Descriptions

The TL432M is Precision adjustable shunt regulator， SOT-23 Plastic Package.

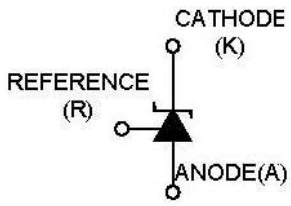
Features

- Precise reference voltage to 1.240V
- Guaranteed 0.5%,1%
- Reference voltage tolerance,Sink current capability,100uA～100mA
- Quick turn-on,Adjustable output voltage,VO=Vref～20V
- Low operational cathode current,55 μA typical
- 0.05Ω typical output impedance

Applications

- Linear regulators
- Adjustable power supply
- Switching power supply

Equivalent Circuit



Pinning

PIN1：R PIN 2：K PIN 3：A

Marking

Marking	H432

Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	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	℃
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-65～150	℃

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	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	$\triangle V_{REF}/T$	$V_{KA}=V_{REF}$ I_K=10mA T_A=-40～85℃		3	10	mV
Voltage ratio (open loop gain)	$\triangle V_{REF}/\triangle V_{KA}$	I_K=10mA $\triangle V_{KA}=V_{REF}$ to 16V		-0.5	-1.5	mV/V
Reference current	I_{REF}	I_K=10mA R_1=10KΩ R_2=open T_A=-40～85℃		0.1	0.4	μA
		I_K=10mA R_1=10K R_2=open		0.15	0.4	μA
Min. cathode current	$I_{K(min)}$	$V_{KA}=V_{REF}$		55	80	uA
Off-state cathode current	$I_{K(off)}$	V_{KA}=18V V_{REF}=0V		0.04	0.1	μA
		V_{KA}=6V V_{REF}=0V		0.01	0.05	μA
Dynamic impedance	$\|Z_{KA}\|$	$V_{KA}=V_{REF}$ I_K=1mA to 100mA, f≤1.0KHz		0.05	0.15	Ω

Electrical Characteristic Curve

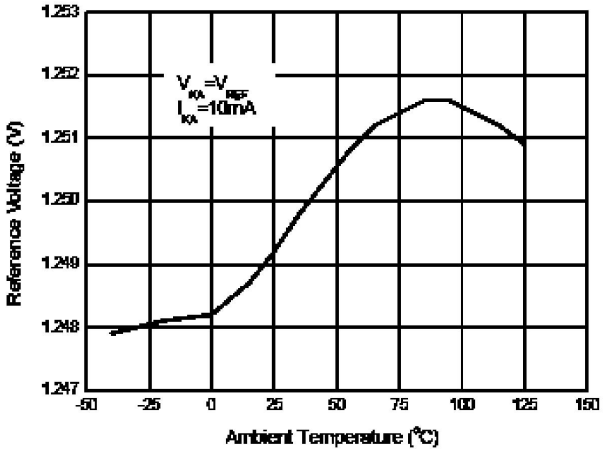


Figure 7. Reference Voltage vs. Ambient Temperature

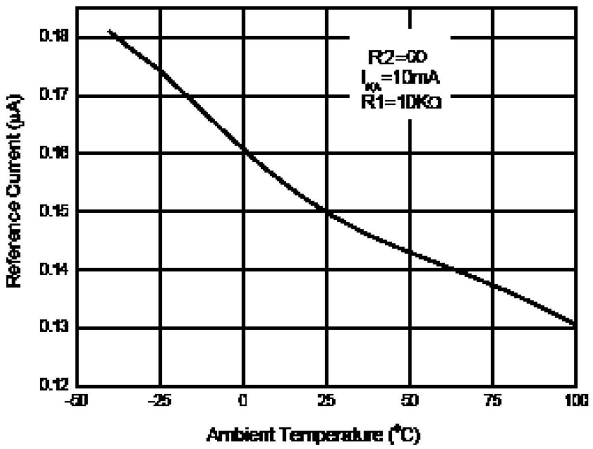


Figure 8. Reference Current vs. Ambient Temperatur

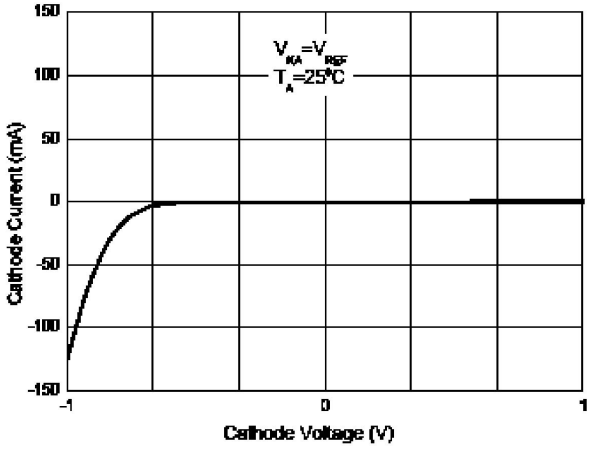


Figure 9. Cathode Current vs. Cathode Voltage

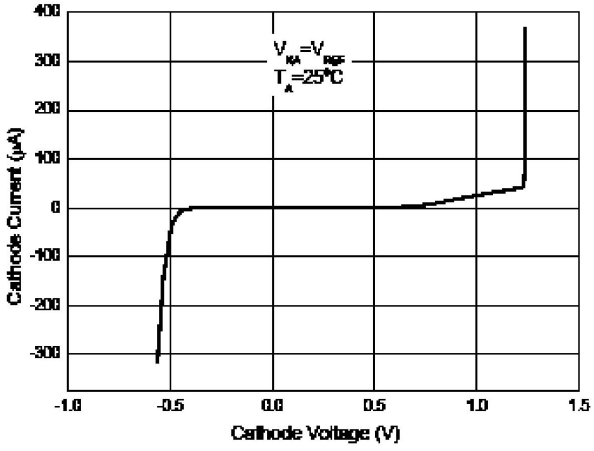
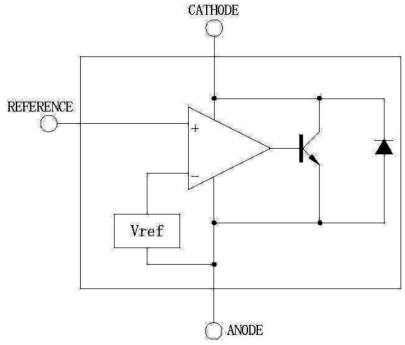
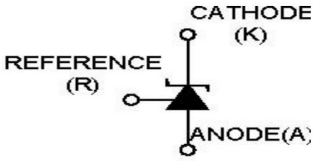


Figure 10. Current vs. cathode Voltage

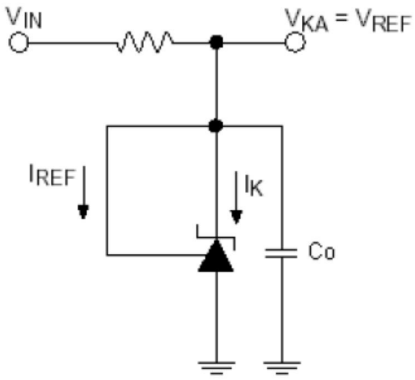
Typical Application Circuit

BLOCK DIAGRAM:

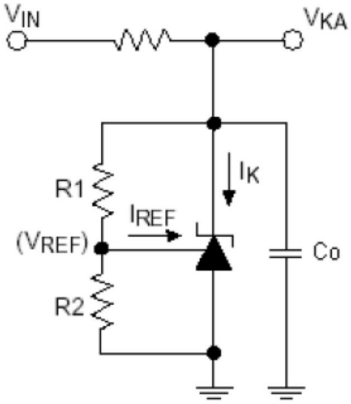




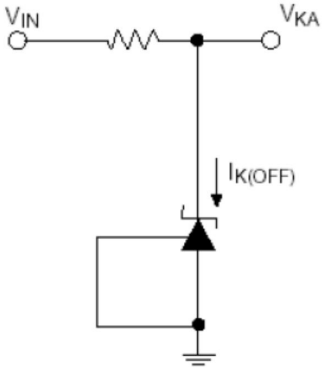
TEST CIRCUITS:



Test Circuit For VKA=VREF，
Co=0.1μF

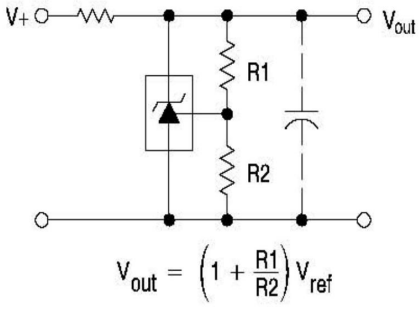


Test Circuit for VKA≥VREF
Co=0.1μF

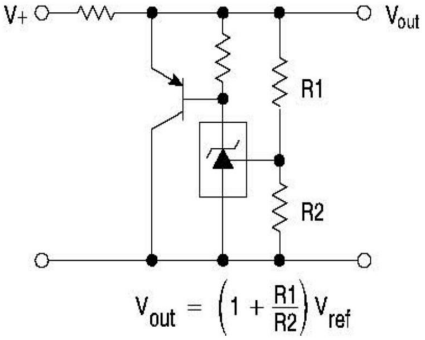


Test Circuit For $I_{KA(OFF)}$

TYPICAL APPLICATIONS:

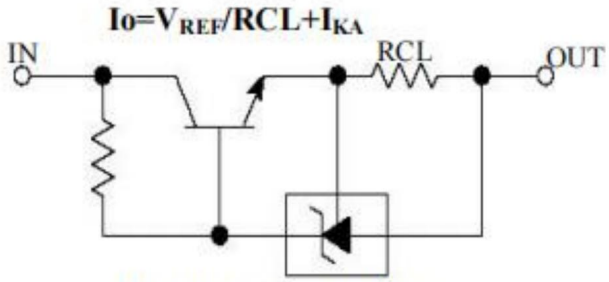


Shutdown Regulator

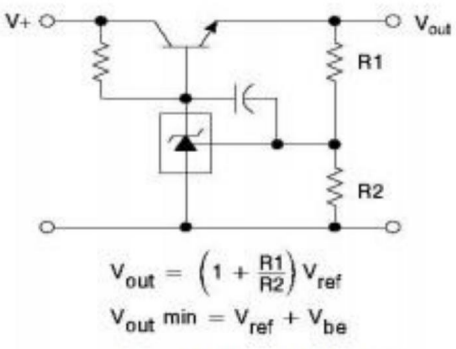


Higher-current Shunt

Typical Application Circuit

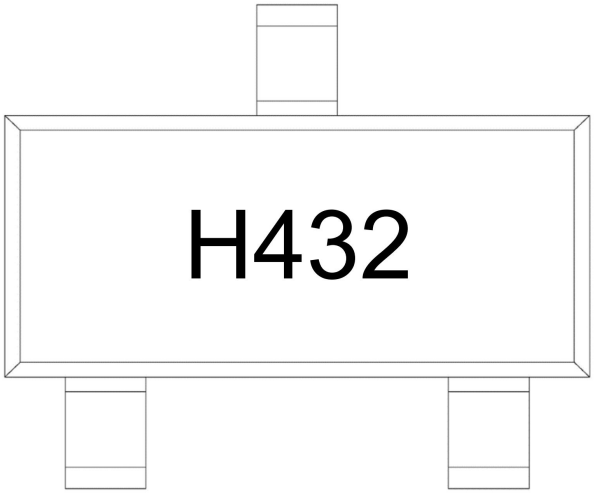


Constant Current Source



Series Pass Regulator

Marking Instructions



Note:

H: Company Code.

432: Product Type.

Packaging SPEC.

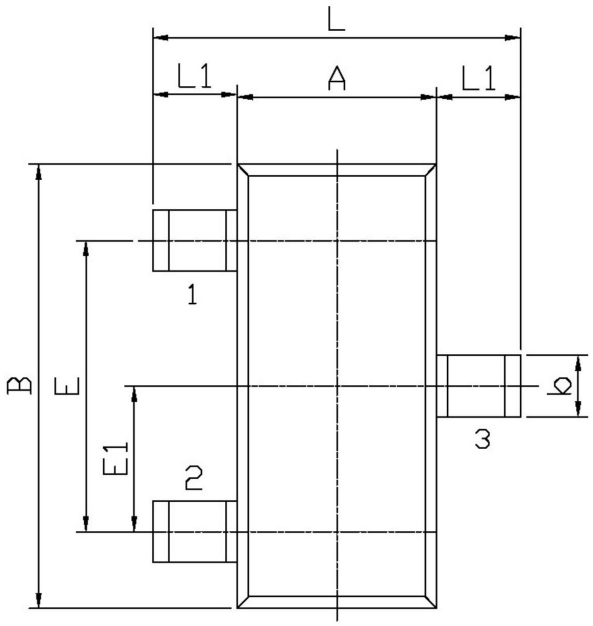
REEL

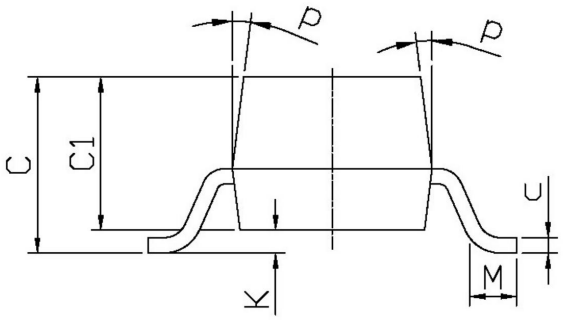
Package Type	Units					Dimension (unit：mm³)		
	Units/Reel HHGGHJ	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT-23	3,000	10	30,000	6	180,000	7″ ×8	180×120×180	390×385×205

Package Outline Dimensions

SOT-23

单位：mm





Symbol	Dimensions In Millmeters		Symbol	Dimensions In Millmeters	
	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			