

### 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

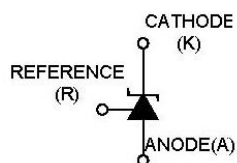
精确参照电压 1.240V，允许电压误差为 0.5%、1%，阴极电流能力为 100uA ~ 100mA，快速导通，可调节输出电压为  $V_O = V_{ref} \sim 20V$ ，阴极工作电流低(典型值:55μA)，动态输出阻抗低(典型值:0.05Ω)。  
Precise reference voltage to 1.240V, guaranteed 0.5%, 1%, reference voltage Tolerance, sink current capability, 100uA ~ 100mA, quick turn-on, adjustable output voltage,  $V_O = V_{ref} \sim 20V$ , low operational cathode current, 55μA typical, 0.05Ω typical output impedance.

### 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

### 放大及印章代码 / h<sub>FE</sub> Classifications & 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

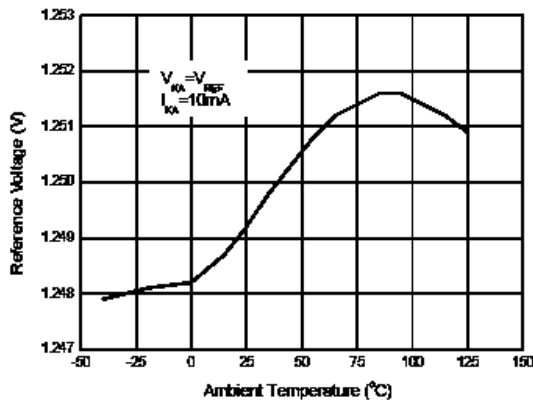


Figure 7. Reference Voltage vs. Ambient Temperature

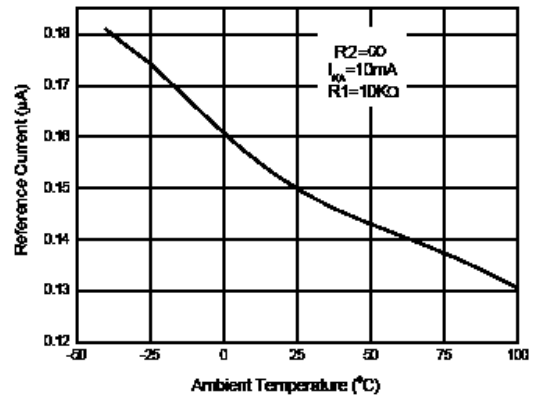


Figure 8. Reference Current vs. Ambient Temperature

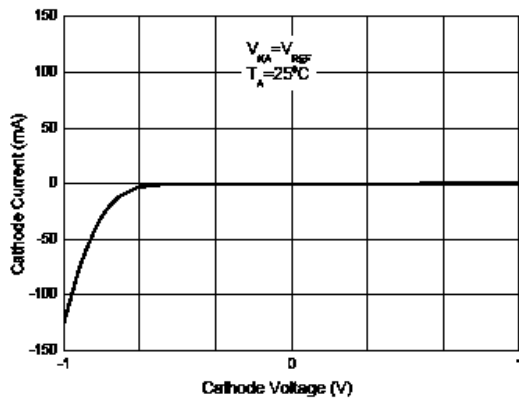


Figure 9. Cathode Current vs. Cathode Voltage

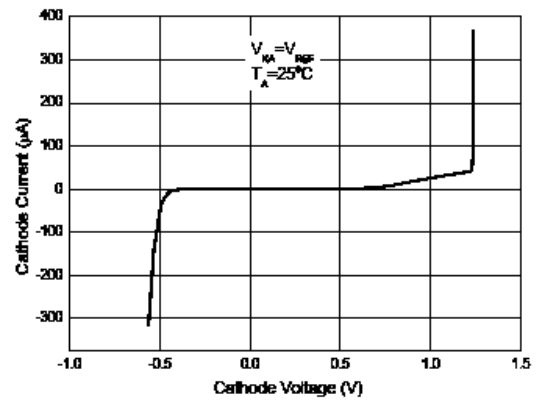
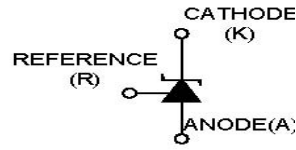
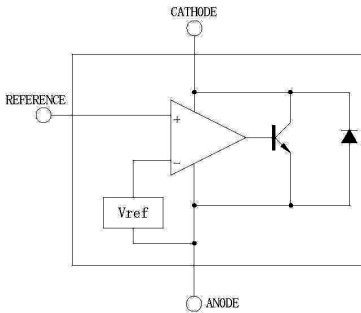


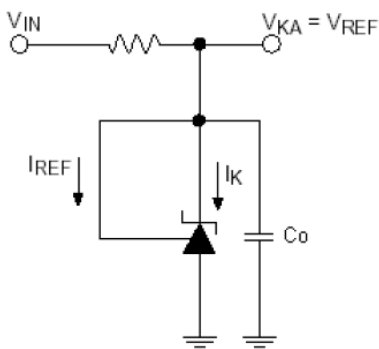
Figure 10. Current vs. cathode Voltage

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

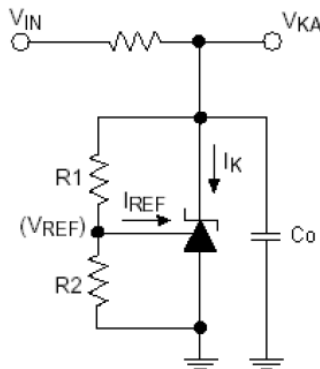
BLOCK DIAGRAM:



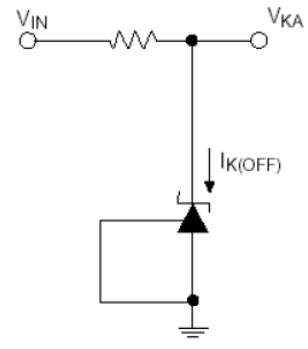
TEST CIRCUITS:



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

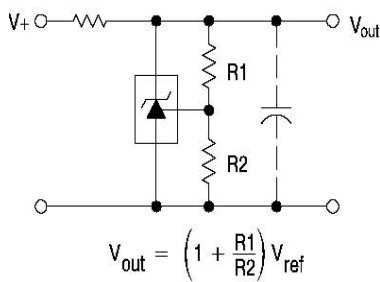


Test Circuit for  $V_{KA}\geq V_{REF}$   
 $C_o=0.1\mu F$

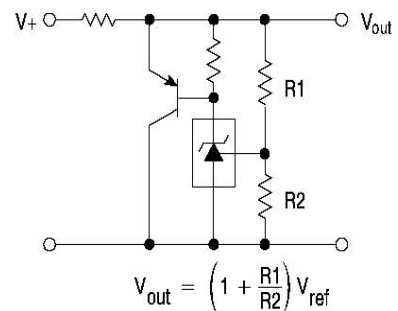


Test Circuit For  $I_{K(OFF)}$

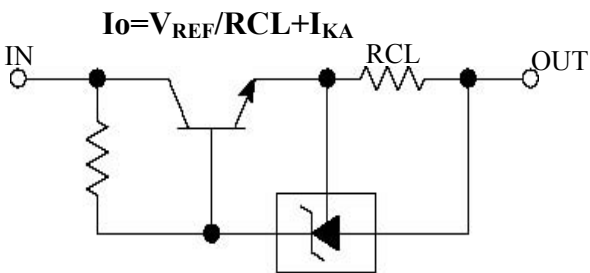
TYPICAL APPLICATIONS:



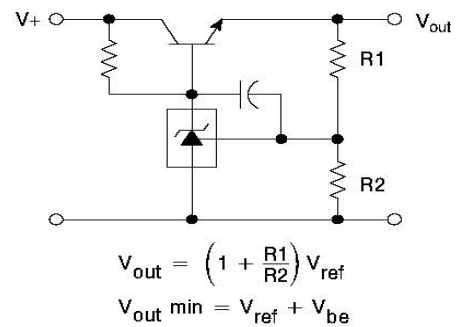
Shutdown Regulator



Higher-current Shunt



Constant Current Source

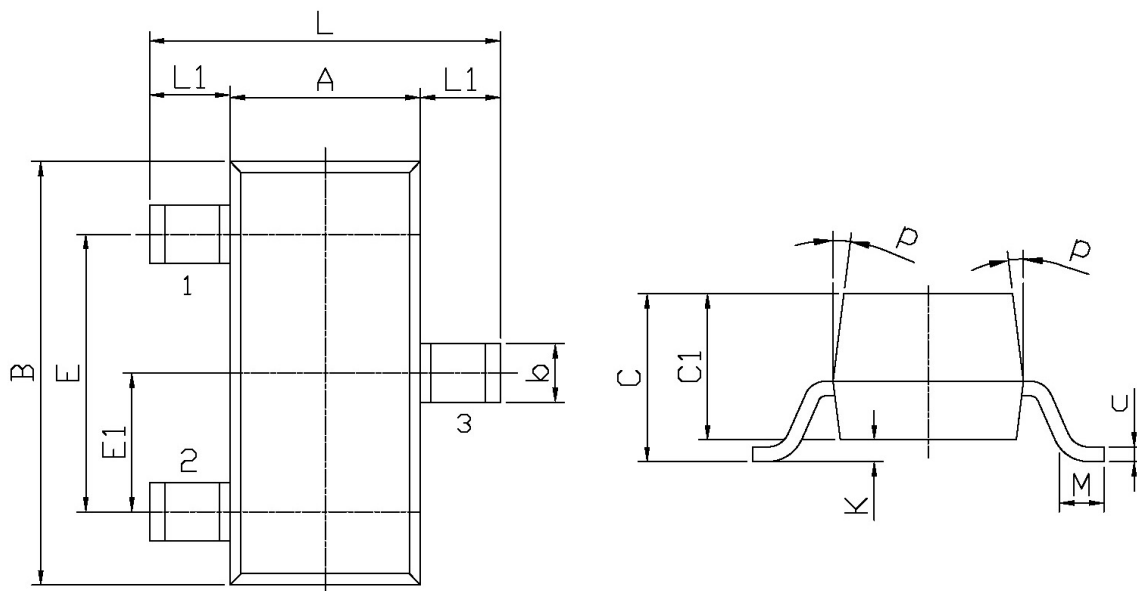


Series Pass Regulator

外形尺寸图 / Package Dimensions

SOT-23

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	c	0.05	0.20
B	2.70	3.10	K	0	0.10
E	1.70	2.10	M	0.20MIN	
E1	0.85	1.05	P	7°	
b	0.35	0.55			

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 25 ~ 150°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:25~150°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**