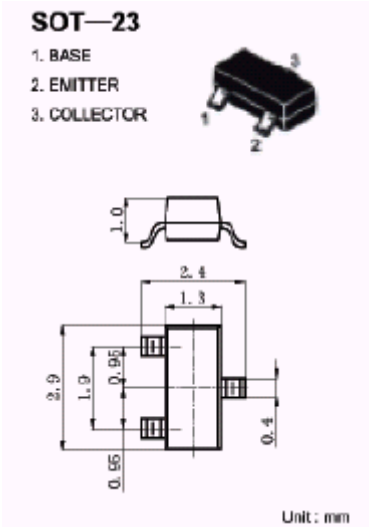
Adjustable Reference Source

FEATURES

The output voltage can be adjusted to 36V
Low dynamic output impedance ,its typical value is 0.2Ω
Trapping current capability is 1 to 100mA
The typical value of the equivalent temperature factor in the whole temperature scope is 50 ppm/℃
The effective temperature compensation in the working range of full temperature
Low output noise voltage
Fast on -state response
0.5% and 1% precision



ABSOLUTE MAXIMUM RATINGS（Operating temperature range applies unless otherwise specified）

Parameter	SYMBOL	VALUE	UNITS
Cathode Voltage	V_{KA}	37	V
Cathode Current Range (Continuous)	I_{KA}	-100-+150	mA
Reference Input Current Range	Iref	0.05-+10	mA
Power Dissipation	P_D	770	mW
Operating temperature	Topr	0-70	℃
Storage temperature Range	Tstg	-65-+150℃	℃

ELECTRICAL CHARACTERISTICS（Tamb=25℃ unless otherwise specified）

Parameter	Symbol	Test conditions		MIN	TYP	MAX	UNIT
Reference Input Voltage	V_{ref}	$V_{KA}=V_{REF}$, I_{KA}=10mA		2.440	2.495	2.550	V
Deviation of reference input Voltage Over temperature (note)	$\triangle V_{ref}/\triangle T$	$V_{KA}=V_{REF}$, I_{KA}=10mA Tmin Ta Tmax			4.5	17	mV
Ratio Of Change in Reference Input Voltage to the change in Cathode Voltage	$\triangle V_{ref}/\triangle V_{KA}$	I_{KA}=10mA	$\triangle V_{KA}$ =10V～V_{REF}		-1.0	-2.7	m V/V
			$\triangle V_{KA}$ =36V～10V		-0.5	-2.0	
Reference Input Current	I_{ref}	I_{KA}= 10mA,R_1=10KΩ R_2=∞			1.5	4	μA
Deviation Of Reference Input Current Over Full Temperature Range	$\triangle I_{ref}/\triangle T$	I_{KA}=10mA, R_1=10KΩ R_2=∞ T_A=full Temperature			0.4	1.2	μA
Minimum cathode current for Regulation	I_{KA}(min)	$V_{KA}=V_{REF}$			0.45	1.0	mA
Off-state cathode Current	I_{KA}(OFF)	V_{KA}=36V ,V_{REF}=0			0.05	1.0	μA
Dynamic impedance	Z_{KA}	$V_{KA}=V_{REF}$,I_{KA}=1 to 100mA f 1.0KHz			0.15	0.5	Ω

Note:T_{MIN}=0℃ ,T_{MAX}=+70℃

TYPICAL APPLICATIONS

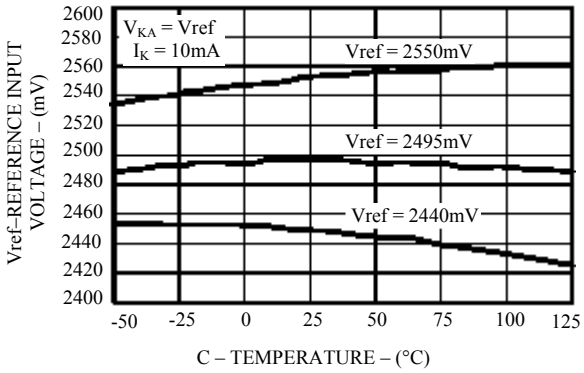


Figure 1.Reference Input Voltage vs. Temperature

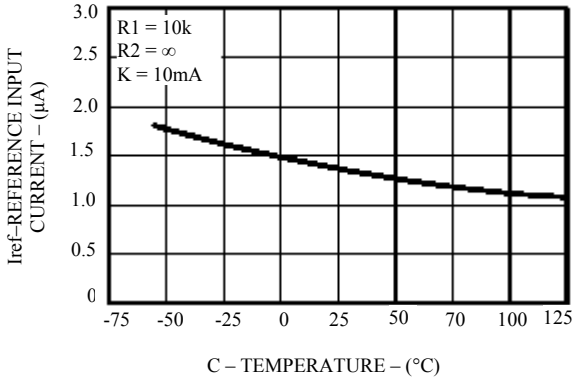


Figure 2.Reference Input Current vs. Temperature

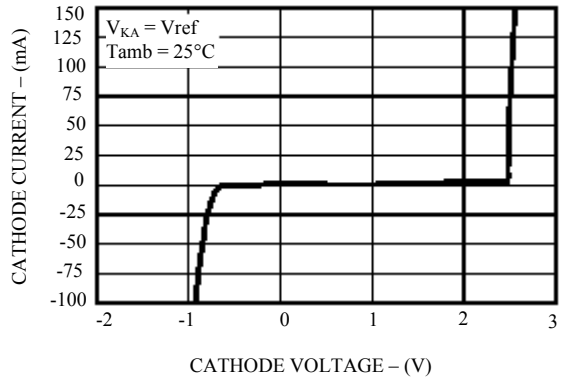


Figure 3.Cathode Current vs. Cathode Voltage

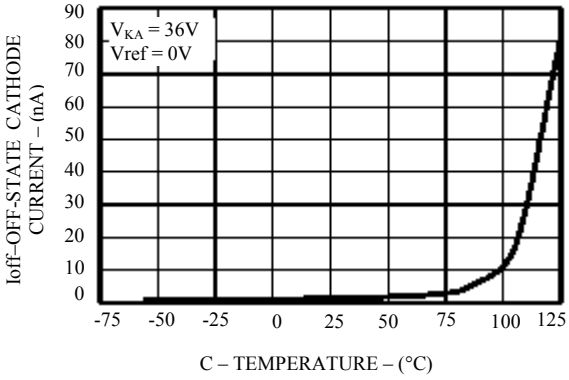


Figure 4.Off-State Cathode Current vs. Temperature

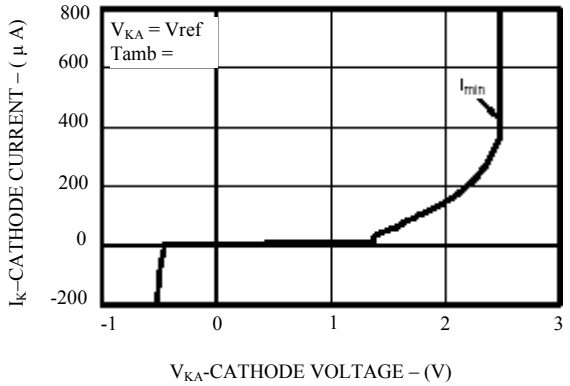


Figure 5.Cathode Current vs. Cathode Voltage

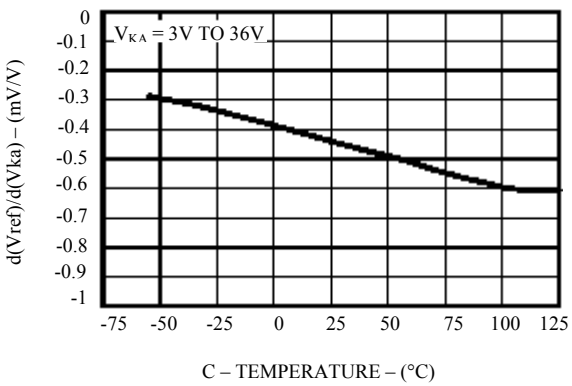


Figure 6.Ratio of Delta Reference Voltage to Delta Cathode Voltage over Temperature

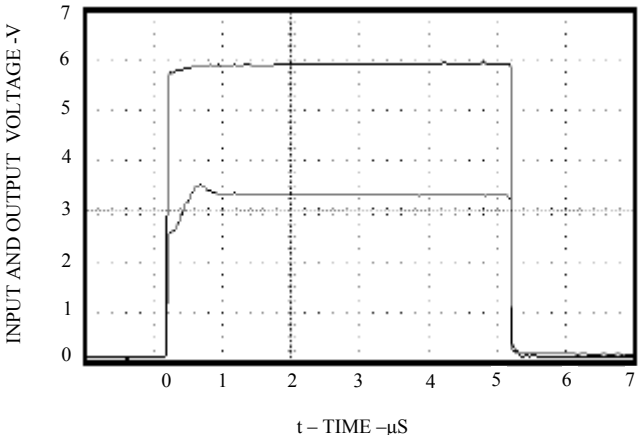
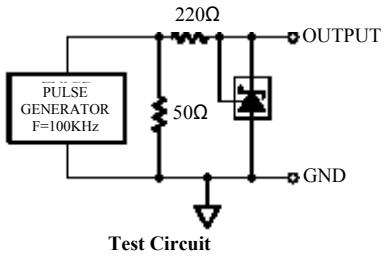


Figure 7. Pulse Response



Test Circuit

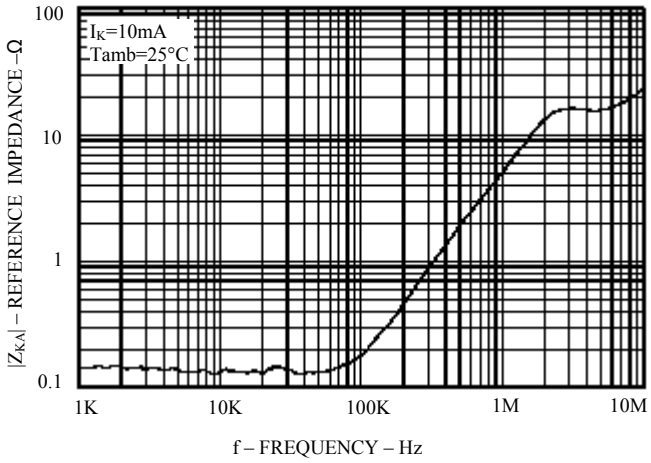
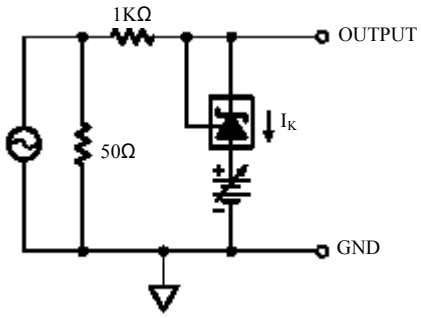


Figure 8.Reference Impedance vs. Frequency



Test Circuit for Reference Impedance

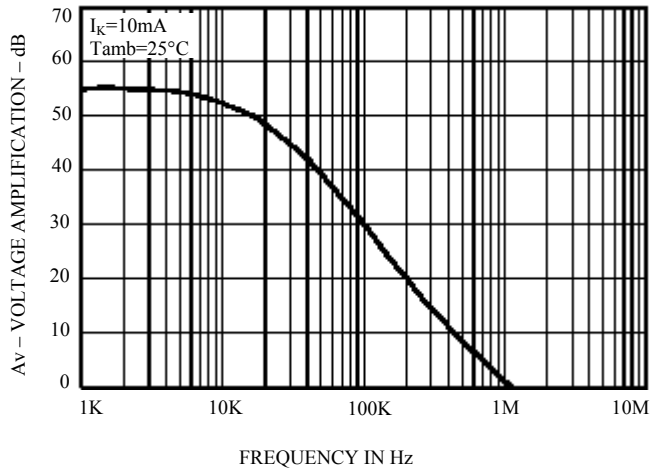
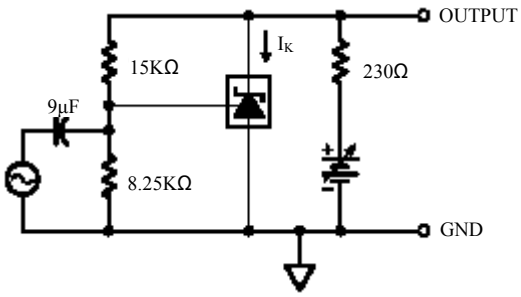


Figure 9.Small-Signal Voltage Amplification vs. Frequency



Test Circuit for Voltage Amplification

TYPICAL APPLICATIONS

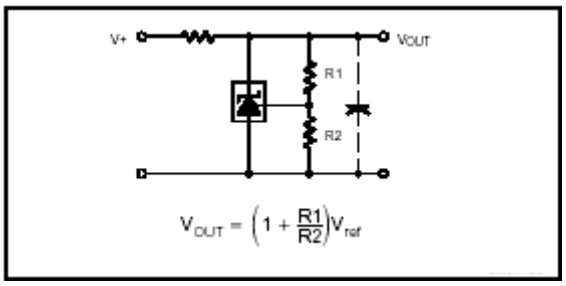


Figure 10.Shunt Regulator

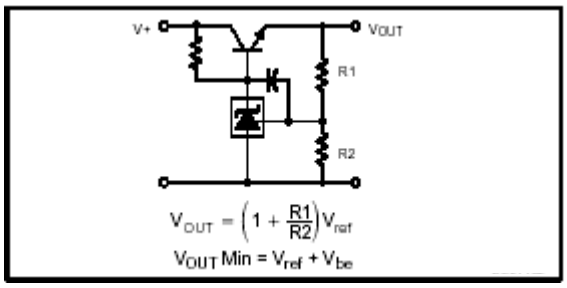


Figure 11.Series Pass Regulator

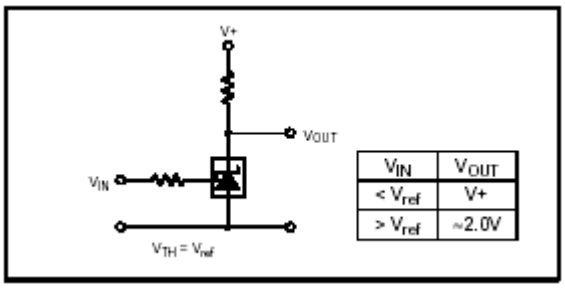


Figure 12.Single-Supply Comparator with Temperature-Compensated Threshold

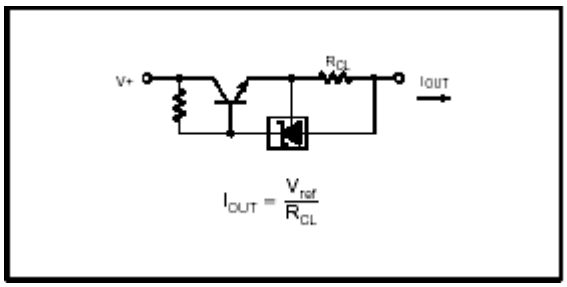


Figure 13.Constant Current Source

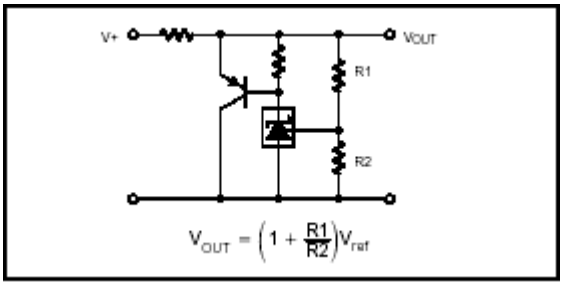


Figure 14.High Current Shunt

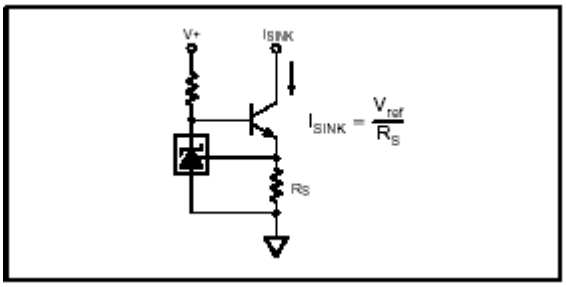


Figure 15.Constant Current Sink