

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 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

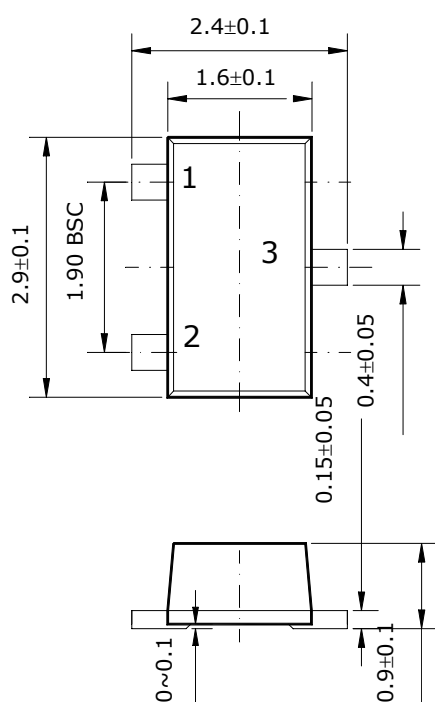
Ordering Information

Type NO.	Marking	Package Code
SL432xSF	42□	SOT-23F

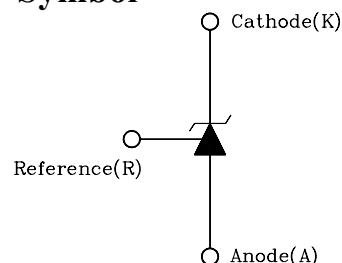
□: Grade => 3:±2%, A:±1%

Outline Dimensions

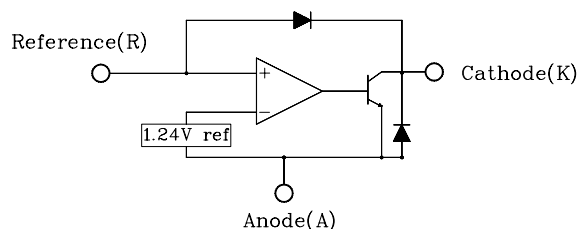
unit : mm



Symbol



Functional block diagram



PIN Connections

1. Reference
2. Cathode
3. Anode

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^*	300	mW
Operating temperature range	T_{opr}	-40 ~ +85	°C
Storage temperature range	T_{stg}	-65 ~ +150	°C

* With PCB(8×8mm copper area) at glass epoxy board($t=1.7$ mm, area : 20×20mm)

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	SL432ASF	1.228	1.240	1.252	V
			SL4323SF	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 ΔV _{KA} =V _{ref} -16V	-	1.0	2.7	mV/V	
Reference input current(Fig. 2)	I _{ref}	I _{KA} =10mA R1=10KΩ, R2=∞	-	0.15	0.8	μA	
Deviation of reference input current over temperature(Fig. 2)	ΔI _{ref}	I _{KA} =10mA R1=10KΩ, R2=∞	-	0.04	0.08	μA	
Minimum cathode current for Regulation(Fig. 1)	I _{MIN}	V _{KA} =V _{ref}	-	60	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 ≤ 1.0KHz I _{KA} =0.1mA-30mA	-	0.25	0.4	Ω	

Fig. 1

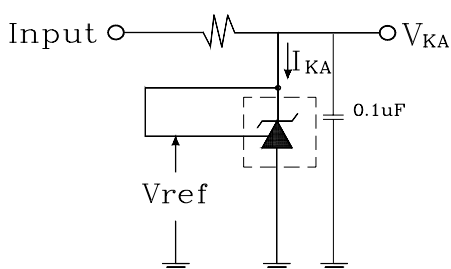


Fig. 2

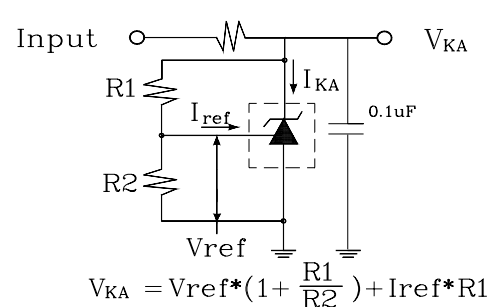
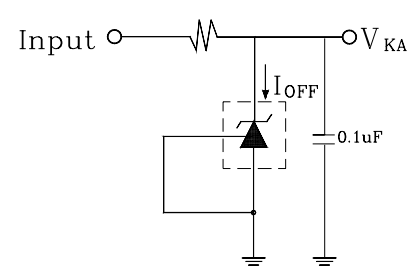


Fig. 3



<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

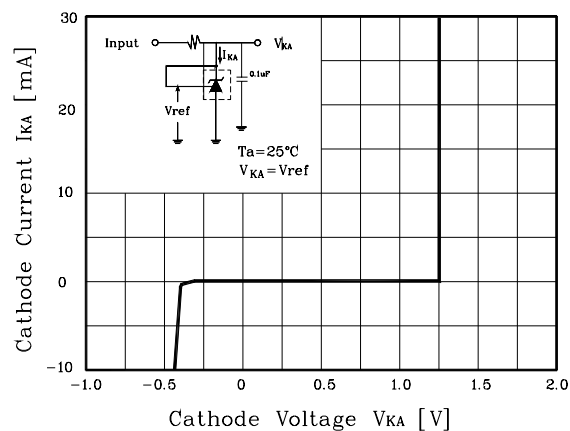
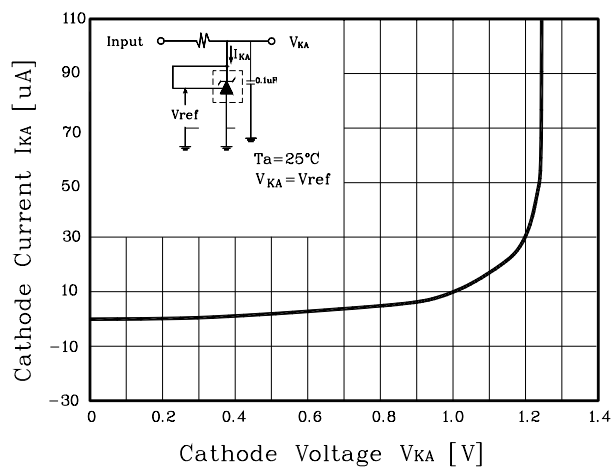
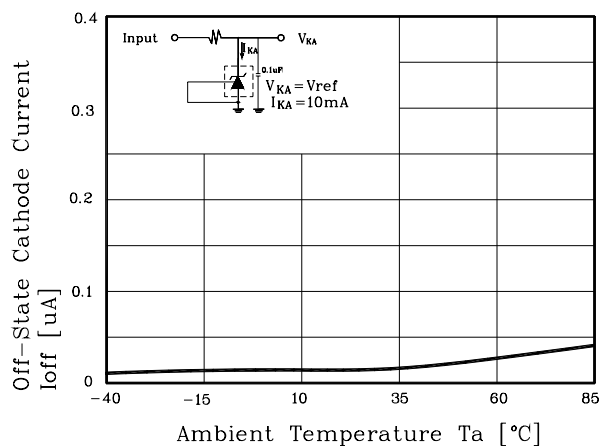
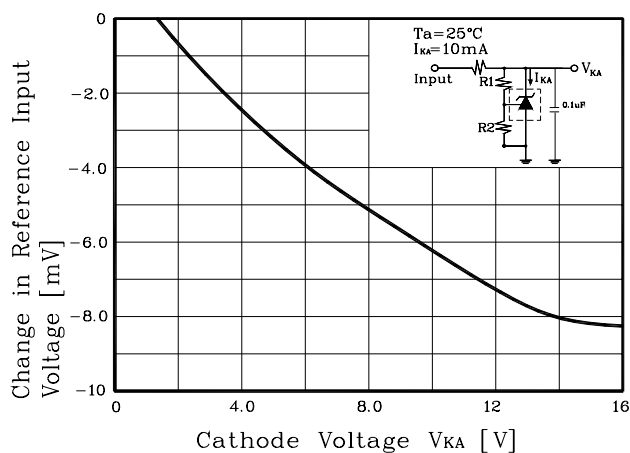
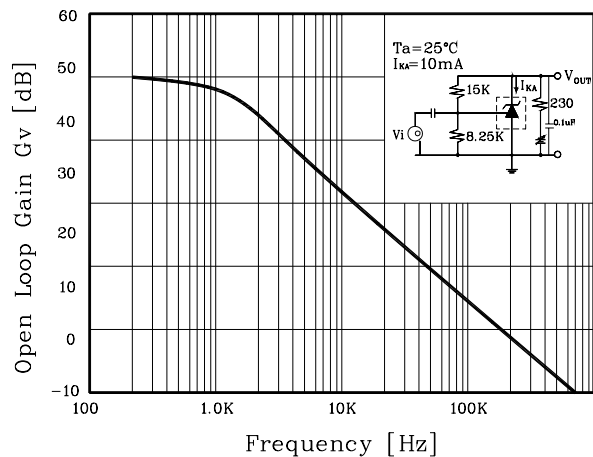
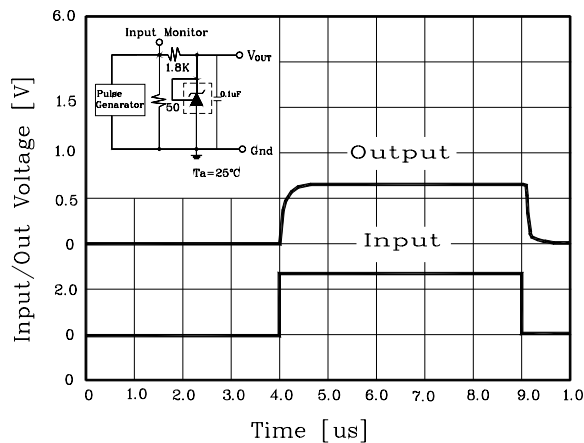
Fig.1 I_{KA} vs V_{KA} Fig. 2 I_{MIN} vs V_{KA} Fig. 3 ΔI_{off} vs T_A Fig. 4 ΔV_{ref} vs T_A Fig. 5 G_v vs. frequency

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.