

PROGRAMMABLE SHUNT REGULATOR

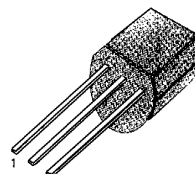
The KA336-5.0/B integrated circuits are precision 5.0V shunt regulators. The monolithic IC voltage references operate as a low temperature coefficient 5.0V zener with 0.6ohm dynamic impedance. A third terminal on the KA336-5.0/B allow the reference voltage and temperature coefficient to be trimmed easily.

The KA336-5.0/B are useful as a precision 5.0V low voltage references it convenient in obtaining a stable reference from low voltage supplies. Further, since the KA336-5.0/B operate as shunt regulators, they can be used as either a positive or negative voltage reference. The KA236 is characterized for operation from - 25 °C to 85 °C, and the KA336 from 0 °C to 70 °C.

FEATURES

- Low temperature coefficient
- Adjustable 4V to 6V
- Wide operating range current of 400 μ A to 10mA
- Three lead transistor package (TO-92)
- 0.6 ohm dynamic impedance
- $\pm 1.0\%$ initial tolerance available
- Guaranteed temperature stability
- Easily trimmed for minimum temperature drift
- Fast turn on

TO-92

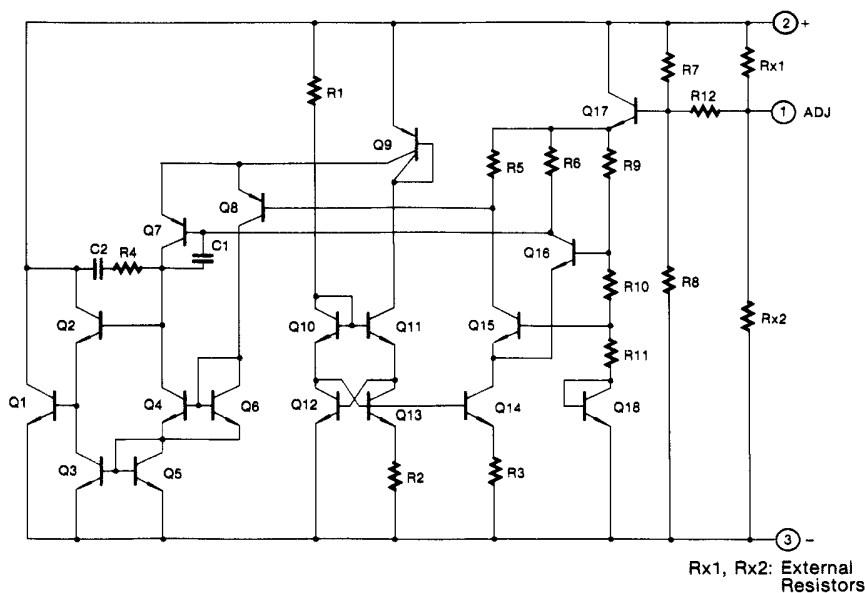


1:ADJ, 2: +, 3: -

ORDERING INFORMATION

Device	Package	Operating Temperature
KA336-5.0	TO-92	0 ~ 70 °C
KA336-5.0B		
KA236-5.0		-25 ~ +85 °C

SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Value	Unit
Reverse Current	I_R	15	mA
Forward current	I_F	10	mA
Operating Temperature Range KA336-5.0/B KA236-5.0	T_{OPR}	0 ~ +70 -25 ~ +85	°C
Storage Temperature Range	T_{STG}	-60 ~ +150	°C

ELECTRICAL CHARACTERISTICS

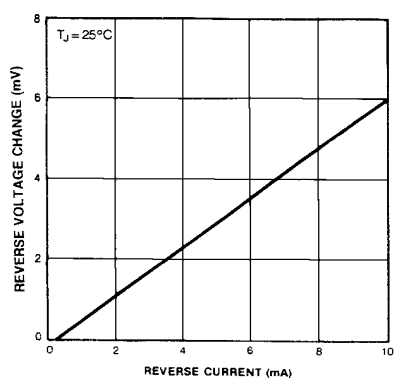
(T_{MIN} ≤ T_A ≤ T_{MAX} unless otherwise specified)

Characteristic	Symbol	Test Conditions	KA336/236			KA336B			Unit
			Min	Typ	Max	Min	Typ	Max	
Reverse Breakdown Voltage	V_R	T _A = 25°C, I _R = 1mA	4.8	5.0	5.2	4.9	5.0	5.1	V
Reverse Breakdown Change with Current	$\Delta V_R / \Delta I_R$	T _A = 25°C 600 μA ≤ I _R ≤ 10mA	—	6	20	—	6	20	mV
Reverse Dynamic Impedance	Z_D	T _A = 25°C, I _R = 1mA	—	0.6	2	—	0.6	2	Ω
Temperature Stability	ST _T	I _R = 1mA T _{MIN} ≤ T _A ≤ T _{MAX}	—	4	12	—	4	12	mV
Reverse Breakdown Change with Current	$\Delta V_R / \Delta I_R$	600 μA ≤ I _R ≤ 10mA T _{MIN} ≤ T _A ≤ T _{MAX}	—	6	24	—	6	24	mV
Reverse Dynamic Impedance	Z_D	I _R = 1mA T _{MIN} ≤ T _A ≤ T _{MAX}	—	0.8	2.5	—	0.8	2.5	Ω
Long Term Stability	ST	I _R = 1mA T _{MIN} ≤ T _A ≤ T _{MAX}	—	20	—	—	20	—	ppm

* KA236: T_{MIN} = -25°C, T_{MAX} = 85°CKA336: T_{MIN} = 0°C, T_{MAX} = 70°C

TYPICAL PERFORMANCE CHARACTERISTICS

Fig. 1 REVERSE VOLTAGE CHANGE



TYPICAL PERFORMANCE CHARACTERISTICS

Fig. 2 REVERSE CHARACTERISTICS

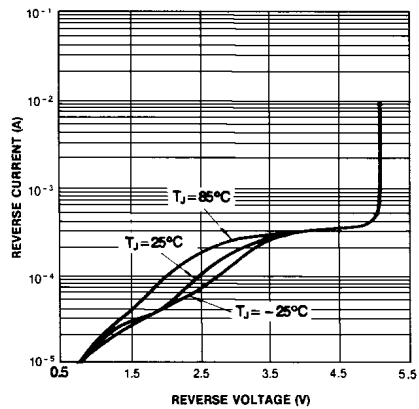


Fig. 3 TEMPERATURE DRIFT

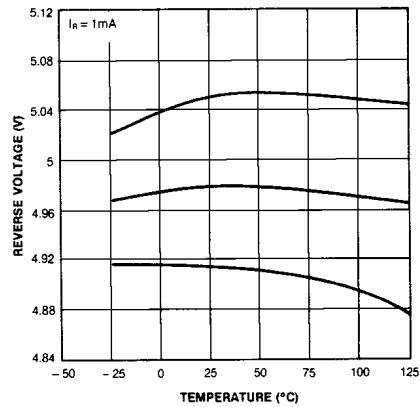


Fig. 4 FORWARD CHARACTERISTICS

