70°C

TYPICAL PERFORMANCE CHARACTERISTICS

Fig. 1. Reverse Voltage Change

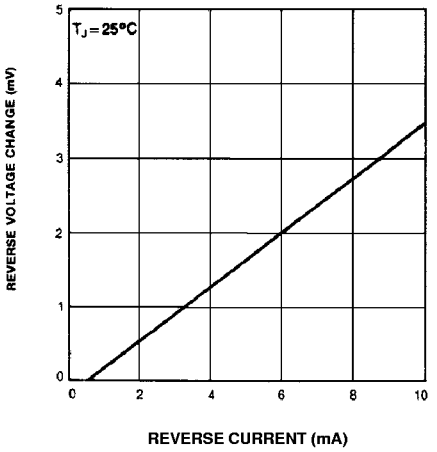


Fig. 2 Reverse Characteristics

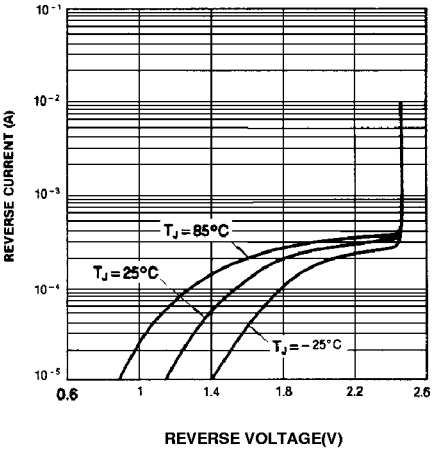


Fig. 3 Temperature Drift

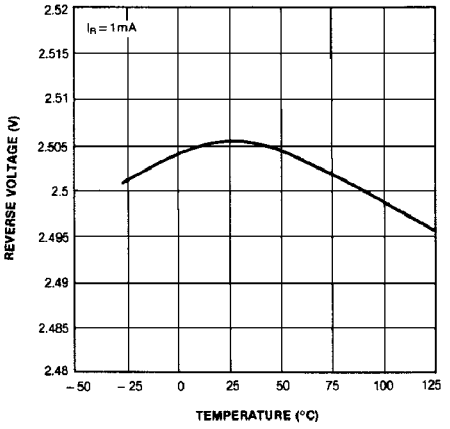
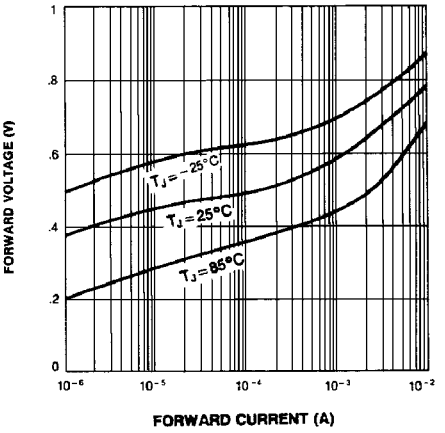


Fig. 4 Forward Characteristics



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PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
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