

Description

The SL432 series are 3-terminal precision shunt regulators that are programmable over a wide voltage range of 1.24V to 16V with 1.0%, 2.0% tolerance. The SL432 series have a low dynamic impedance of 0.25Ω . These features make the SL432 series an excellent replacement for zener diodes in numerous applications circuits that require a precision reference voltage.

Features

- Low voltage operation 1.24V
- Programmable output voltage from 1.24V to 16 V
- Voltage reference tolerance 1.0%, 2.0%
- Wide operating current range of 60uA to 30mA

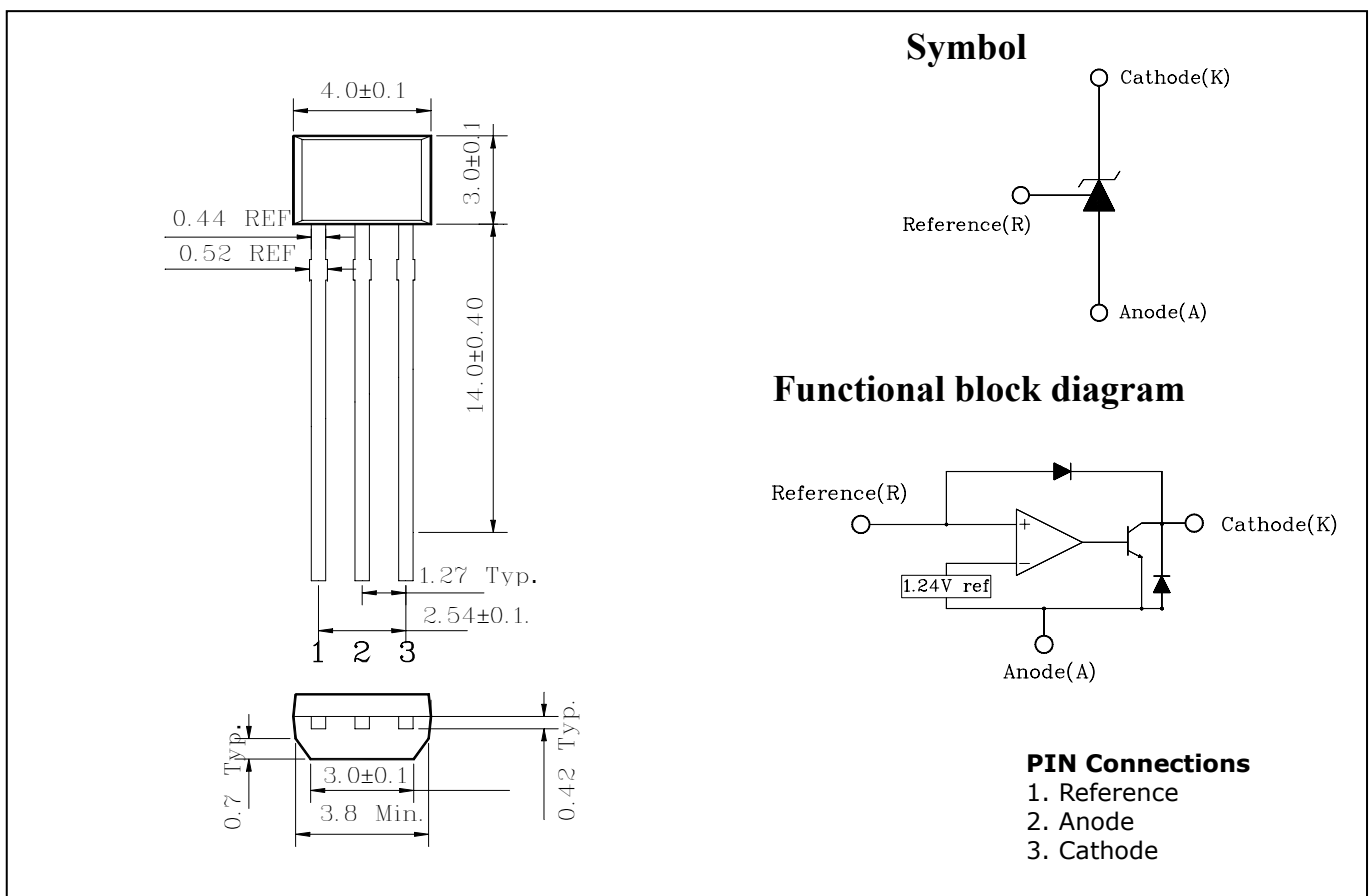
Ordering Information

Type NO.	Marking	Package Code
SL432xM	SL432□	TO-92M

□: Grade => None:±2% , A:±1%

Outline Dimensions

unit : mm



Absolute maximum ratings

(Operating ambient temperature range applies unless other specified)

Parameter	Symbol	Ratings	Unit
Cathode to Anode voltage	V_{KA}	18	V
Cathode current range	I_{KA}	-20 ~ +30	mA
Reference input current range	I_{ref}	-0.05 ~ +10	mA
Power dissipation	P_D	500	mW
Operating temperature range	T_{opr}	-40 ~ +85	°C
Storage temperature range	T_{stg}	-65 ~ +150	°C

Recommended operating conditions

Parameter	Symbol	Ratings		Unit
		Min.	Max.	
Cathode to Anode voltage	V_{KA}	V_{ref}	16	V
Cathode current range	I_{KA}	0.1	30	mA

Electrical Characteristics

(Ambient temperature at 25°C, $C_L=0.1\mu F$, unless otherwise noted.)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reference input voltage (Fig. 1, Note 1)	V_{ref}	$V_{KA}=V_{ref}, I_{KA}=10mA$	SL432AM	1.228	1.252	V
			SL432M	1.215	1.265	
Deviation of reference input voltage Over temperature(Fig. 1, Note 1,2)	ΔV_{ref}	$V_{KA}=V_{ref}, I_{KA}=10mA$ @ $T_A=T_{LOW}$ to T_{HIGH}	-	10	20	mV
Ratio of change in reference input Voltage to the change in cathode Voltage(Fig. 2)	$\frac{\Delta V_{ref}}{\Delta V_{KA}}$	$I_{KA}=10mA$ $\Delta V_{KA}=V_{ref}-16V$	-	1.0	2.7	mV/V
Reference input current(Fig. 2)	I_{ref}	$I_{KA}=10mA$ $R1=10K\Omega, R2=\infty$	-	0.7	1.0	μA
Deviation of reference input current over temperature(Fig. 2)	ΔI_{ref}	$I_{KA}=10mA$ $R1=10K\Omega, R2=\infty$	-	0.04	0.08	μA
Minimum cathode current for Regulation(Fig. 1)	I_{MIN}	$V_{KA}=V_{ref}$	-	55	80	μA
Off-state cathode current(Fig. 3)	I_{OFF}	$V_{KA}=16V, V_{ref}=0V$	-	5	50	nA
Dynamic impedance(Fig. 1, Note 3)	Z_{KA}	$V_{KA}=V_{ref}, f \leq 1.0KHz$ $I_{KA}=0.1mA-30mA$	-	0.25	0.4	Ω

Fig. 1

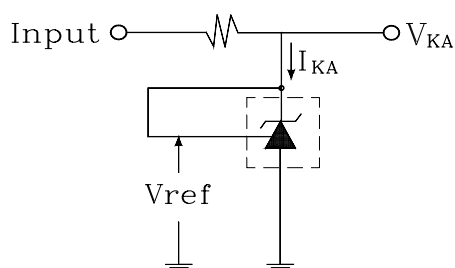


Fig. 2

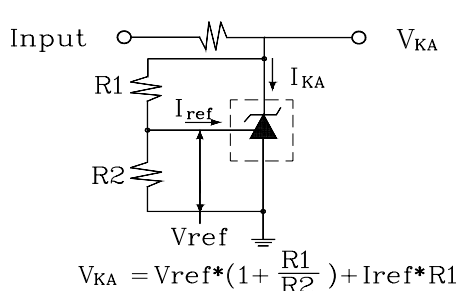
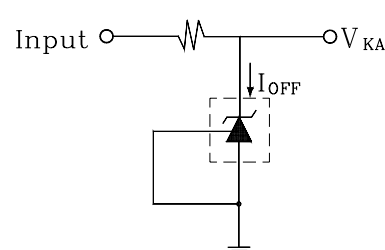


Fig. 3



<Note 1> : $T_{LOW}=-40^{\circ}C, T_{HIGH}=+85^{\circ}C$, <Note 2> : $\Delta V_{ref}=V_{ref} \text{ Max.} - V_{ref} \text{ Min.}$, <Note 3> : $Z_{KA}= \Delta V_{KA}/ \Delta I_{KA}$

Electrical Characteristics Curves

Fig.1 I_{KA} vs V_{KA}

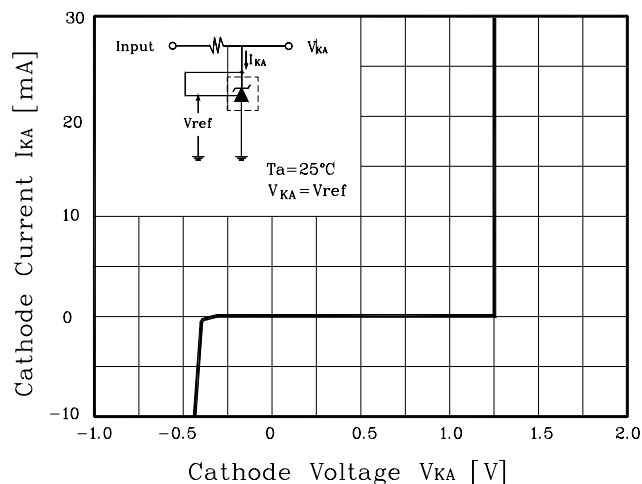


Fig. 2 I_{MIN} vs V_{KA}

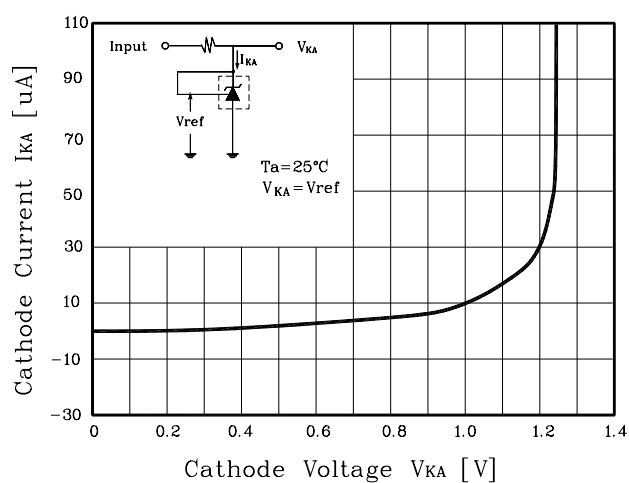


Fig. 3 ΔI_{off} vs T_a

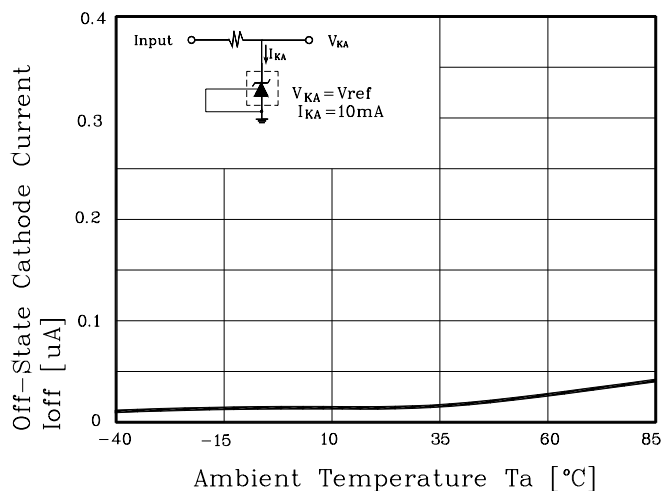


Fig. 4 ΔV_{ref} vs T_a

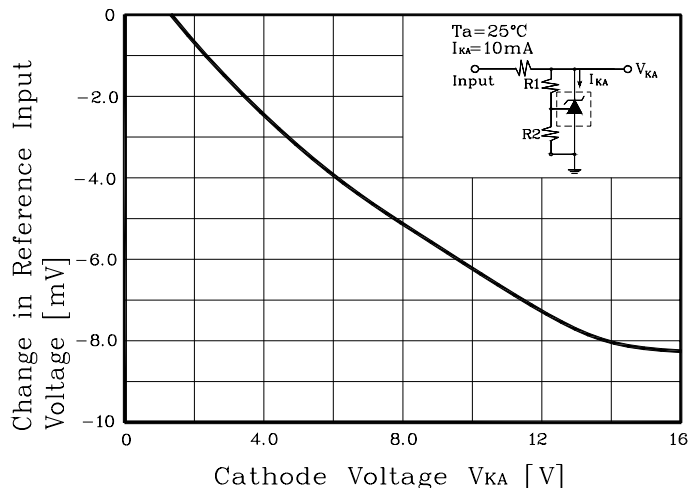


Fig. 5 G_v vs. frequency

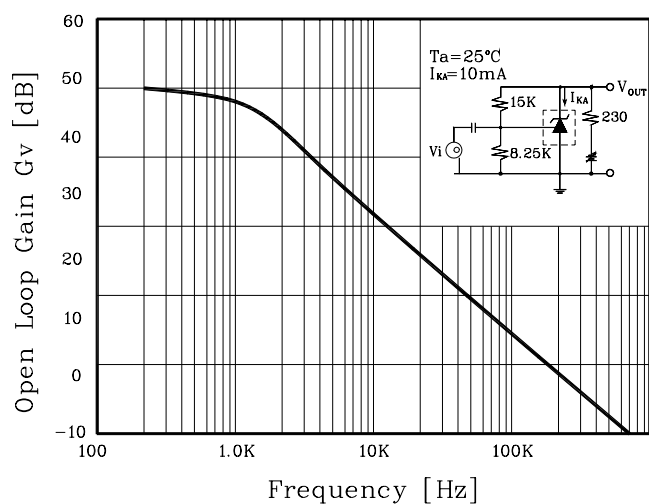
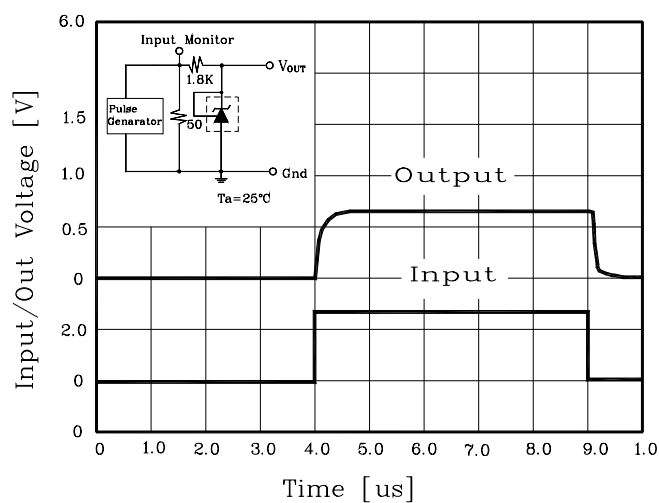


Fig. 6 Pulse Response



These AUK products are intended for usage in general electronic equipments(Office and communication equipment, measuring equipment, domestic electrification, etc.).

Please make sure that you consult with us before you use these AUK products in equipments which require high quality and/or reliability, and in equipments which could have major impact to the welfare of human life(atomic energy control, airplane, spaceship, traffic signal, combustion central, all types of safety device, etc.).

AUK cannot accept liability to any damage which may occur in case these AUK products were used in the mentioned equipments without prior consultation with AUK.