SOT-23 Encapsulate Adjustable Reference Source
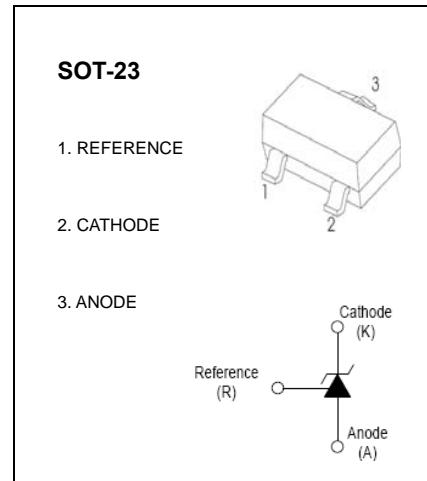
TL432 Adjustable Accurate Reference Source

DEVICE DESCRIPSION

The TL432 is a three-terminal Shunt Voltage Reference providing a highly accurance 1.24V. The TL432 thermal stability and wide operating current, makes is sritable for all variety of applications that are looking for a low cost solution with high performance.

SOT-23

1. REFERENCE

2. CATHODE

3. ANODE

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

APPLICATION

- Shunt Regulator
- High-Current Shunt Regulator
- Precision Current Limiter

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)	△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)	△V$_{ref}$/△V$_{KA}$	I$_{KA}$=10mA, △V$_{KA}$=1.25V~15V			2.4	mV/V
Deviation of reference input current over full temperature range (Fig 2)	△I$_{ref}$/△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$_{ref}$
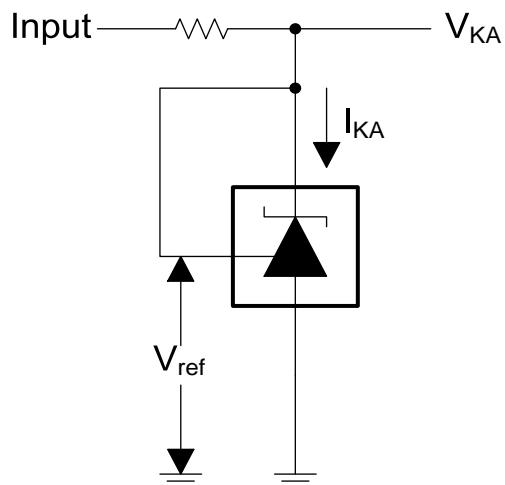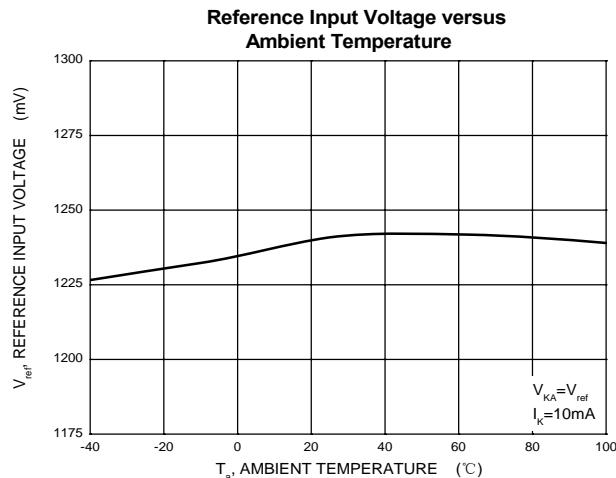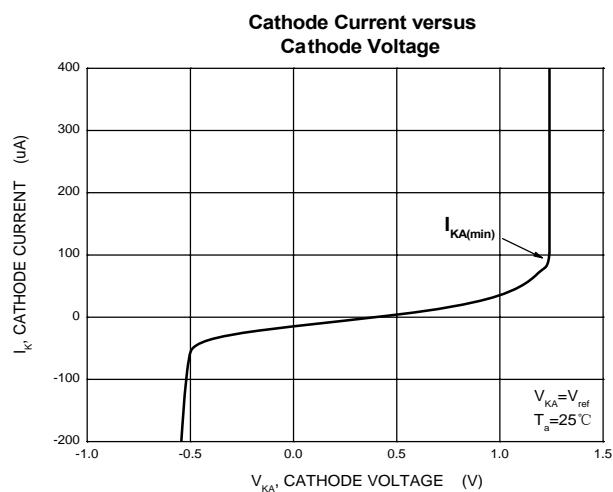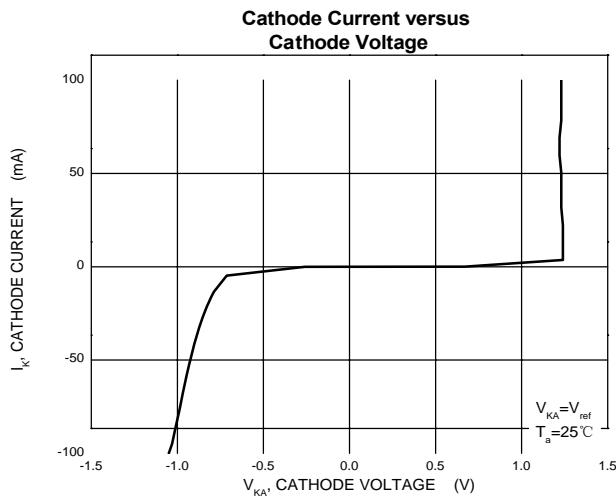
Rank	1%	1.5%
Range	1.2276~1.2524	1.2214~1.2586

www.shike.tw

Typical Characteristics

Cathode Current versus Cathode Voltage

$V_{KA}=V_{ref}$
$T_a=25°C$

I_K, CATHODE CURRENT (mA) vs V_KA, CATHODE VOLTAGE (V)

Cathode Current versus Cathode Voltage

$I_{KA(min)}$

$V_{KA}=V_{ref}$
$T_a=25°C$

I_K, CATHODE CURRENT (uA) vs V_KA, CATHODE VOLTAGE (V)

Reference Input Voltage versus Ambient Temperature

$V_{KA}=V_{ref}$
$I_K=10mA$

V_ref, REFERENCE INPUT VOLTAGE (mV) vs T_a, AMBIENT TEMPERATURE (°C)

Input —√√√— V_{KA}

I_{KA}

V_{ref}

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

**Change in Reference Input
Voltage versus Cathode Voltage**

I_K=10mA
T_a=25℃

$\triangle V_{ref}$, REFERENCE INPUT VOLTAGE (mV) vs V_{KA}, CATHODE VOLTAGE (V)
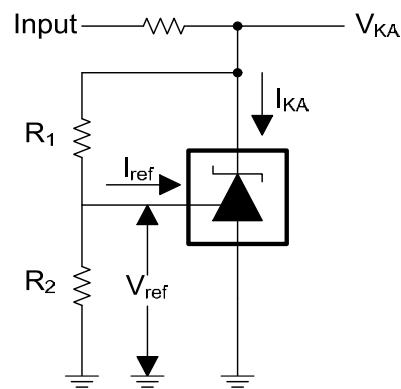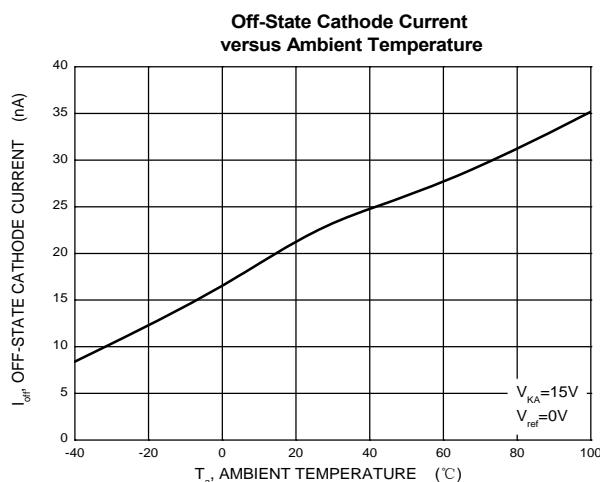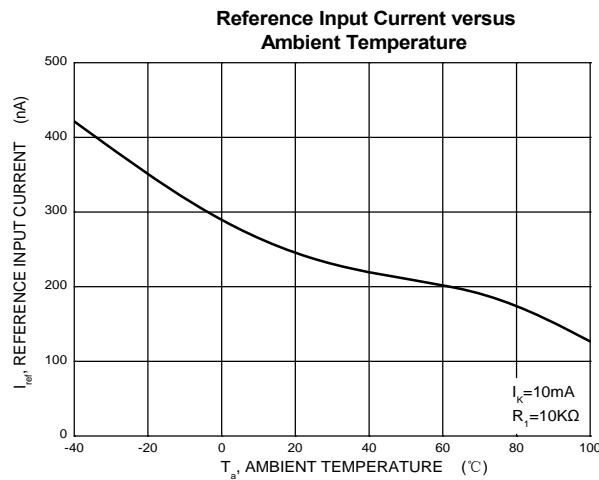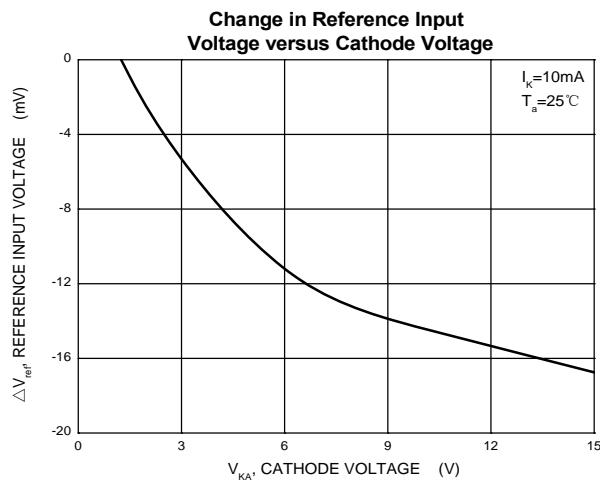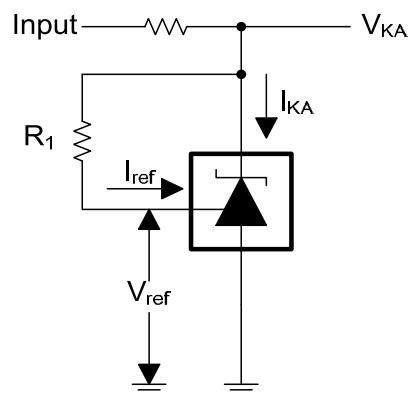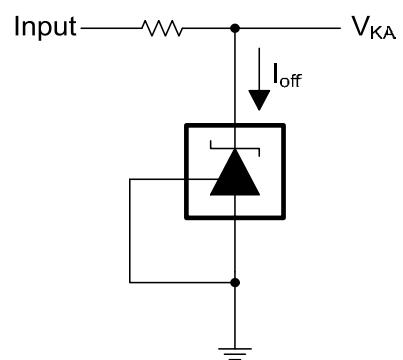
Test Circuit for $V_{KA}=V_{ref}(1+R1/R2)+R1*I_{ref}$
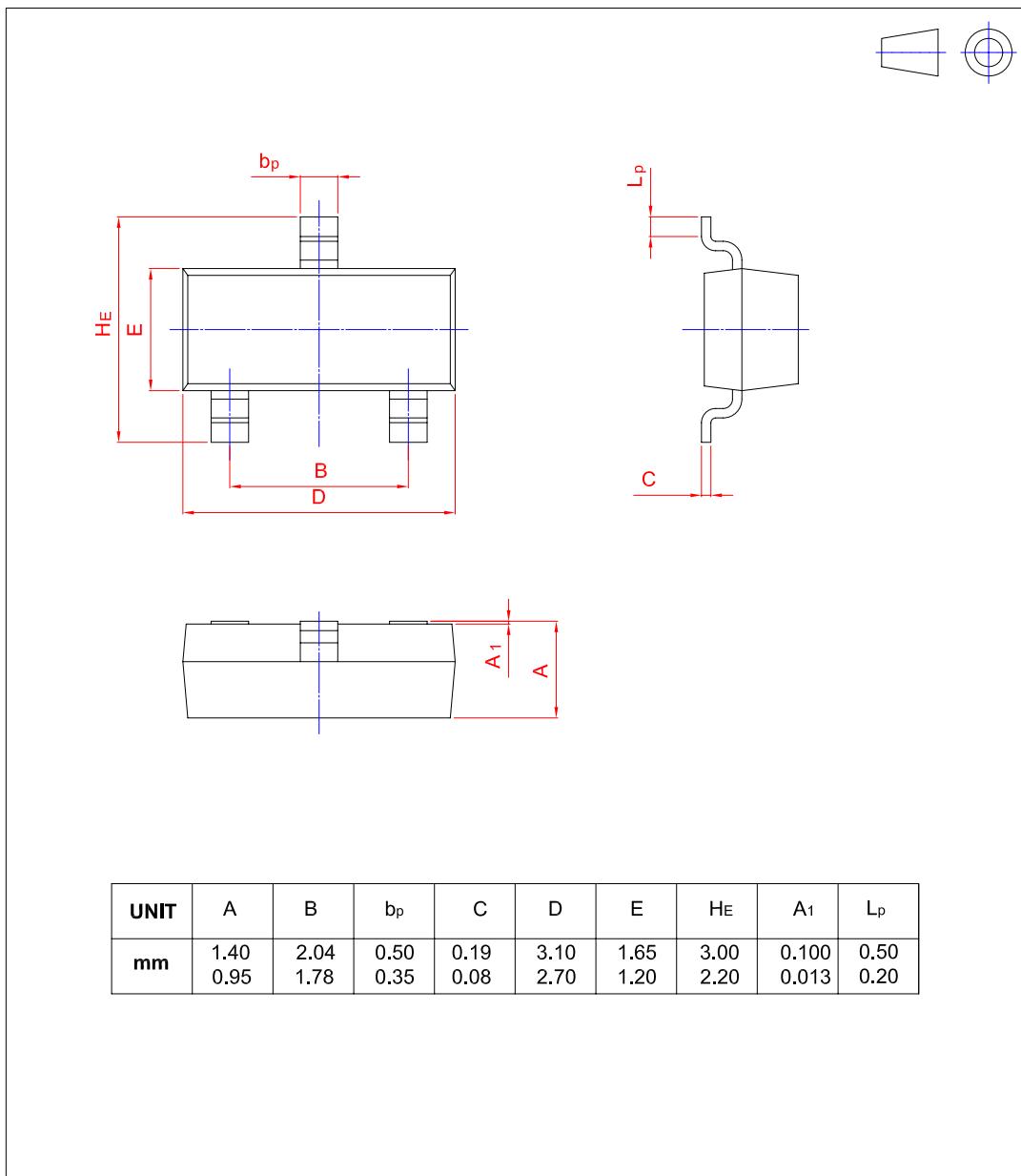
**Reference Input Current versus
Ambient Temperature**

I_K=10mA
R_1=10KΩ

I_{ref}, REFERENCE INPUT CURRENT (nA) vs T_a, AMBIENT TEMPERATURE (℃)

Test Circuit for I_{ref}

**Off-State Cathode Current
versus Ambient Temperature**

V_{KA}=15V
V_{ref}=0V

I_{off}, OFF-STATE CATHODE CURRENT (nA) vs T_a, AMBIENT TEMPERATURE (℃)

Test Circuit for I_{off}

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23

UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20

REV.07

www.shike.tw

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Voltage References *category:*

Click to view products by Shikues *manufacturer:*

Other Similar products are found below :

AS431ARTR-E1 AZ431BR-ATRE1 5962-8686103XC NCV431BVDMR2G REF01J/883 SC431ILPRAG AP432AQG-7 LM4040B25QFTA REF5020IDGKR TL431BL3T TL431ACZ KA431SLMF2TF KA431SMF2TF KA431SMFTF LM4040QCEM3-3.0/NOPB LM4041C12ILPR LM4120AIM5-2.5/NOP LM431SCCMFX ZXRE250BSA-7 ZXRE125DN8TA TS3330AQPR ZXRE250ASA-7 ZTL431ASE5TA ADR3512WCRMZ-R7 REF3012AIDBZR LM385BM-2.5/NOPB LM385D-2.5R2G LM4040AIM3-10.0 LM4040CIM3-10.0 LM4040CIM3X-2.0/NOPB LM4041QDIM3-ADJ/NO LM4051BIM3-ADJ/NOPB LM4051CIM3X-1.2/NOPB LM4128CMF-1.8/NOPB LM4132DMF-1.8/NOPB LM4132EMF-1.8/NOPB LM4132EMF-2.0/NOPB LM431CIM LM385BD-2.5R2G LM385M-2.5/NOPB LM4030AMF-4.096/NOPB LM4040D30ILPR AP432YG-13 AP431IANTR-G1 AP431AWG-7 AS431ANTR-G1 AS431AZTR-G1 AS431BZTR-E1 AN431BN-ATRG1 AN431AN-ATRG1