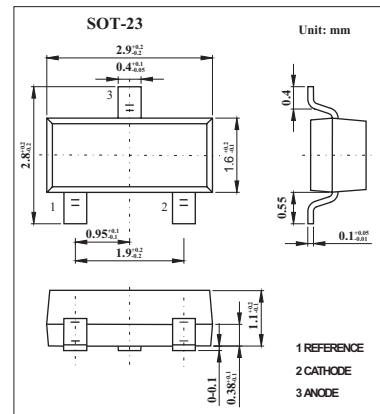


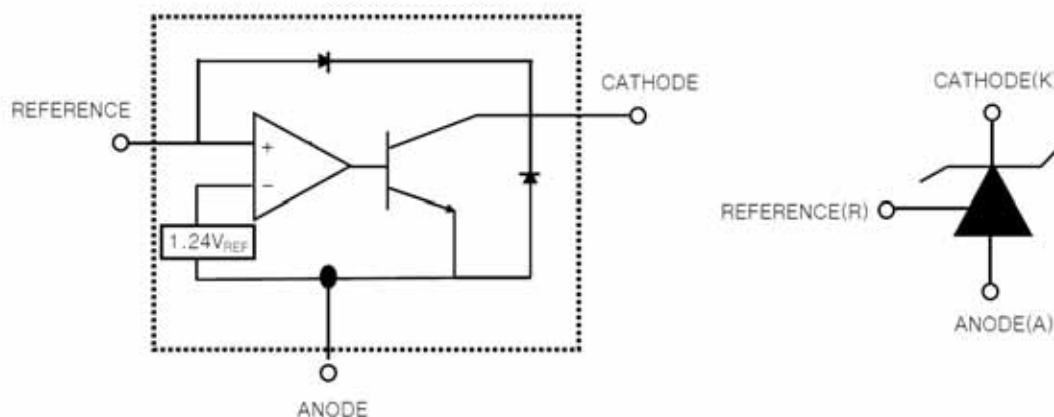
Low Voltage Adjustable Precision Shunt Regulator TL432

■ Features

- Low Voltage Operation : 1.24 V
- Programmable Out Voltage to 15V
- Sink Current Capability of 1 mA to 100 mA
- Equivalent Full-Range Temperature Coefficient of 50ppm/°C
- Temperature Compensated for Operation over Full Rated Operating Temperature Range
- Trimmed Bandgap to 5%
- Reference Input Voltage: $1.24 \pm 0.5\%$



■ Function Block Diagram



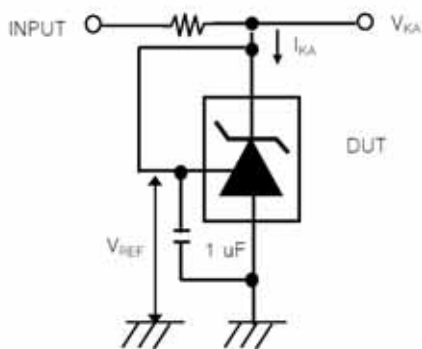
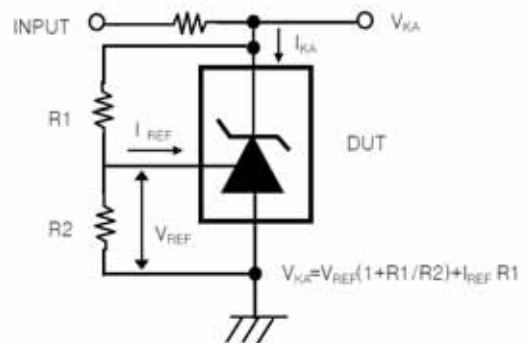
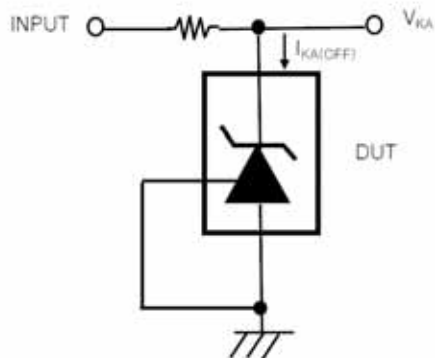
■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Cathode Voltage	V_{KA}	15	V
Continuous Cathode Current Range	I_{KA}	100	mA
Reference Input Current Range	I_{REF}	-0.05 to 3	mA
Total Power Dissipation	P_D	370	mW
Junction Temperature	T_J	-40 to 150	°C
Operating Temperature	T_{OPR}	0 to 70	°C
Storage Temperature	T_{STG}	-65 to 150	°C

TL432

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Reference Input Voltage	V_{ref}	$V_{KA}=V_{REF}, I_{KA}=10\text{mA}$	1.233	1.24	1.247	V
Deviation of reference Input Voltage Over Full Temperature Range	$\Delta V_{ref}/\Delta T$	$V_{KA}=V_{REF}, I_{KA}=10\text{mA}$		10	25	mV
		$T_A=\text{Full Range}$				
Ratio Of Change in Reference Input Voltage to the change in Cathode Voltage	$\Delta V_{ref}/\Delta V_{KA}$	$V_{KA}=1.25\text{V to }14.5\text{V}$		1.0	2.7	mV/V
Reference input Current	I_{ref}	$R_1=10\text{K}\Omega, R_2=\infty$		0.5	1	μA
Deviation Of Reference Input Current Over Full Temperature Range	$\Delta I_{ref}/\Delta T$	$R_1=10\text{K}\Omega, R_2=\infty, T_A=\text{fullTemperature}$		0.05	0.3	μA
Minimum cathode current for regulation	$I_{KA(\text{min})}$	$V_{KA}=V_{REF}$		60	80	μA
Off-state cathode Current	$I_{KA(\text{OFF})}$	$V_{KA}=15\text{V}, V_{REF}=0$		0.04	0.5	μA
Dynamic impedance	Z_{KA}	$V_{KA}=V_{REF}, I_{KA}=0.1\text{ to }20\text{mA}, f \leq 1.0\text{KHz}$		0.2	0.4	Ω

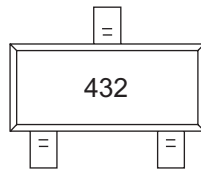
Fig. 1 Test Circuit for $V_{KA}=V_{REF}$ Fig. 2 Test Circuit for $V_{KA} \geq V_{REF}$ Fig. 3 Test Circuit for $I_{KA}(\text{off})$ 

TL432

■ Ordering Information

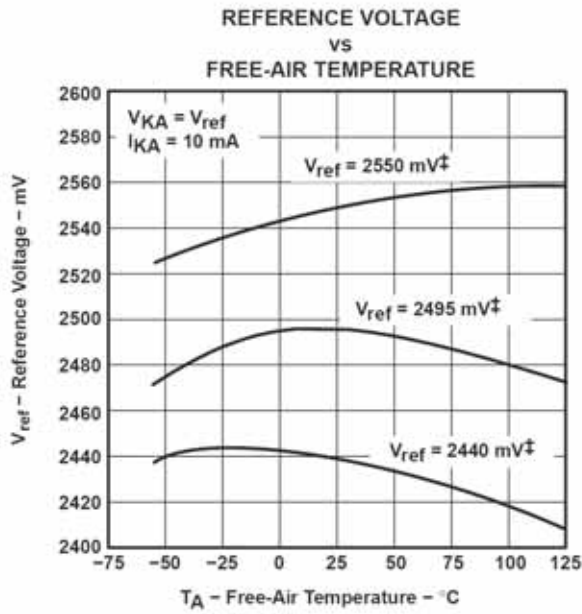
Deivece	Packaging	Shipping
TL432	SOT23	3000/Tape & Reel

■ Marking Information

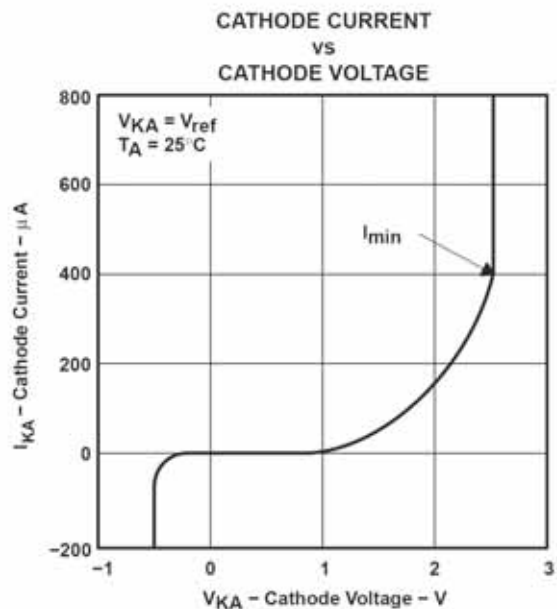
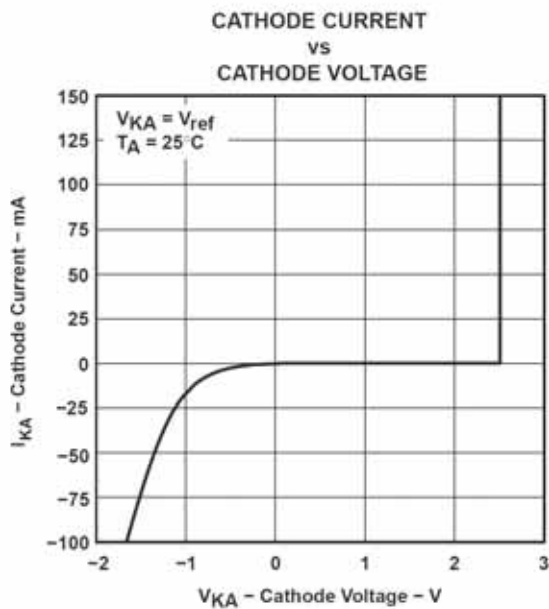
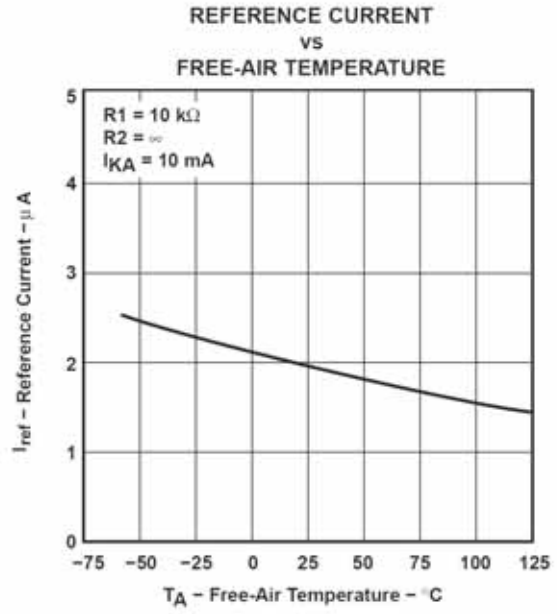


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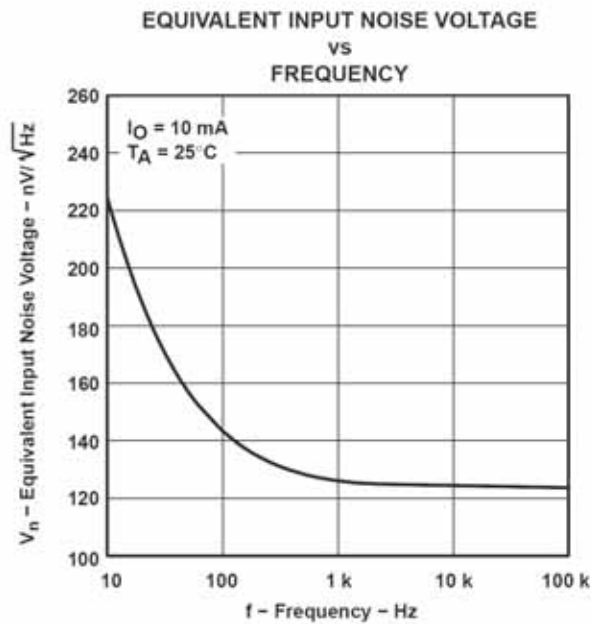
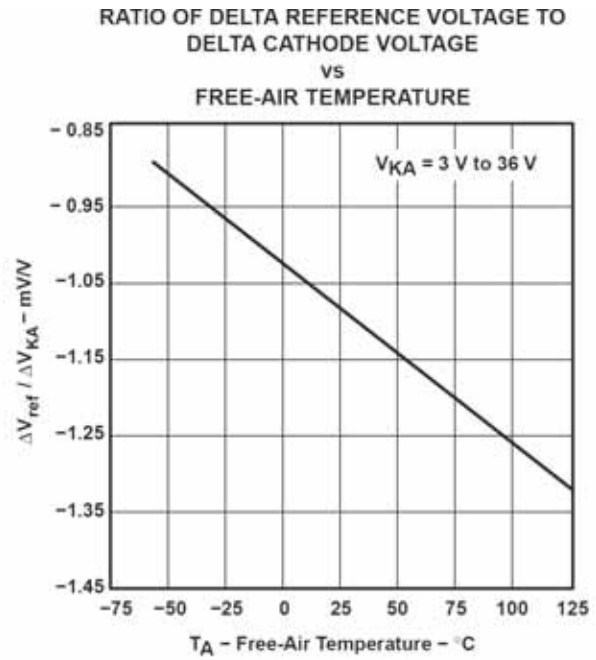
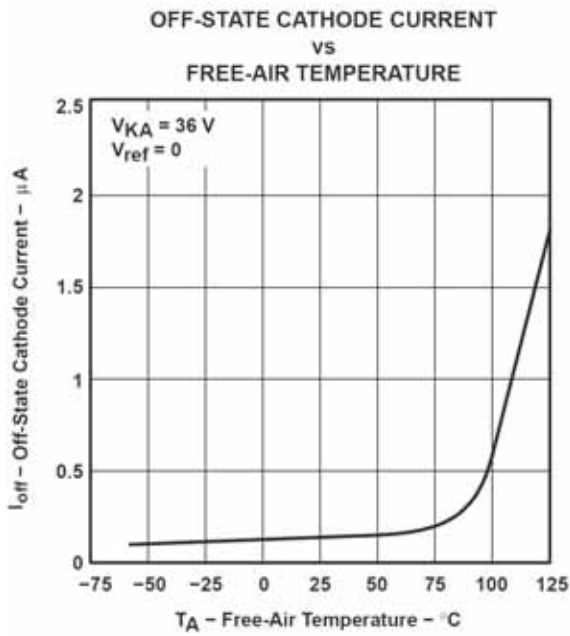
■ TypIacl Characteristics



‡ Data is for devices having the indicated value of V_{ref} at $I_{KA} = 10$ mA, $T_A = 25^\circ\text{C}$.



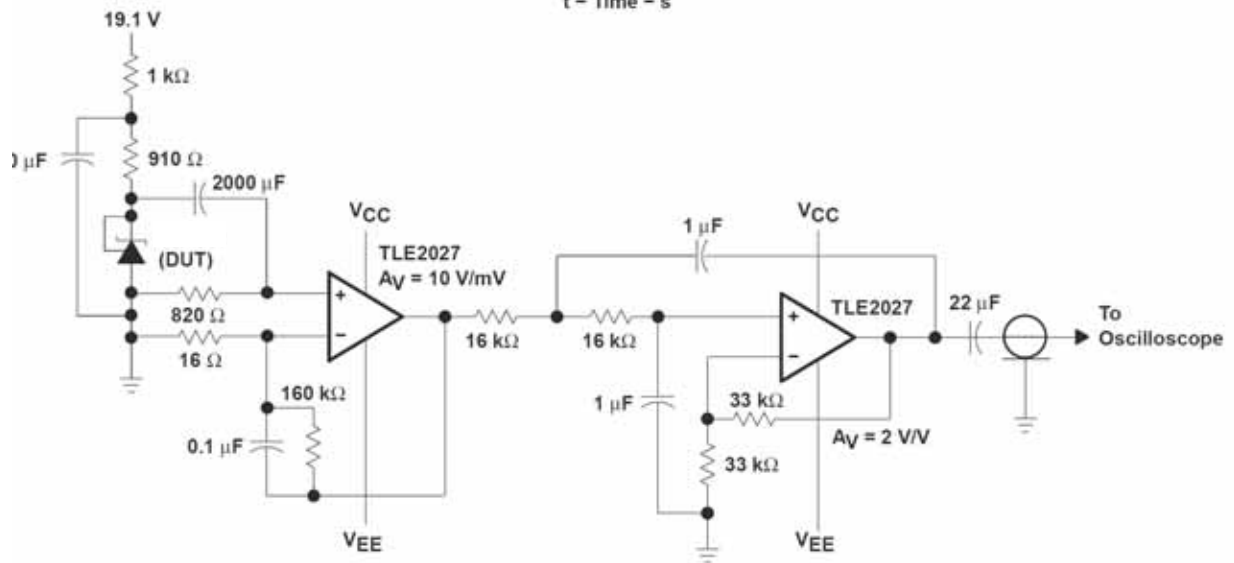
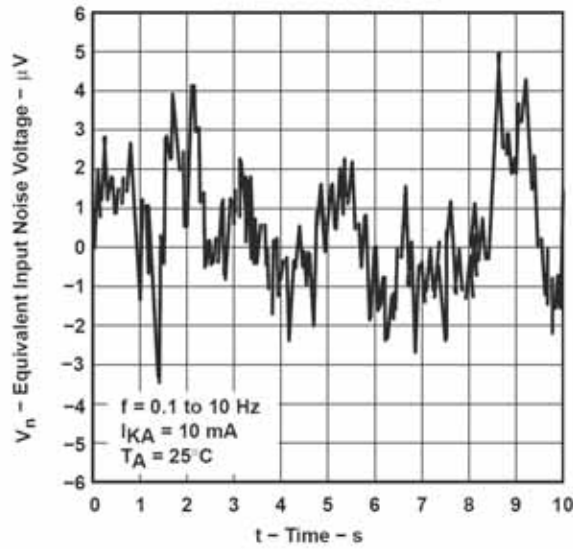
TL432



TL432

TYPICAL CHARACTERISTICS

EQUIVALENT INPUT NOISE VOLTAGE OVER A 10-S PERIOD

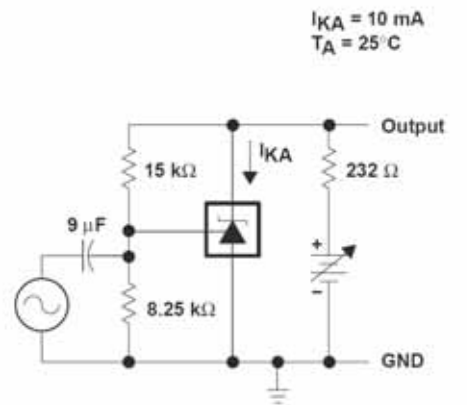
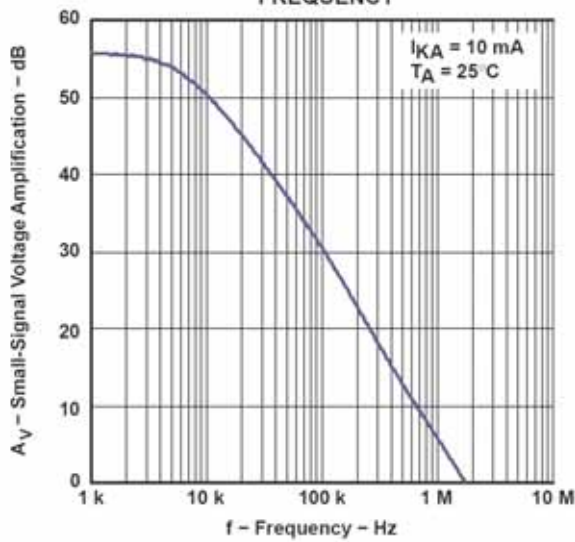


Test Circuit for Equivalent Input Noise Voltage

TL432

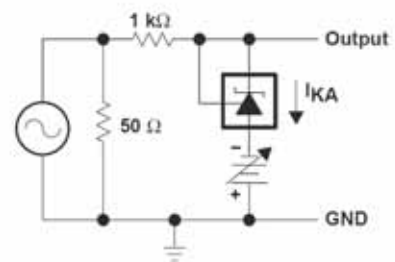
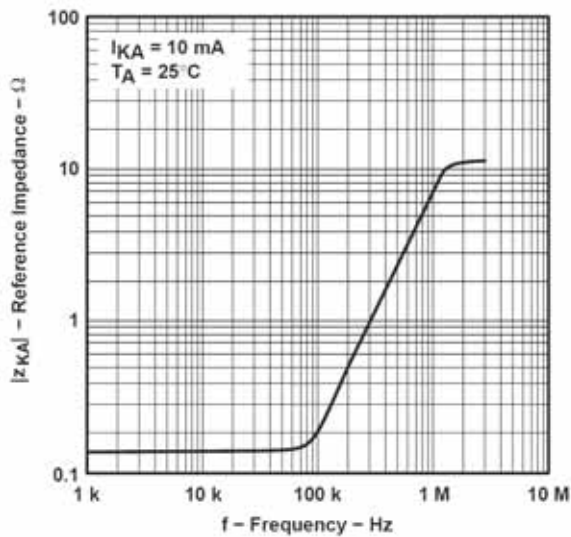
TYPICAL CHARACTERISTICS

SMALL-SIGNAL VOLTAGE AMPLIFICATION
VS
FREQUENCY



TEST CIRCUIT FOR VOLTAGE AMPLIFICATION

REFERENCE IMPEDANCE
VS
FREQUENCY



TEST CIRCUIT FOR REFERENCE IMPEDANCE

TL432

