

### 描述 / Descriptions

SOT-23 塑封封装精密可调基准电源。

Precision adjustable shunt regulator in a SOT-23 Plastic Package.

### 特征 / Features

精确参照电压 1.240V，允许电压误差为 0.5%、1%，阴极电流能力为 100uA ~ 100mA，快速导通，可调节输出电压为  $V_O = V_{ref} \sim 20V$ ，阴极工作电流低(典型值:55μA)，动态输出阻抗低(典型值:0.05Ω)，无卤产品。

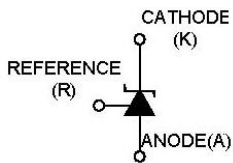
Precise reference voltage to 1.240V, guaranteed 0.5%, 1% ,reference voltage Tolerance, sink current capability, 100uA ~ 100mA, quick turn-on, adjustable output voltage,  $V_O = V_{ref} \sim 20V$ , low operational cathode current, 55μA typical, 0.05Ω typical output impedance, HF Product.

### 用途 / Applications

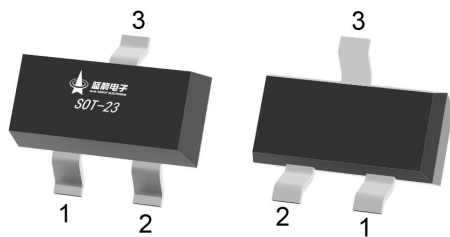
用于线性调整器，可调节电源和开关电源。

Linear regulators, adjustable power supply, switching power supply.

### 内部等效电路 / Equivalent Circuit



### 引脚排列 / Pinning



PIN 1 : R

PIN 2 : K

PIN 3 : A

### 印章代码 / Marking

Marking	H432
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**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Cathode voltage	$V_{KA}$	20	V
Continuous cathode current range	$I_K$	-100~+100	mA
Reference current range	$I_{REF}$	10	mA
Power Dissipation	$P_D$	370	mW
Ambient temperature range	$T_{amb}$	-40~125	°C
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-65~150	°C

**电性能参数 / Electrical Characteristics(Ta=25°C)**

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Reference voltage	$V_{REF}$	$V_{KA}=V_{REF}$ $I_K=10mA(A=0.5\%)$	1.234	1.240	1.246	V
		$V_{KA}=V_{REF}$ $I_K=10mA(B=1\%)$	1.228	1.240	1.252	V
Reference voltage drift over temp. range	$\Delta V_{REF}/T$	$V_{KA}=V_{REF}$ $I_K=10mA$ $T_A=-40\sim 85^\circ C$		3	10	mV
Voltage ratio (open loop gain)	$\Delta V_{REF}/\Delta V_{KA}$	$I_K=10mA$ $\Delta V_{KA}=V_{REF}$ to 16V		-0.5	-1.5	mV/V
Reference current	$I_{REF}$	$I_K=10mA$ $R_1=10K\Omega$ $R_2=open$ $T_A=-40\sim 85^\circ C$		0.1	0.4	$\mu A$
		$I_K=10mA$ $R_1=10K$ $R_2=open$		0.15	0.4	$\mu A$
Min. cathode current	$I_{K(min)}$	$V_{KA}=V_{REF}$		55	80	$\mu A$
Off-state cathode current	$I_{K(off)}$	$V_{KA}=18V$ $V_{REF}=0V$		0.04	0.1	$\mu A$
		$V_{KA}=6V$ $V_{REF}=0V$		0.01	0.05	$\mu A$
Dynamic impedance	$ Z_{KA} $	$V_{KA}=V_{REF}$ $I_K=1mA$ to 100mA, $f\leq 1.0KHz$		0.05	0.15	$\Omega$

电参数曲线图 / Electrical Characteristic Curve

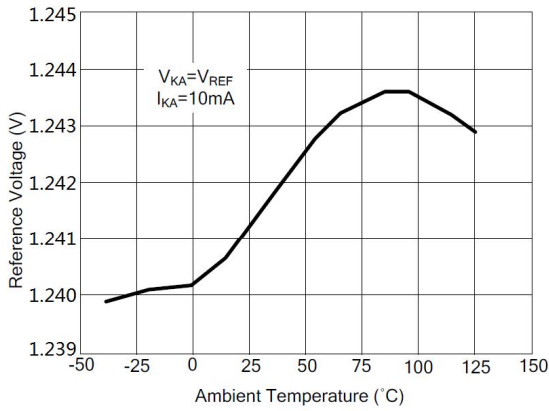


Figure 1. Reference Voltage VS. Ambient Temperature

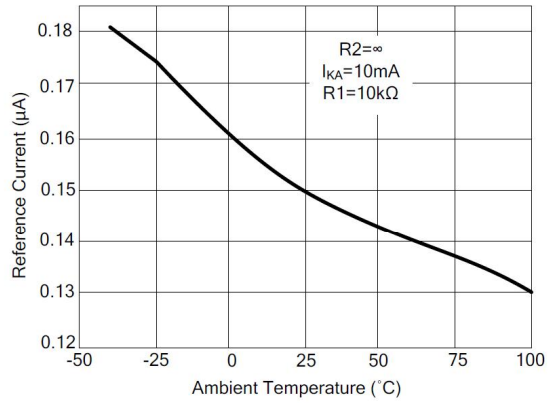


Figure 2 . Reference Current VS. Ambient Temperature

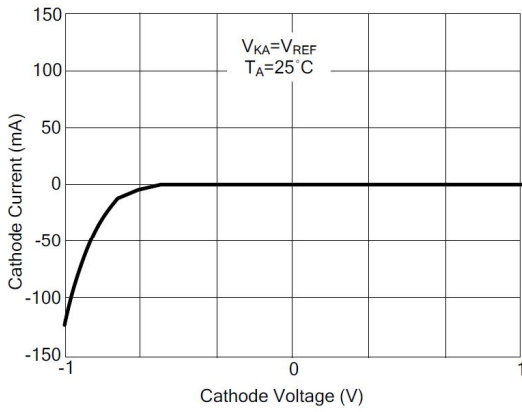


Figure 3 . Cathode Current VS. Cathode Voltage

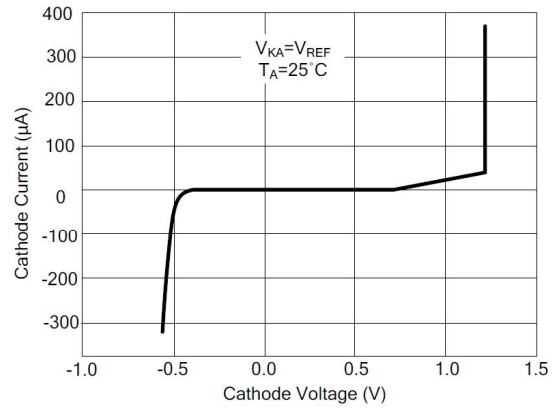
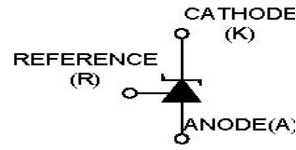
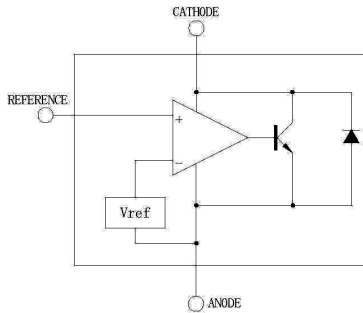


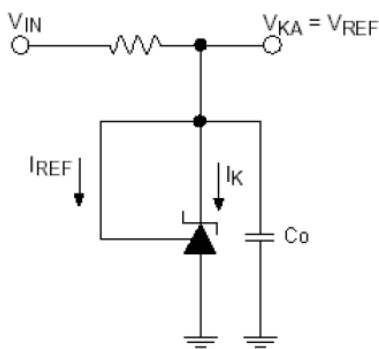
Figure 4 . Current VS. cathode Voltage

测试电路图&典型应用图 Test circuits&Typical Application

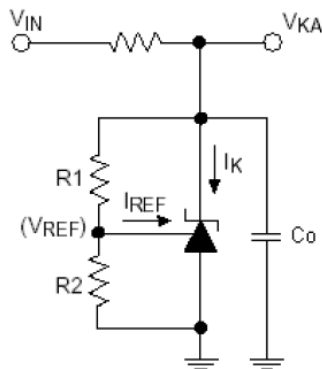
BLOCK DIAGRAM:



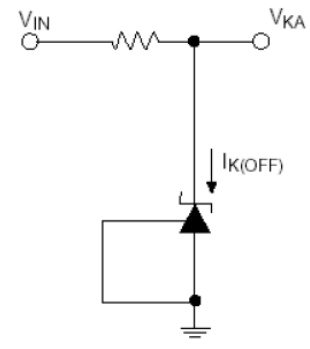
TEST CIRCUITS:



Test Circuit For  $V_{KA}=V_{REF}$ ,  
 $C_o=0.1\mu F$

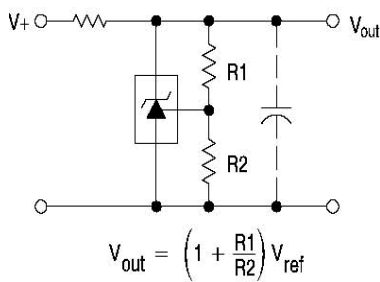


Test Circuit for  $V_{KA}\geq V_{REF}$   
 $C_o=0.1\mu F$

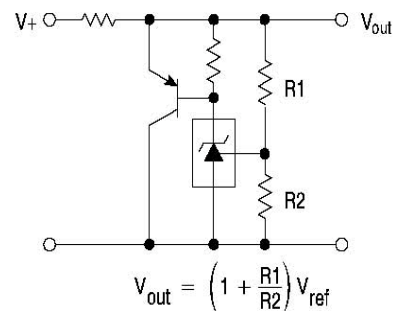


Test Circuit For  $I_{K(OFF)}$

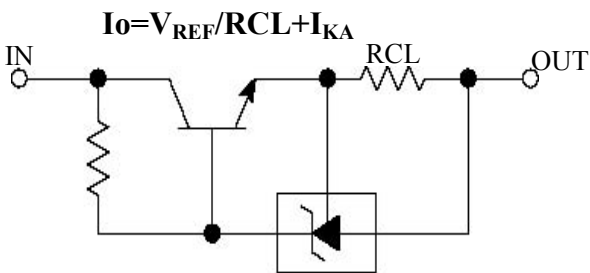
TYPICAL APPLICATIONS:



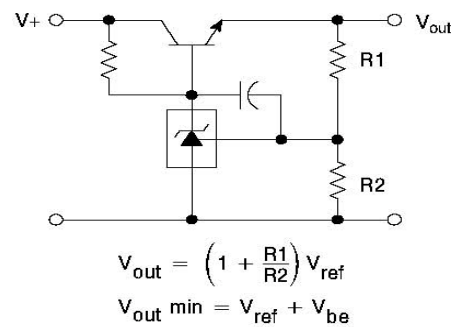
Shutdown Regulator



Higher-current Shunt



Constant Current Source

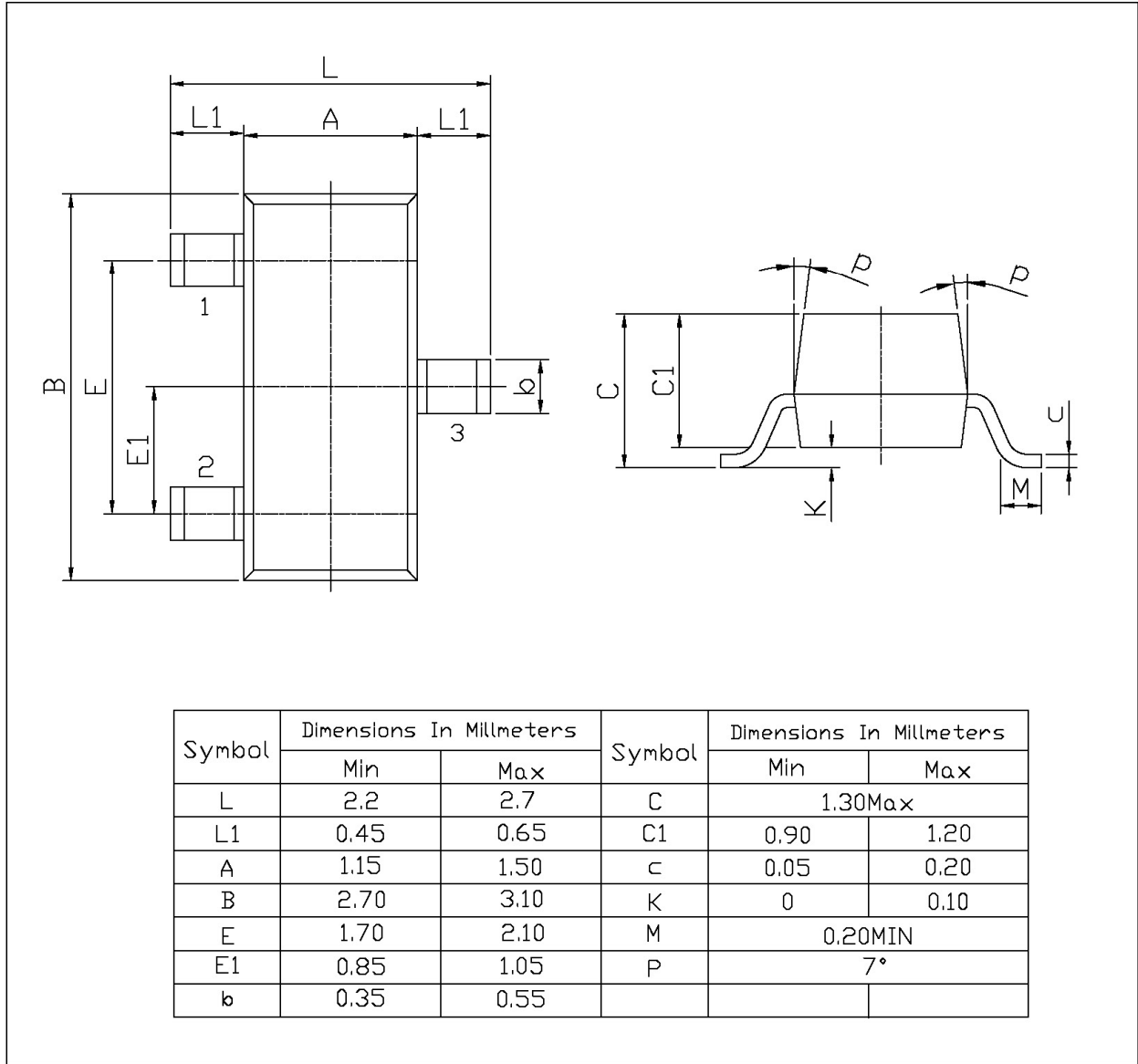


Series Pass Regulator

外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

H： 为公司代码

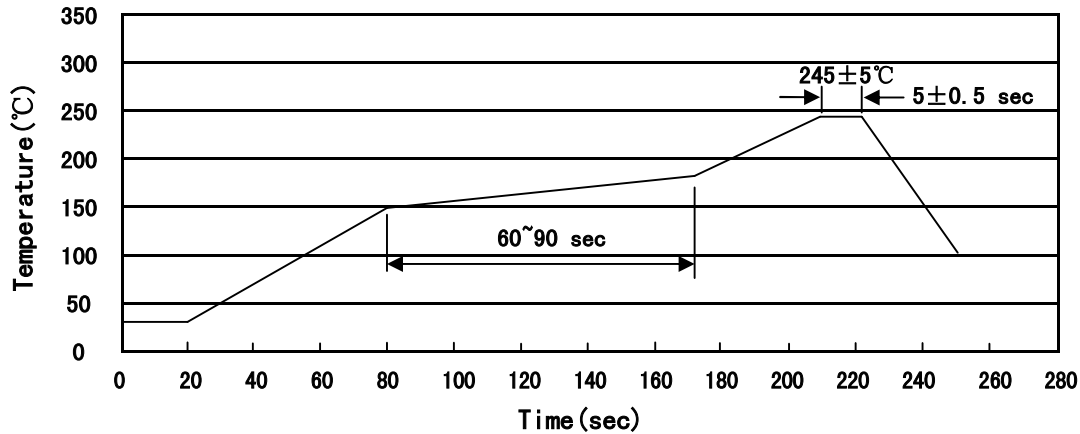
432： 为型号代码

Note:

H: Company Code

432: Product Type

**回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)**



说明：

- 1、预热温度 150 ~ 180°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:150~180°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

**耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions**

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

**包装规格 / Packaging SPEC.**

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm <sup>3</sup> )		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOT-23	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

**使用说明 / Notices**