

Cathode-Anode Reverse Breakdown V _{KA}	20V
Anode-Cathode Forward Current, (<10ms) I _{AK}	1A
Operating Cathode Current I _{KA}	80mA
Reference Input Current I _{REF}	1mA

TO-92.....	775mW
SOT-23.....	200 mW
SOIC-8.....	750mW
Junction Temperature T_J	150 °C
Storage Temperature T_{STG}	-65°C to 150 °C
Lead Temperature (Soldering 10 sec.) T_L	300°C

RECOMMENDED CONDITIONS

PARAMETER	SYMBOL	RATING	UNIT
Cathode Voltage	V_{KA}	V_{REF} to 18	V
Cathode Current	I_K	10	mA

PACKAGE	θ_{JA}	θ_{JC}	TYPICAL DERATING
TO-92	160°C/W	80°C/W	6.3mW/°C
SOT-23	575°C/W	150°C/W	1.7 mW/°C
SOIC-8	175°C/W	45°C/W	5.7mW/°C

ELECTRICAL CHARACTERISTICS

$$V_{KA} = V_{REF} \text{ and } I_K = 10\text{mA.}$$

PARAMETER	SYMBOL	TEST CIRCUIT	CONDITIONS	MIN	TYP	MAX	MIN	TYP	MAX	UNITS
				SPX432A			SPX432			
Output Voltage	V _{REF}	3a		1.2338	1.240	1.2462	1.2276	1.240	1.2524	V
Temperature Deviation	V _{REF}	3a	0 < T _J < 105°C		12	20		12	20	mV
Line Regulation	V _{REF}	3b	V _{KA} = 1.25V to 15V		19	37		19	37	mV
Load Regulation	V _{REF}	3a	I _K = 1mA to 80mA		12	30		12	30	mV
Reference Input Current	I _{REF}	3b			3	6		3	6	μA
Reference Input Current Temperature Coefficient	I _{REF}	3b	0 < T _J < 105°C,		0.3	0.6		0.3	0.6	μA
Minimum Cathode Current for Regulation	I _{K(MIN)}	3a			0.6	1		0.6	1	mA
Off State Leakage	I _{K(MIN)}	3c	V _{REF} = 0V, V _{KA} = 18V		0.04	500		0.04	500	nA

CALCULATION AVERAGE TEMPERATURE COEFFICIENT (TC)

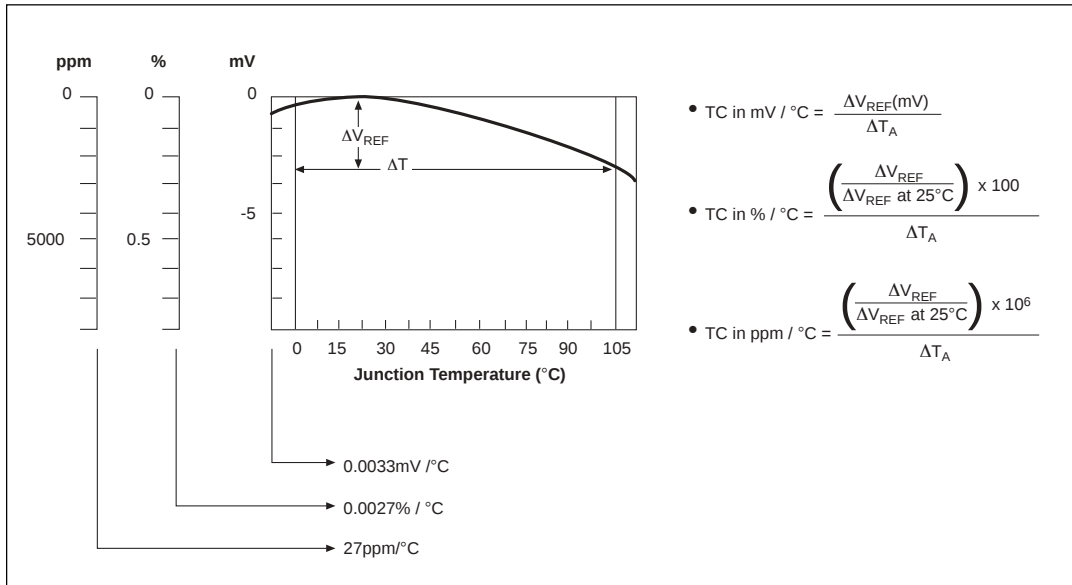


Figure 1. V_{REF} VS Temperature.

TEST CIRCUITS

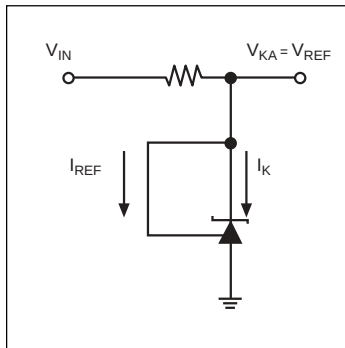


Figure 2. Test Circuit for $V_{KA} = V_{REF}$

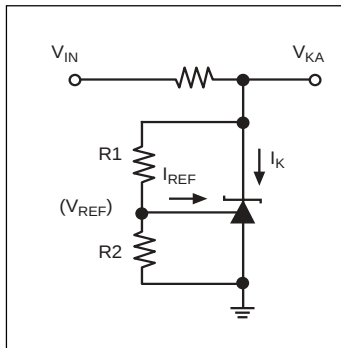


Figure 3. Test Circuit for $V_{KA} > V_{REF}$

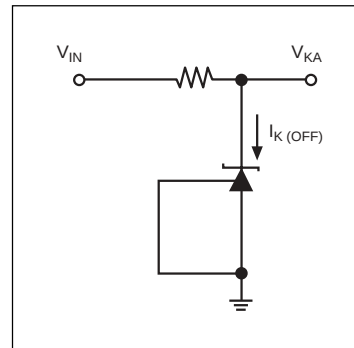
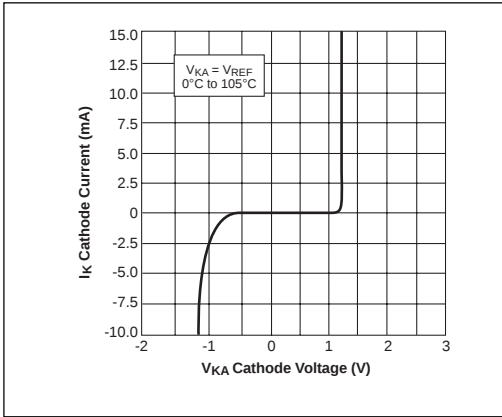
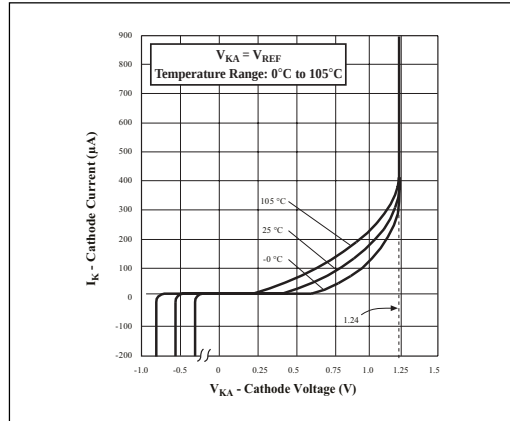


Figure 4. Test Circuit for I_{KOFF}

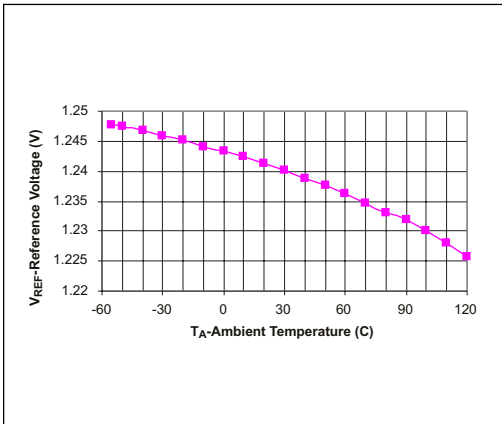
TYPICAL PERFORMANCE CHARACTERISTICS



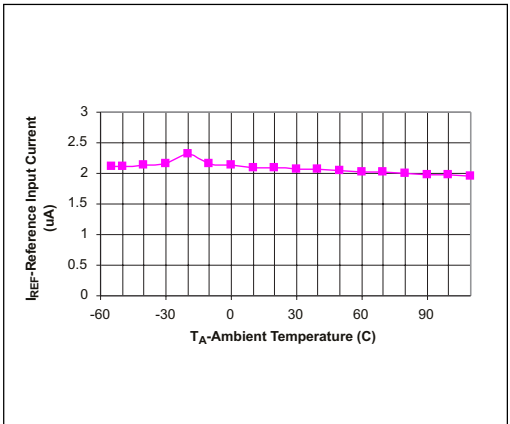
High Current Operating Characteristics.



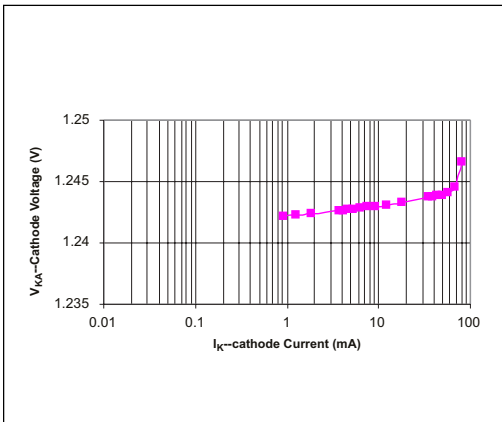
Low Current Operating Characteristics.



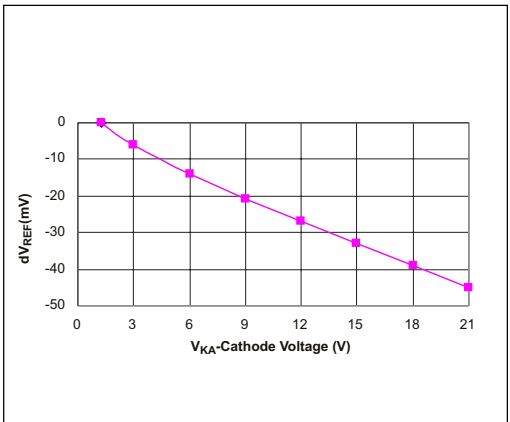
$V_{KA} = V_{REF}$, $I_{KA} = 10\text{mA}$.



Reference Input Current VS Temperature; $I_{KA} = 10\text{mA}$.

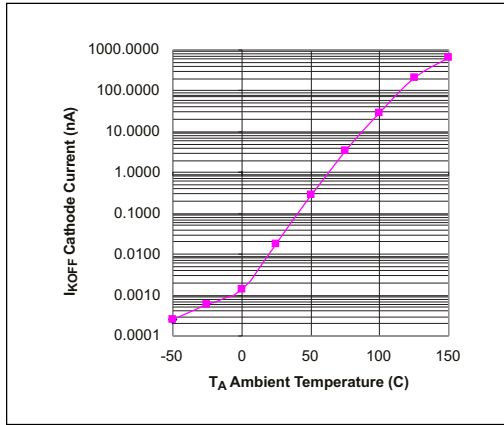


$V_{KA} = V_{REF}$, Sweeping I_{KA} , 25°C .

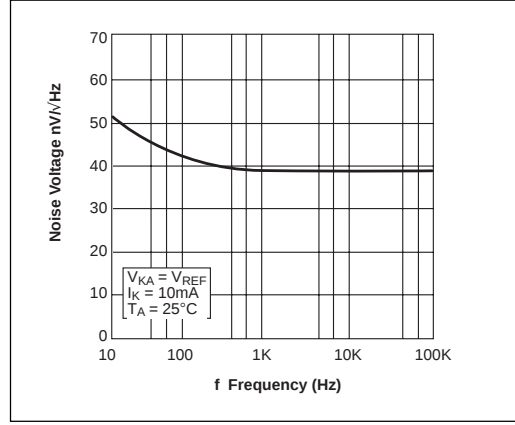


Reference Voltage Line Regulation; $I_{KA} = 10\text{mA}$, Sweeping V_{KA} , 25°C .

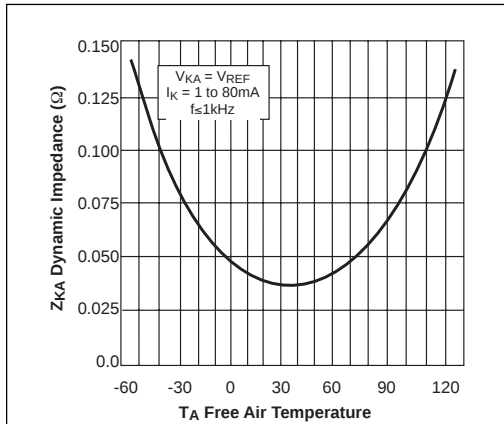
TYPICAL PERFORMANCE CHARACTERISTICS



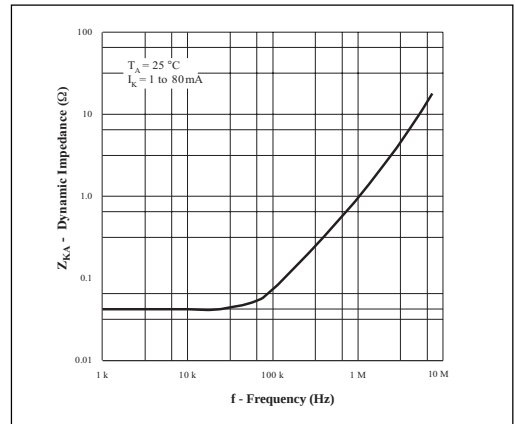
Off State Leakage; $V_{KA} = 18V$, $V_{REF} = 0V$.



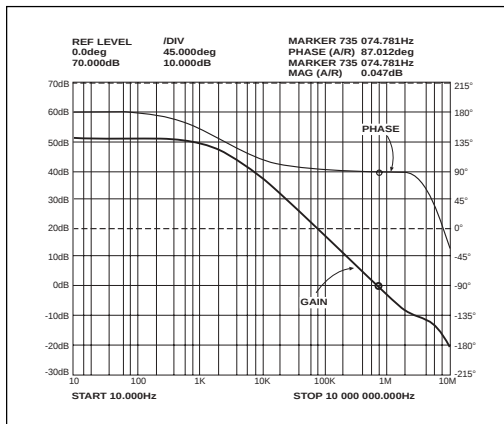
Noise Voltage VS Frequency.



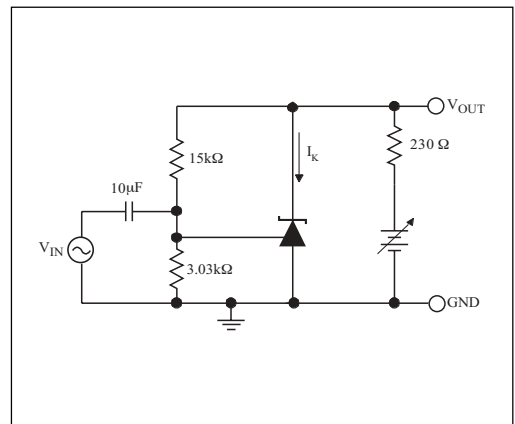
Low Frequency Dynamic Output Impedance VS $T_{AMBIENT}$



Dynamic Output Impedance $T_A = 25^\circ C$, $I_{KA} = 1$ to 80mA.

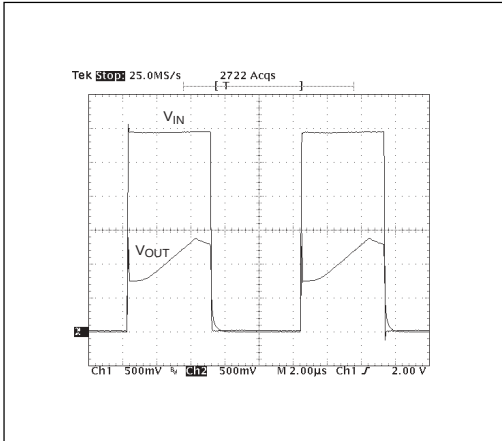


Small Signal Gain and Phase VS Frequency; $I_K = 10mA$, $T_A = 25^\circ C$.

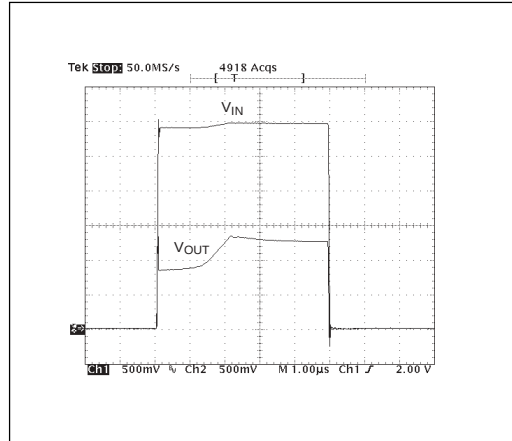


Test Circuit for Gain and Phase Frequency Response.

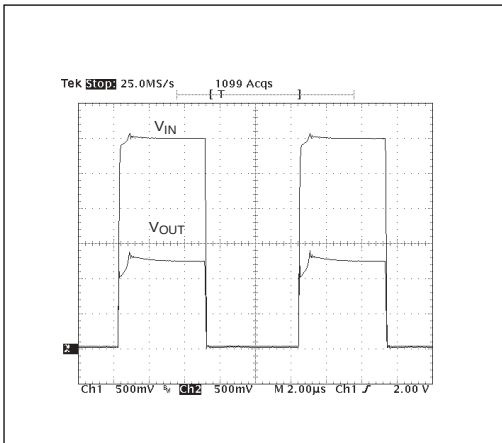
TYPICAL PERFORMANCE CHARACTERISTICS



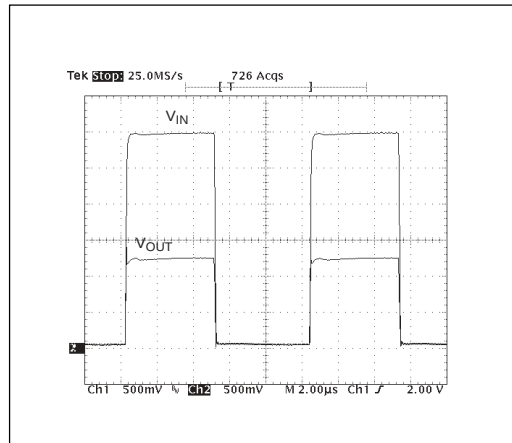
$I_{KA} = 0 \text{ to } 1\text{mA}$.



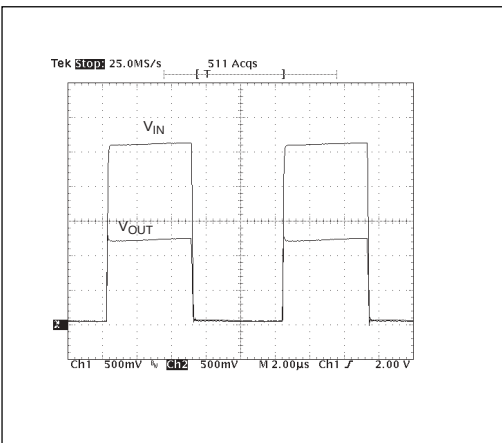
$I_{KA} = 0 \text{ to } 10\text{mA}$.



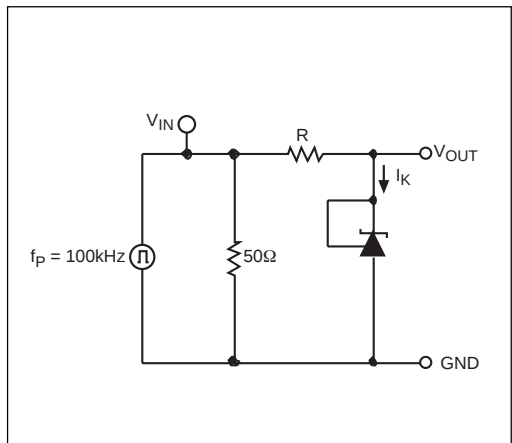
$I_{KA} = 0 \text{ to } 50\text{mA}$.



$I_{KA} = 0 \text{ to } 80\text{mA}$.

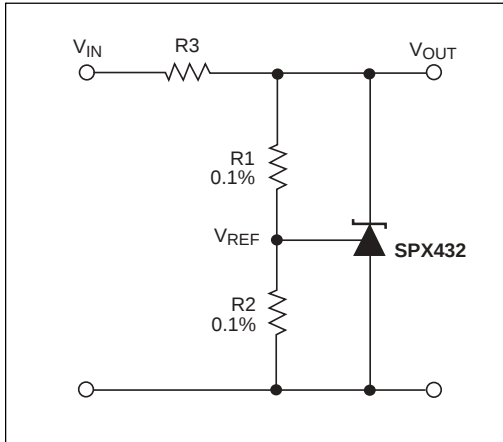


$I_{KA} = 0 \text{ to } 100\text{mA}$.

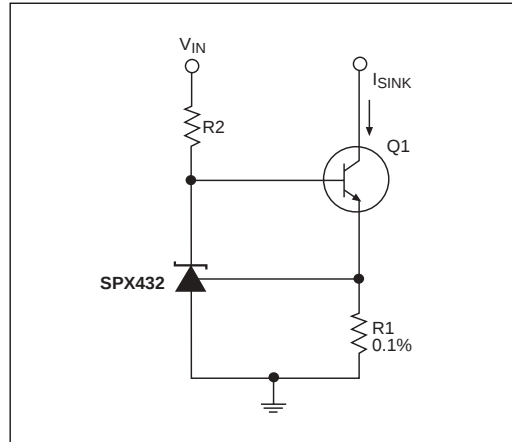


Test Circuit for Pulse Response.

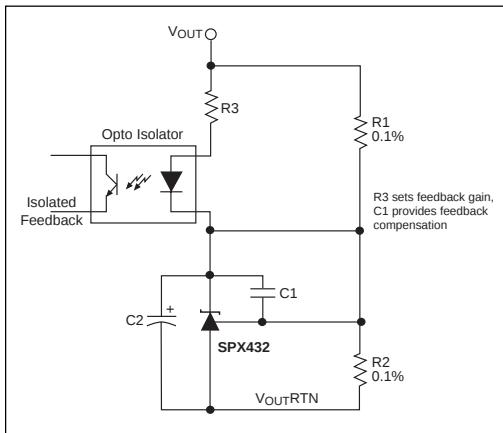
TYPICAL PERFORMANCE CHARACTERISTICS



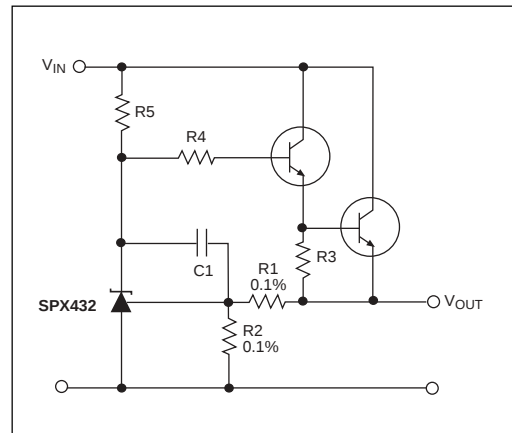
Shunt Regulator, $V_{OUT} = (1+R1/R2)V_{REF}$.



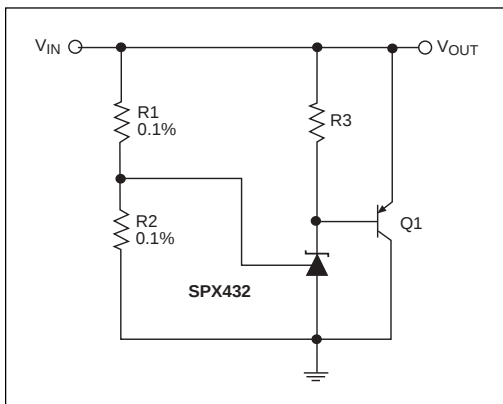
Constant Current Sink $I_{SINK} = V_{REF}/R1$.



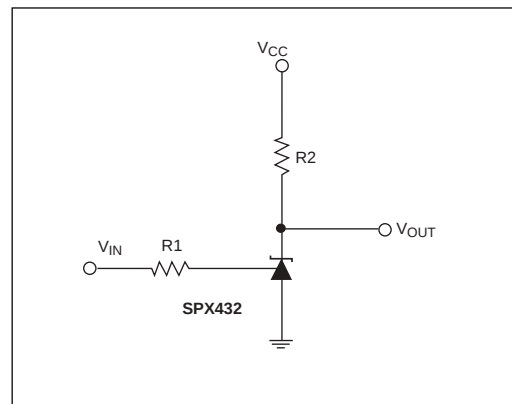
Reference Amplifier for Isolated Feedback in Off-Line DC-DC Converters.



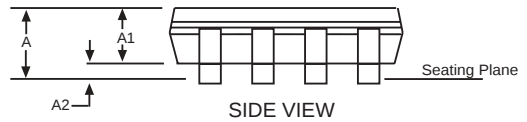
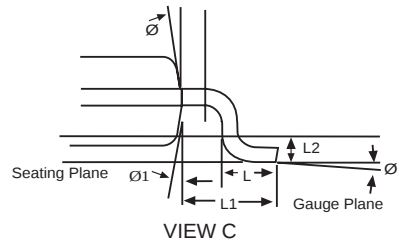
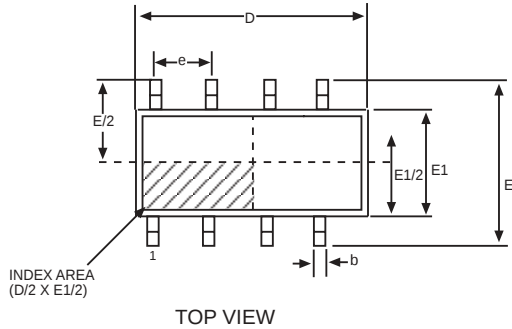
Precision High Current Series Regulator, $V_{OUT} = (1+R1/R2)V_{REF}$.



High Current Shunt Regulator, $V_{OUT} = (1+R1/R2)V_{REF}$.

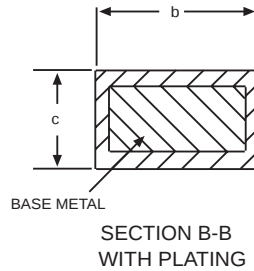
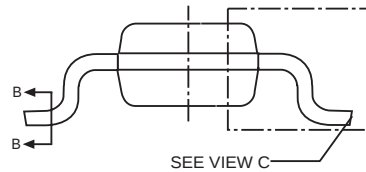


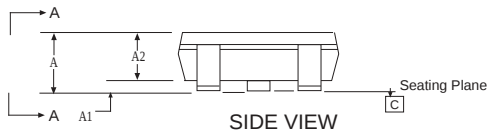
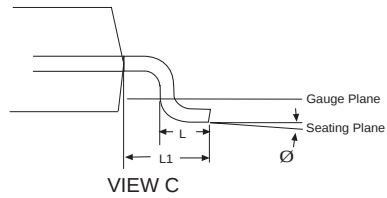
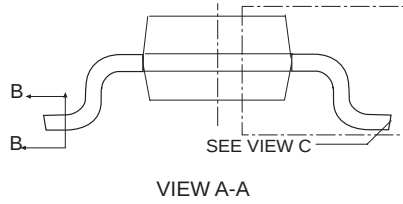
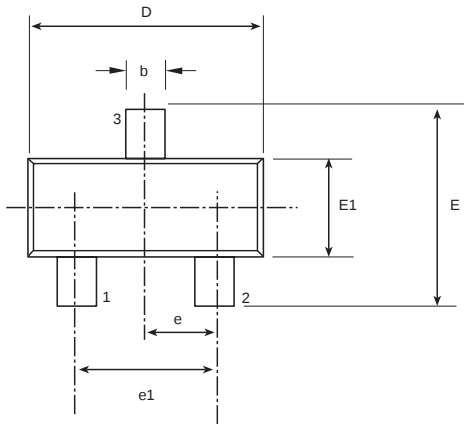
Single Supply Comparator with Temperature Compensated Threshold, V_{IN} threshold = 1.24V.



8 Pin NSOIC JEDEC MO-012 (AA) Variation			
SYMBOL	MIN	NOM	MAX
A	1.35	-	1.75
A1	0.1	-	0.25
A2	1.25	-	1.65
b	0.31	-	0.51
c	0.17	-	0.24
D	4.90 BSC		
E	6.00 BSC		
E1	3.90 BSC		
e	1.27 BSC		
L	0.4	-	1.27
L1	1.04 REF		
L2	0.25 BSC		
Ø	0°	-	8°
Ø1	5°	-	15°

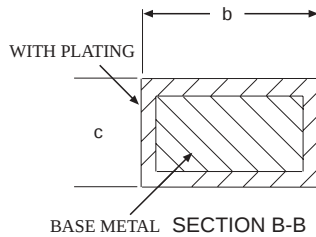
Note: Dimensions in (mm)

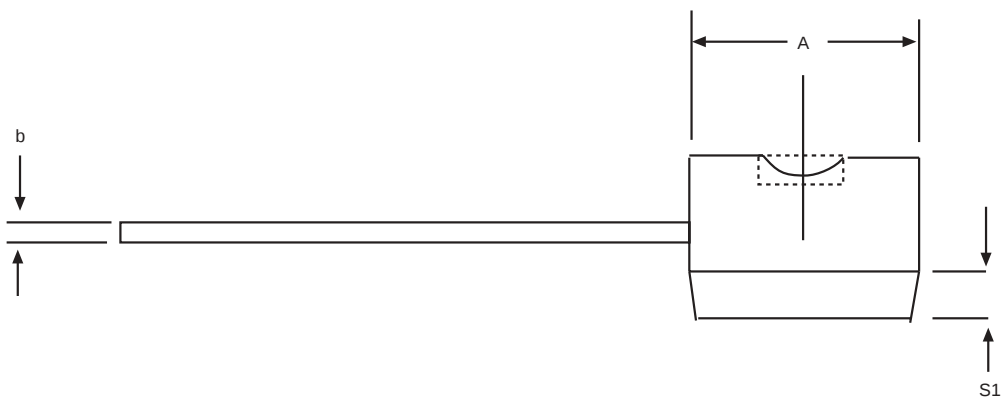
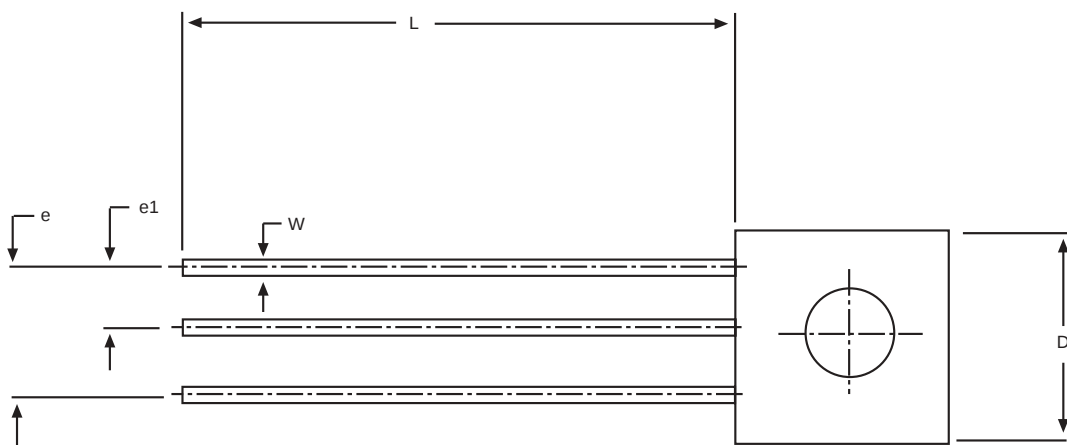




3 Pin SOT-23 JEDEC TO-236 (AB) Variation			
SYMBOL	MIN	NOM	MAX
A	0.89	-	1.12
A1	0.01	-	0.1
A2	0.88	0.95	1.02
b	0.3	-	0.5
c	0.08	-	0.2
D	2.8	2.9	3.04
e	0.95 BSC		
e1	1.90 BSC		
E	0.95	-	2.64
E1	1.2	1.3	1.4
L	0.4	0.5	0.6
L1	0.54 REF		
Ø	0°	-	8°

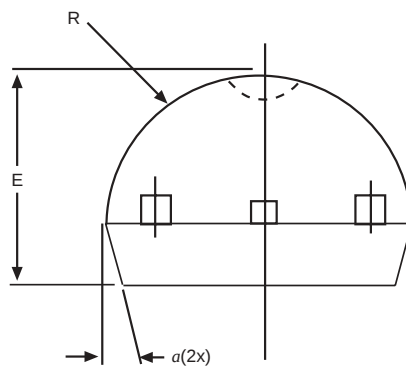
Note: Dimensions in (mm)

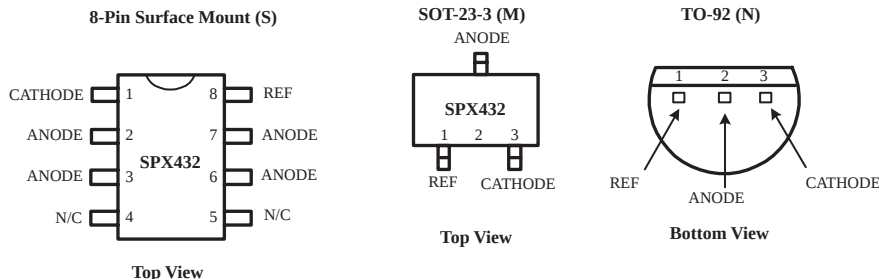




3 Pin TO-92			
SYMBOL	MIN	NOM	MAX
A	0.17	-	0.195
b	0.014	-	0.02
E	0.13	-	0.155
e	0.95	-	0.105
e1	0.045	-	0.055
L	0.5	-	0.61
R	0.085	-	0.095
S1	0.045	-	0.06
W	0.016	-	0.022
D	0.175	-	0.195
a	4°	-	6°

Note: Dimensions in (inches)





ORDERING INFORMATION

PART NUMBER	ACC	OUTPUT VOLTAGE	PACKAGES
SPX432AM	0.5%	1.24V	3-Pin SOT-23
SPX432AM/TR	0.5%	1.24V	3-Pin SOT-23
SPX432AS	0.5%	1.24V	8-Pin NSOIC
SPX432AS/TR	0.5%	1.24V	8-Pin NSOIC
SPX432AN	0.5%	1.24V	3-Pin TO-92
SPX432AN/TR	0.5%	1.24V	3-Pin TO-92
SPX432M	1.0%	1.24V	3-Pin SOT-23
SPX432M/TR	1.0%	1.24V	3-Pin SOT-23
SPX432S	1.0%	1.24V	8-Pin NSOIC
SPX432S/TR	1.0%	1.24V	8-Pin NSOIC
SPX432N	1.0%	1.24V	3-Pin TO-92
SPX432N/TR	1.0%	1.24V	3-Pin TO-92

Available in lead free packaging. To order add "-L" suffix to part number.

Example: SPX432AM/TR = standard; SPX432AM-L/TR = lead free

/TR = Tape and Reel

Pack quantity is 2,000 for TO-92 and 2500 for SOT-23 and NSOIC.

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ANALOG EXCELLENCE

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