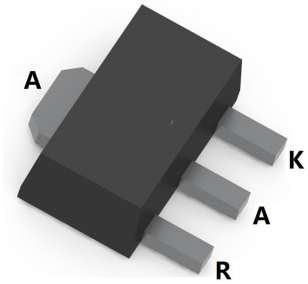
ADJUSTABLE ACCURATE REFERENCE SOURCE

FEATURES

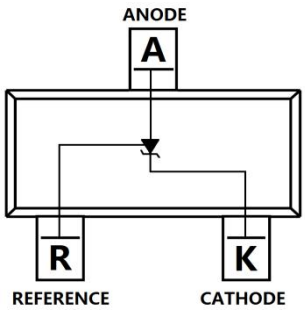
- The effective temperature compensation in the working range of full temperature
- The typical value of the equivalent temperature factor in the whole temperature scope is 50 ppm/°C
- The output voltage can be adjusted to 36V
- Low dynamic output impedance, its typical value is 0.2Ω
- Trapping current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



SOT-89

APPLICATION

- Shunt Regulator
- High-Current Shunt Regulator
- Precision Current Limiter



MECHANICAL DATA

- Case: SOT-89
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.055 grams (approximate)

MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit
Cathode Voltage	V_{KA}	36	V
Cathode Current Range (Continuous)	I_{KA}	-100~+150	mA
Reference Input Current Range	I_{ref}	0.05~+10	mA
Power Dissipation	P_D	500	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250	°C/W
Operating Temperature	T_{opr}	-20~+85	°C
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 ~+150	°C

ADJUSTABLE ACCURATE REFERENCE SOURCE

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

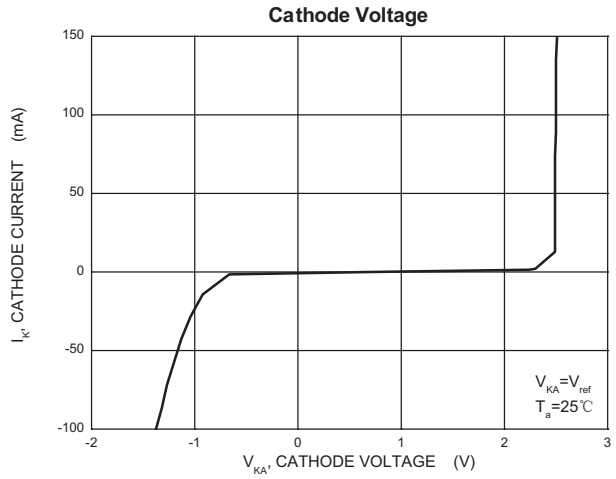
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Reference Input Voltage	V_{ref}	2.475	2.5	2.525	V	$V_{KA}=V_{REF}, I_{KA}=10mA$
Deviation of reference input voltage over temperature	$\Delta V_{ref}/\Delta T$		4.5	17	mV	$V_{KA}=V_{REF}, I_{KA}=10mA$ $-25°C \leq T_A \leq +85°C$
Ratio of change in reference input voltage to the change in cathode voltage	$\Delta V_{ref}/\Delta V_{KA}$		-1.0	-2.7	mV/V	$I_{KA}=10mA, \Delta V_{KA}=10V-V_{REF}$
			-0.5	-2.0	mV/V	$I_{KA}=10mA, \Delta V_{KA}=36V-10V$
Reference input current	I_{ref}		1.5	4	μA	$I_{KA}=10mA, R_1=10K\Omega, R_2=\infty$
Deviation of reference input current Over full temperature range	$\Delta I_{ref}/\Delta T$		0.4	1.2	μA	$I_{KA}=10mA, R_1=10K\Omega, R_2=\infty$, $-25°C \leq T_A \leq +85°C$
Emitter cut-off current	$I_{KA(min)}$		0.45	1.0	mA	$V_{KA}=V_{REF}$
Off-state Cathode Current	$I_{KA(OFF)}$		0.05	1.0	μA	$V_{KA}=36V, V_{REF}=0$
Dynamic Impedance	Z_{KA}		0.15	0.5	Ω	$V_{KA}=V_{REF}, I_{KA}=1\sim10mA, f\leq1.0kHz$

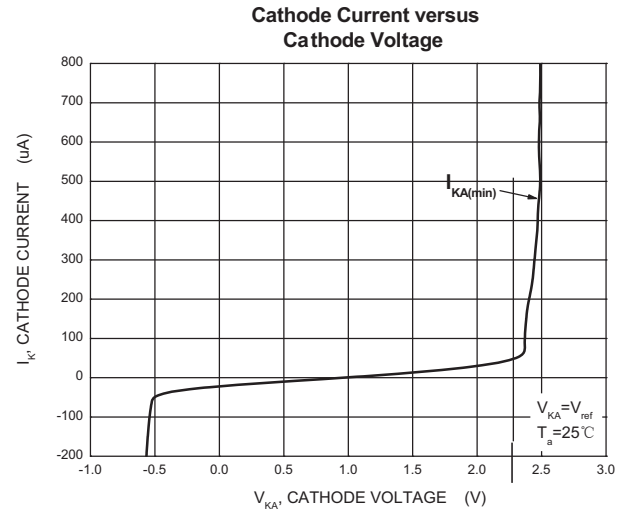
CLASSIFICATION OF V_{ref}

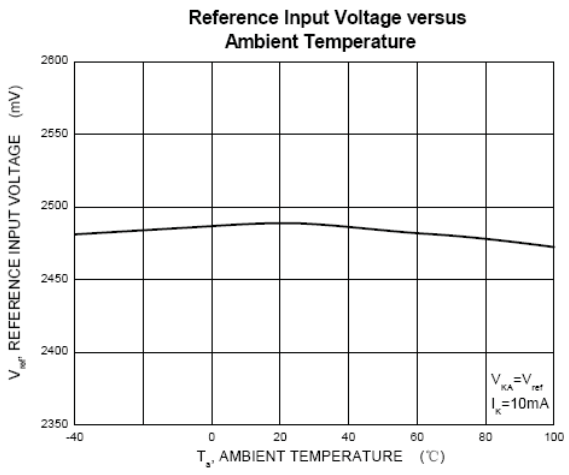
Rank	0.5%	1%	2%
Range	2.487-2.513	2.475-2.525	2.450-2.550

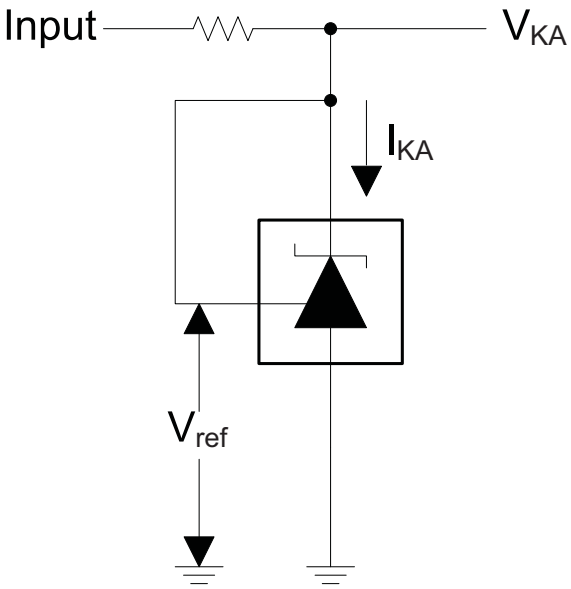
ADJUSTABLE ACCURATE REFERENCE SOURCE

Typical Characteristics



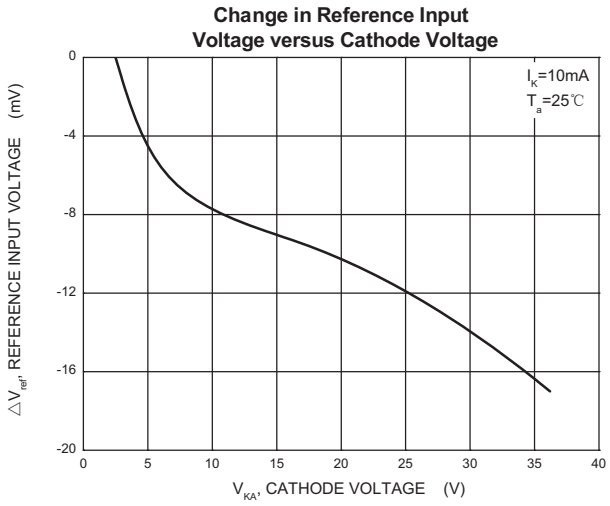


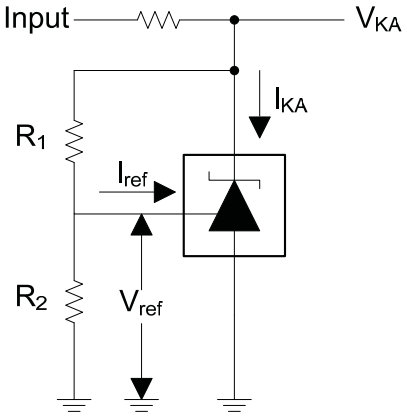




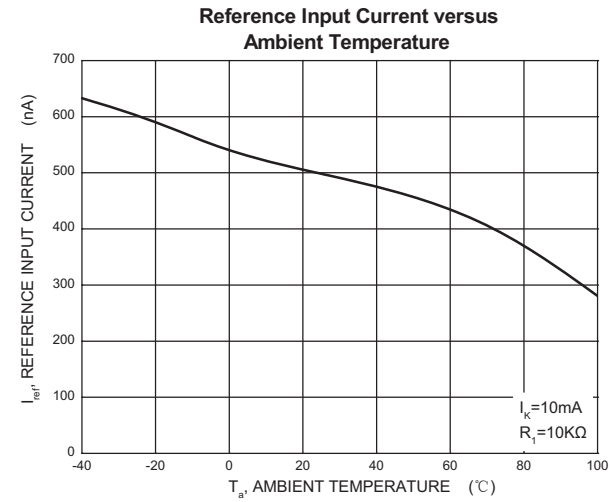
Test Circuit for $V_{KA}=V_{ref}$

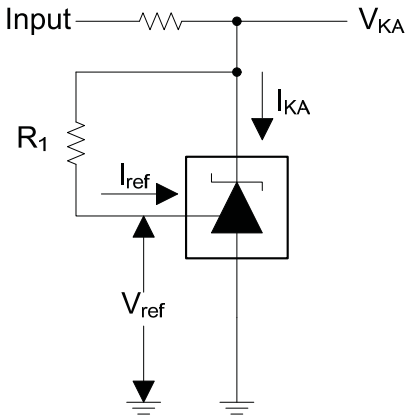
ADJUSTABLE ACCURATE REFERENCE SOURCE



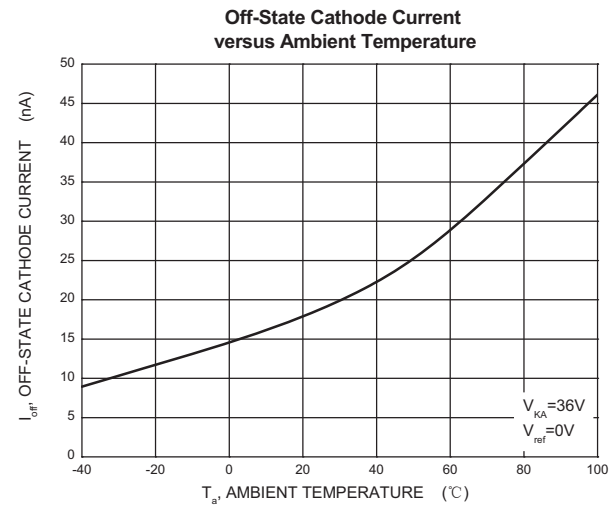


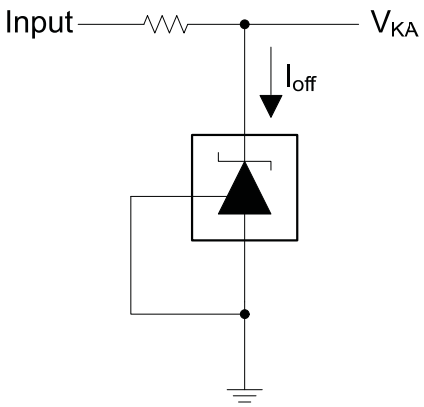
Test Circuit for $V_{KA}=V_{ref}(1+R1/R2)+R1*I_{ref}$





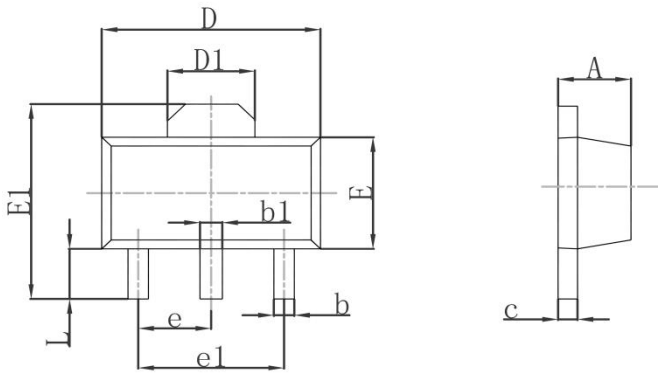
Test Circuit for I_{ref}





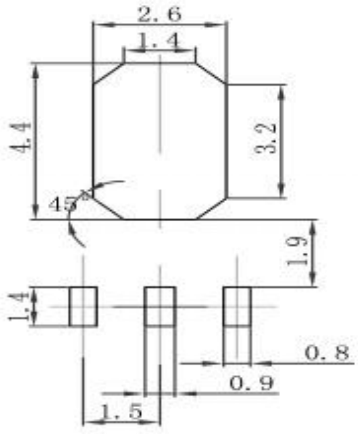
Test Circuit for I_{off}

SOT-89 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550REF		0.061REF	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP		0.060TYP	
e1	3.000TYP		0.118TYP	
L	0.900	1.200	0.035	0.047

SOT-89 Suggested Pad Layout



Note:

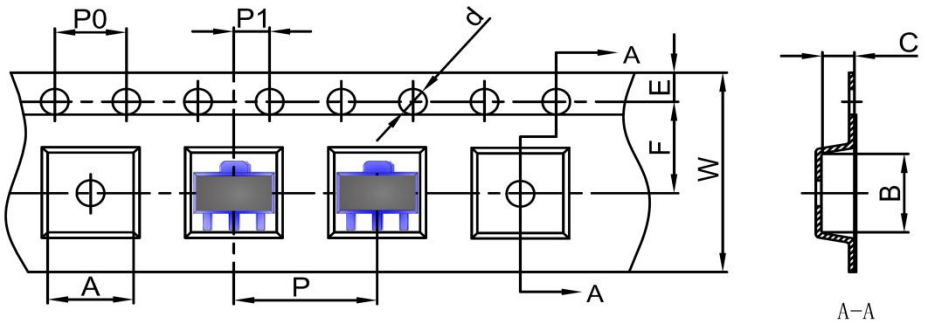
1.Controlling dimension: in millimeters

2.General tolerance: ±0.05mm

3.The pad layout is for reference purposes only

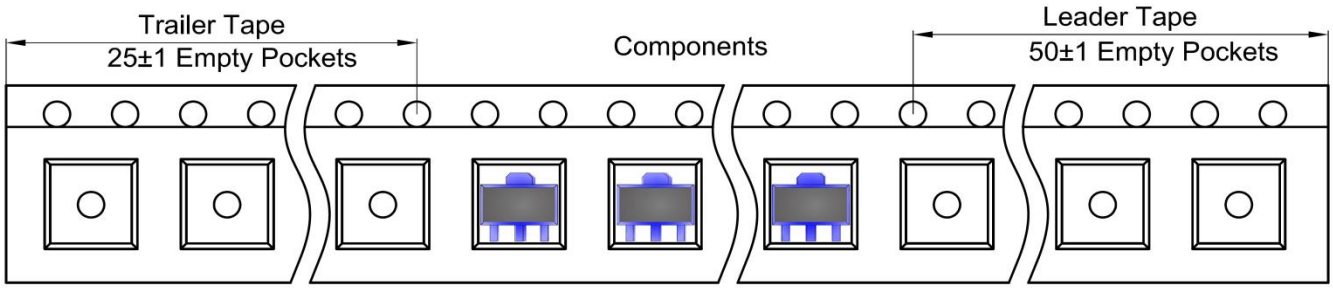
SOT-89 Tape and Reel

SOT-89 Embossed Carrier Tape

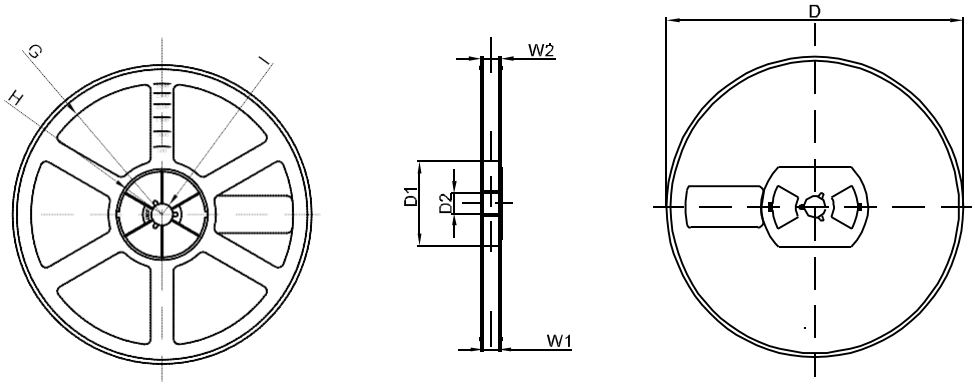


	DIMENSIONS ARE IN MILLIMETER									
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-89	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOT-89 Tape Leader and Trailer



SOT-89 Reel



	DIMENSIONS ARE IN MILLIMETER							
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	13.20	16.50
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1