Programmable Precision Regulator

Features

- The Reference Input Voltage Tolerance is 0.5%
- Sink Current Capability of 0.1mA to 100 mA
- Programmable Output Voltage 36V
- Low Output Noise Voltage and Fast Turn On Response
- Temperature Compensated for Operation over Full Rated Operating Temperature Range
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. “Green” Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)

Maximum Ratings

Parameter	Symbol	Value	Unit
Cathode Voltage	V_{KA}	37	V
Cathode Current Range	I_K	-100~150	mA
Reference Input Current Range	I_{REF}	0.05~10	mA
Power Dissipation at 25 ℃	P_D	0.20	W
Thermal Resistance junction to ambient	$R_{\theta JA}$	625	℃/W
Operating Temperature	T_{opr}	0~70	℃
Storage Temperature Range	T_{STG}	-55~150	℃

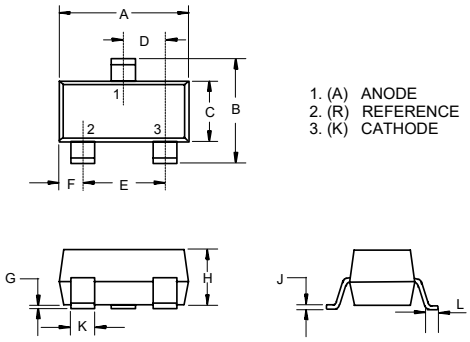
Recommended Operating Conditions

Parameter	Symbol	Min	Max	Unit
Cathode Voltage	V_{KA}	V_{REF}	36	V
Cathode Current Range	I_K	1.0	100	mA

Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

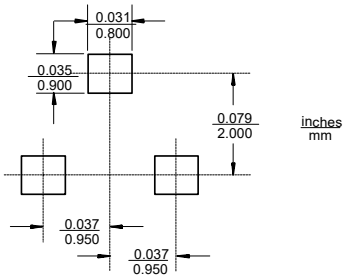
Marking Code: 431

SOT-23



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reference Input Voltage	V_{ref}	$V_{KA}=V_{REF}$, $I_{KA}=10mA$	2.487	2.5	2.512	V
Deviation of reference Input Voltage	$V_{ref(dev)}$	$T_{min}\leq T_a\leq T_{max}$ $V_{KA}=V_{REF}$, $I_{KA}=10mA$		3.0	17	mV
Ratio of Change in Reference Input Voltage to the Change in Cathode Voltage	$\triangle V_{ref}/\triangle V_{KA}$	$\triangle V_{KA}$=10V~Vref		-1.4	-2.7	
		$\triangle V_{KA}$=36V~10V		-1.0	-2.0	
Reference Input Current	I_{ref}	$I_{KA}=10mA$, $R_1=10K\Omega$, $R_2=\infty$		1.8	4.0	μA
Deviation of Reference Input Current Over Full Temperature Range	$\triangle I_{ref}/\triangle T$	$I_{KA}=10mA$, $R_1=10K\Omega$, $R_2=\infty$ T_A=full Temperature		0.4	1.2	μA
Minimum Cathode Current for Regulation	$I_{KA(min)}$			0.50	1.0	mA
Off-State Cathode Current	$I_{KA(off)}$	$V_{KA}=36V$, $V_{REF}=0V$		0.26	1.0	μA
Dynamic Impedance	Z_{KA}	I_{KA}=10 to 100mA, f≤1.0KHz		0.22	0.5	Ω

Curve Characteristics

Figure 1. Test Circuit for $V_{KA} = V_{ref}$

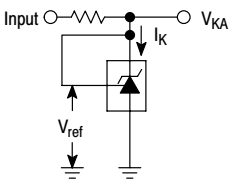


Figure 2. Test Circuit for $V_{KA} > V_{ref}$

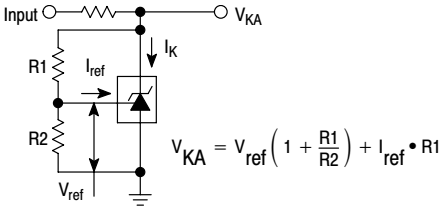


Figure 3. Test Circuit for I_{off}

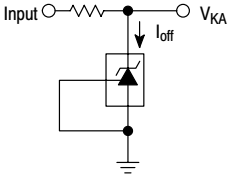


Figure 4. Cathode Current versus Cathode Voltage

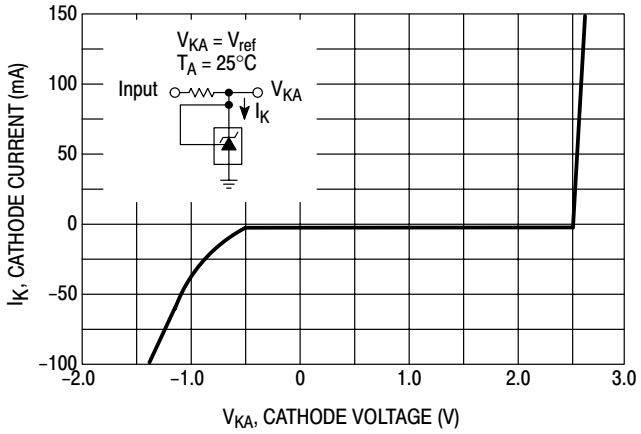


Figure 5. Cathode Current versus Cathode Voltage

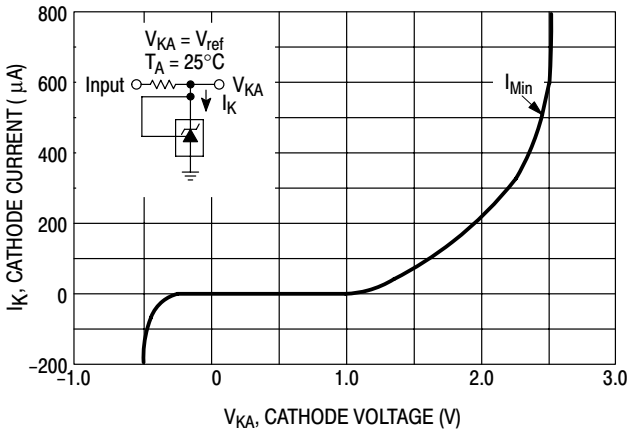


Figure 6. Reference Input Voltage versus Ambient Temperature

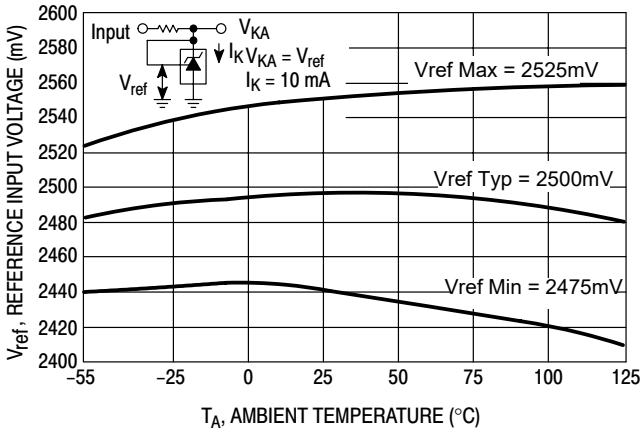
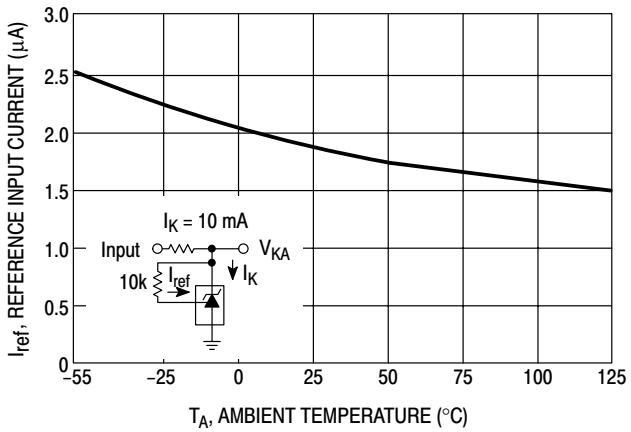


Figure 7. Reference Input Current versus Ambient Temperature



Curve Characteristics

Figure 8. Change in Reference Input Voltage versus Cathode Voltage

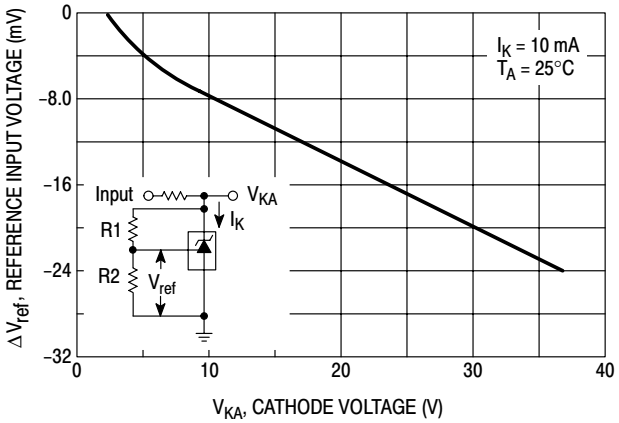


Figure 9. Off–State Cathode Current versus Ambient Temperature

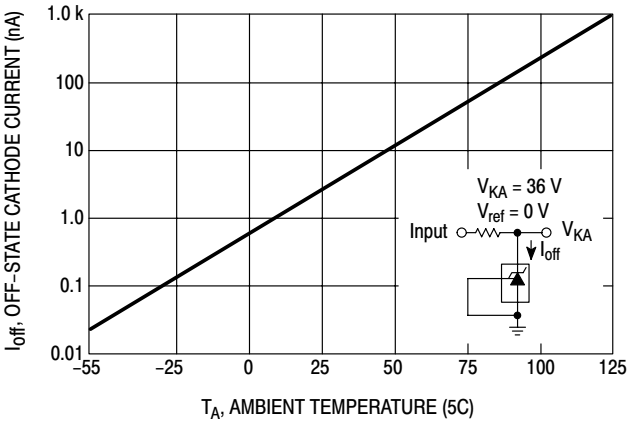


Figure 10. Dynamic Impedance versus Frequency

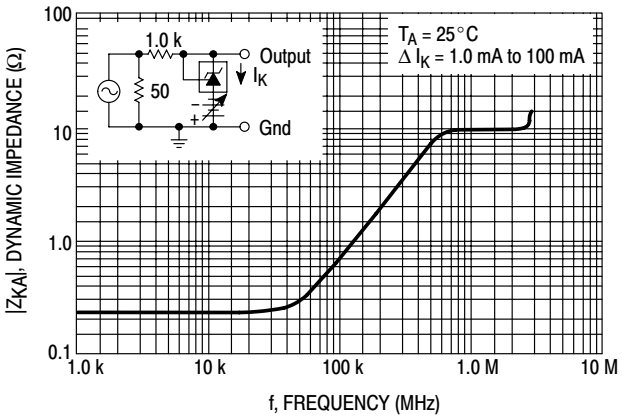


Figure 11. Dynamic Impedance versus Ambient Temperature

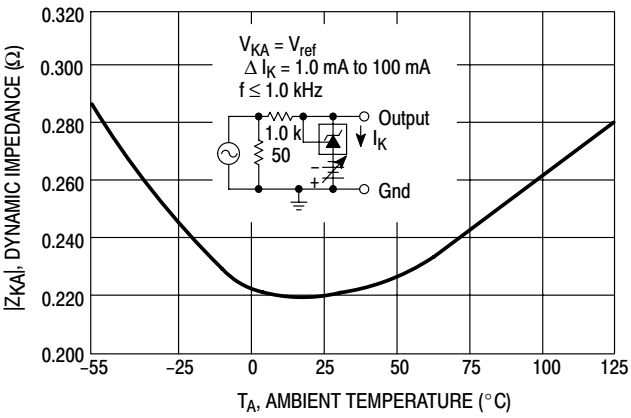


Figure 12. Open–Loop Voltage Gain versus Frequency

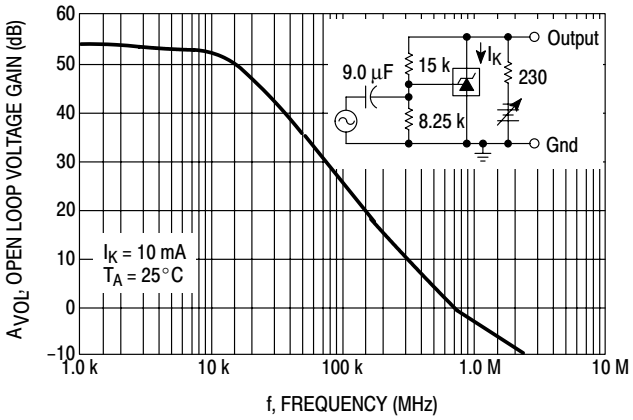
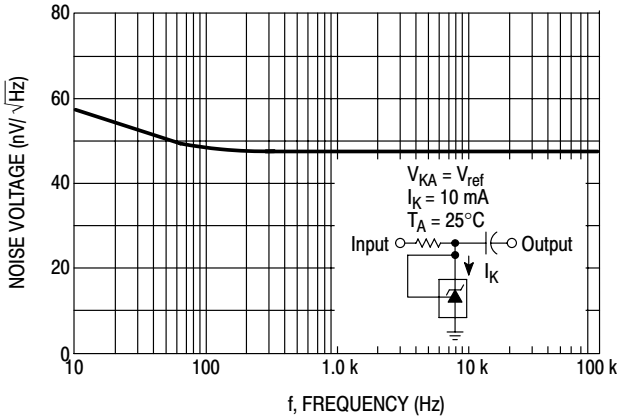


Figure 13. Spectral Noise Density



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel