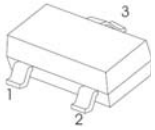
TL432

SOT-23 Encapsulate Adjustable Reference Source

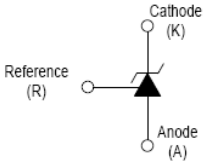
FEATURES

- Low dynamic output impedance
- The effective temperature compensation in the working range of full temperature
- Low output noise voltage
- Fast on -state response
- Sink current capability of 0.1mA to100mA

SOT-23

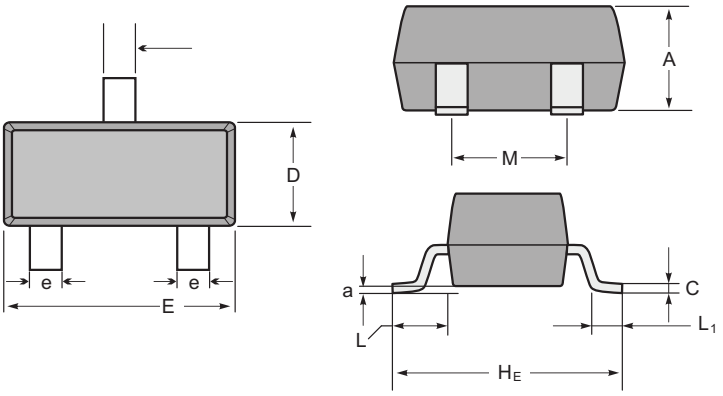


1.REFERENCE
2.CATHODE
3. ANODE



Marking

Type number	Marking code
TL432	432



SOT-23 mechanical data

UNIT		A	C	D	E	H_E	e	M	L	L_1	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

ABSOLUTE MAXIMUM RATINGS (Operating temperature rangeapplies unless otherwise specified)

Parameter	Symbol	Value	Units
Cathode Voltage	V_{KA}	18	V
Cathode Current Range (continuous)	I_{KA}	100	mA
Reference Input Current Range	I_{ref}	6	μA
Power Dissipation	P_D	350	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	℃/W
Operating Temperature	T_{opr}	0~+70	℃
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-65~+150	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reference input voltage (Fig 1)	V_{ref}	$V_{KA}=V_{REF}$, I_{KA}=10mA	1.2214		1.2586	V
Deviation of reference voltage over full temperature range (Fig 1)	$\triangle V_{ref(DEV)}$	$V_{KA}=V_{REF}$, I_{KA}=10mA 0℃≤T_a≤70℃			16	mV
Ratio of change in reference input voltage to the change in cathode voltage (Fig 2)	$\triangle V_{ref}/\triangle V_{KA}$	I_{KA}=10mA, $\triangle V_{KA}$=1.25V~15V			2.4	mV/V
Deviation of reference input current over full temperature range (Fig 2)	$\triangle I_{ref}/\triangle T$	I_{KA}=10mA, R_1=10kΩ, R_2=∞, 0℃≤T_a≤70℃			0.6	μA
Minimum cathode current for regulation (Fig 1)	$I_{KA(min)}$	$V_{KA}=V_{REF}$			0.1	mA
Off-state cathode current(Fig 3)	I_{off}	V_{KA}=15V,V_{REF}=0			0.5	μA
Dynamic impedance	Z_{KA}	$V_{KA}=V_{REF}$, I_{KA}=0.1 ~20mA, f≤1.0kHz			0.5	Ω

CLASSIFICATION OF V_{ref}

Rank	1%	1.5%
Range	1.2276~1.2524	1.2214~1.2586

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

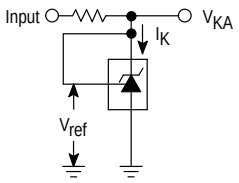


Figure 2. Test Circuit for V_{KA} > V_{ref}

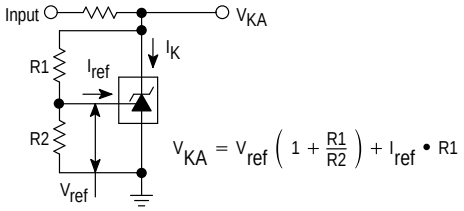
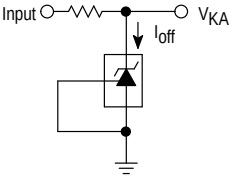
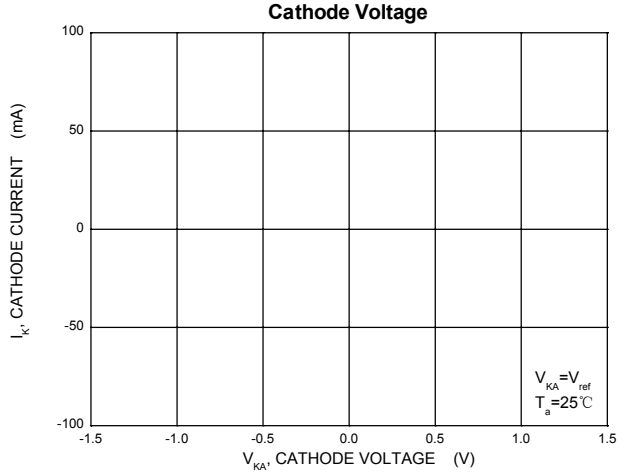


Figure 3. Test Circuit for I_{off}



TL432 LINEAR INTEGRATED CIRCUIT

Cathode Current versus Cathode Voltage



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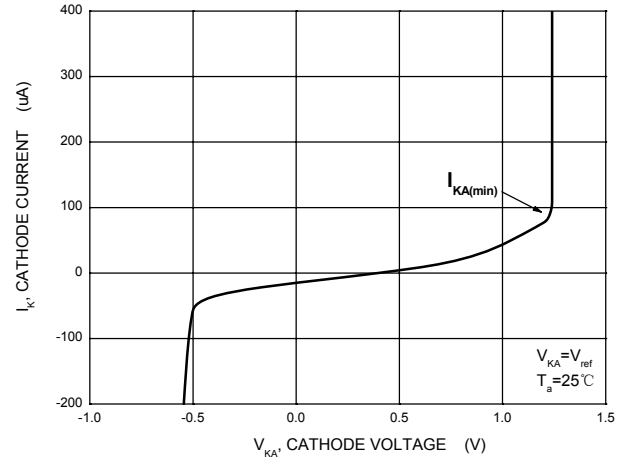
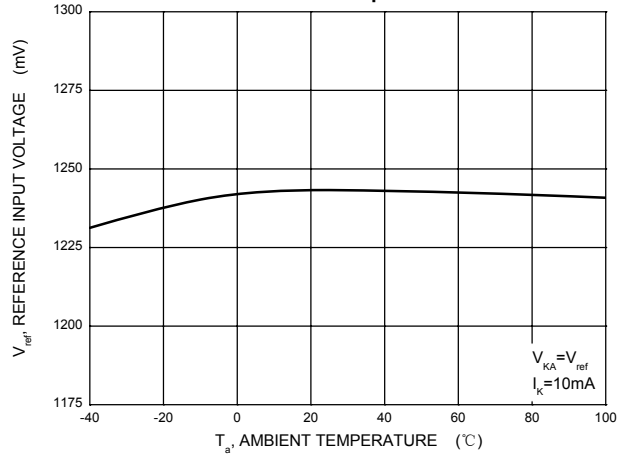
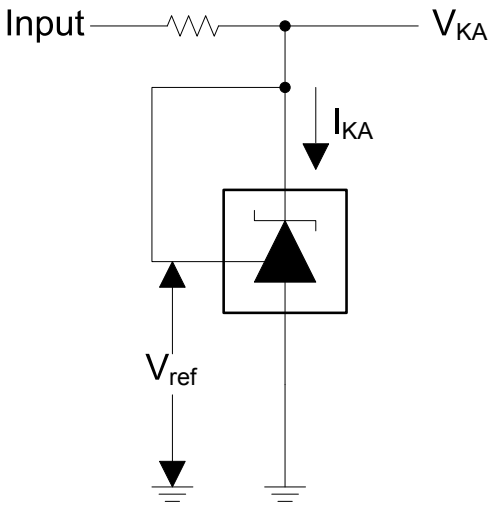


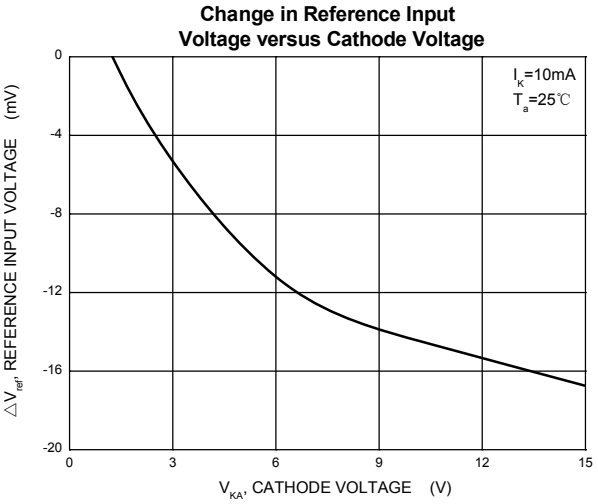
Reference Input Voltage versus Ambient Temperature

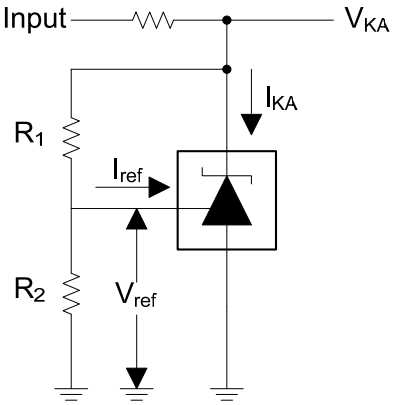




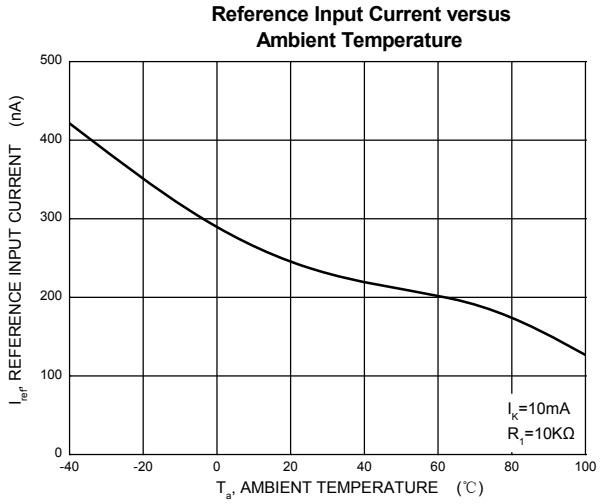
Test Circuit for $V_{KA}=V_{ref}$

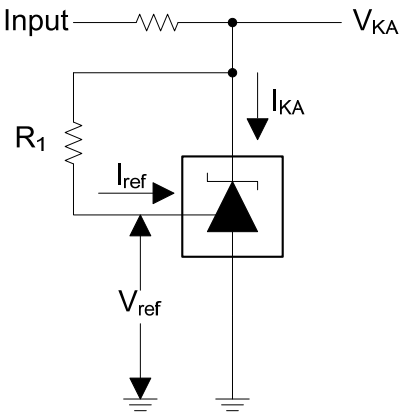
TL432 LINEAR INTEGRATED CIRCUIT



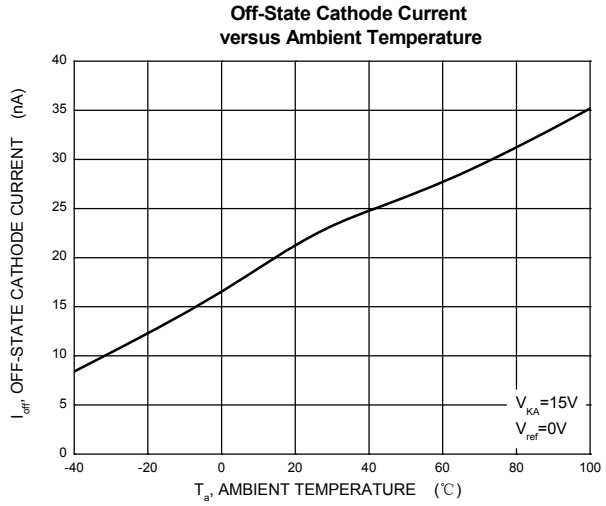


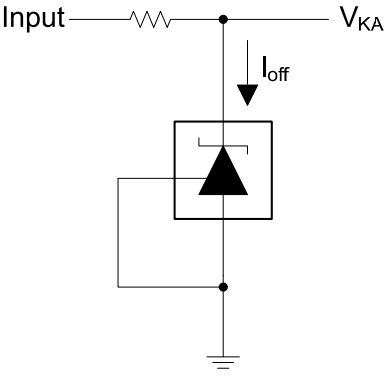
Test Circuit for $V_{KA}=V_{ref}(1+R1/R2)+R1*I_{ref}$





Test Circuit for I_{ref}





Test Circuit for I_{off}