SOT-23

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

2.495V; 0.5%,1% 2%; 1.0mA 100mA; ;
$V_O=V_{ref}$ 36V; (:50μA); (:0.15Ω)

Precise reference voltage to 2.495V;guaranteed 0.5%,1% or 2% reference voltage Tolerance; sink current capability,1.0mA 100mA;quick turn-on; adjustable Output voltage, $V_O=V_{ref}$ 36V;low operational cathode current,50μA typical; 0.15Ω typical output impedance.

Linear regulators, adjustable power supply, switching power supply.

PIN1 R PIN 2 K PIN 3 A

Marking	H431

Parameter	Symbol	Rating	Unit
Cathode to Anode Voltage	V_{KA}	37	V
Cathode Current Range, Continuous	I_K	-100 +100	mA
Reference Input Current Range, Continuous	I_{REF}	0.05 +10	mA
Power Dissipation	P_D	370	mW
Operating Ambient Temperature	T_{amb}	-40 125	
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-65 150	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reference Input Voltage	V_{REF}	$V_{KA}=V_{REF}$ I_K=10mA(A=0.5%)	2.483	2.495	2.507	V
		$V_{KA}=V_{REF}$ I_K=10mA(B=1%)	2.470	2.495	2.520	V
		$V_{KA}=V_{REF}$ I_K=10mA(2%)	2.445	2.495	2.545	V
Deviation of Reference Input Voltage Over-Temperature	V_{REF} / T	$V_{KA}=V_{REF}$ I_K=10mA T_A=-40 125		4.5	25	mV
Ratio of Change in Reference Input Voltage to the Change in Cathode Voltage	V_{REF} / V_{KA}	I_K=10mA, V_{KA} =10V to V_{REF}		-1	-2.7	mV/V
		I_K=10mA, V_{KA} =36V to 10V		-0.5	-2.0	mV/V
Reference Input Current	I_{REF}	I_K=10mA R_1=10KΩ R_2=open		0.8	1.0	μA
Deviation of Reference Input Current Over Full Temperature Range	I_{REF}/ T	I_K=10mA R_1=10KΩ R_2=open T_A=-40 125		0.4	1.2	μA
Minimum Cathode Current for Regulation	$I_{K(min)}$	$V_{KA}=V_{REF}$		0.05	0.08	mA
Off-state cathode current	$I_{K(off)}$	V_{KA}=36V V_{REF}=0V		0.05	1.0	μA
Dynamic Impedance	$\|Z_{KA}\|$	$V_{KA}=V_{REF}$ f≤1.0KHz I_K=1mA to 100mA		0.15	0.5	Ω

Fig 1 Cathode Current
Vs Cathode Voltage

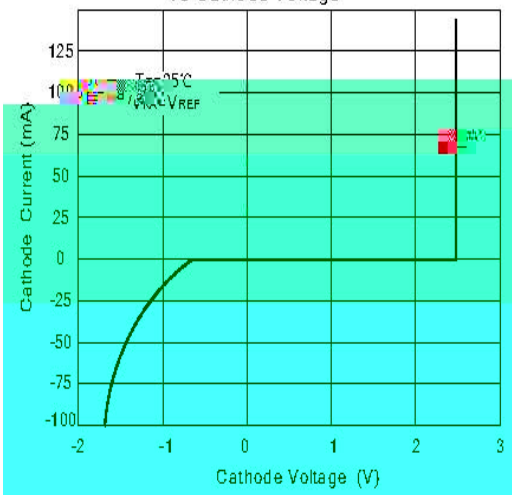


Fig 2 Cathode Current
Vs Cahode Voltage

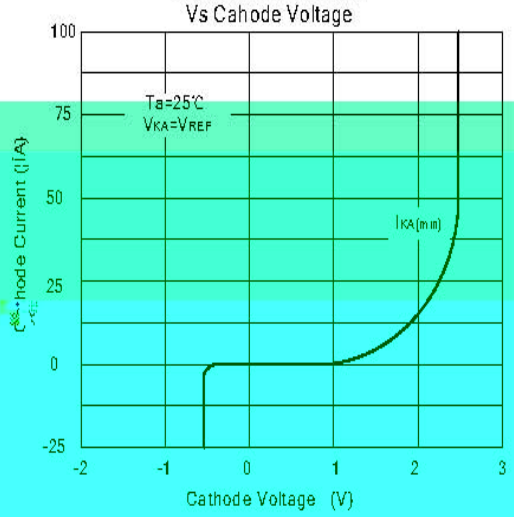


Fig 3 Change in Reference Input Voltage
Vs Cathode voltage

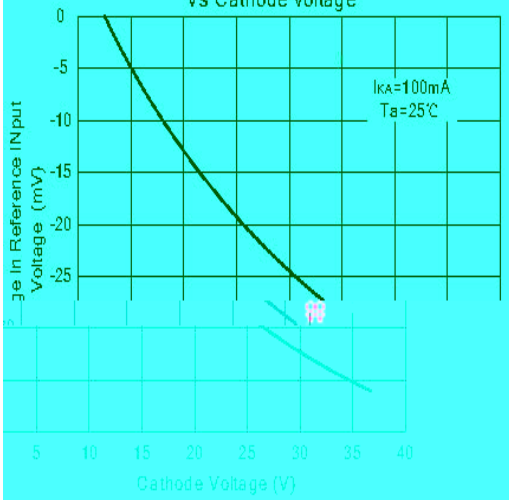


Fig 4 Pulse Response

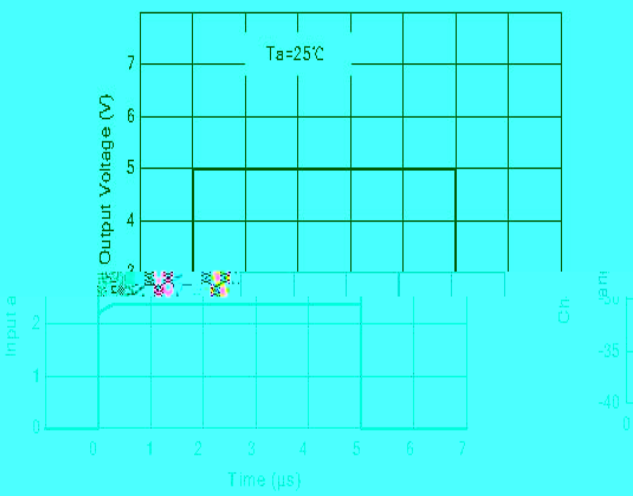


Fig 5 Dynamic Impedance
Vs Frequency

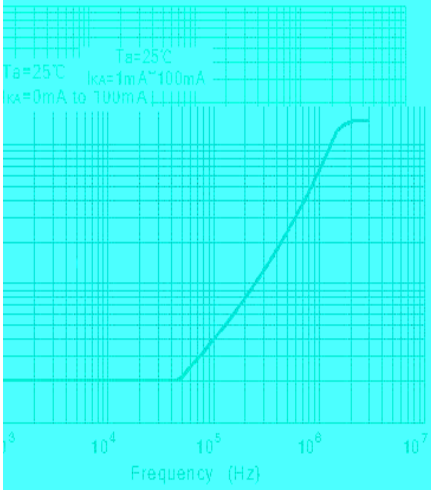
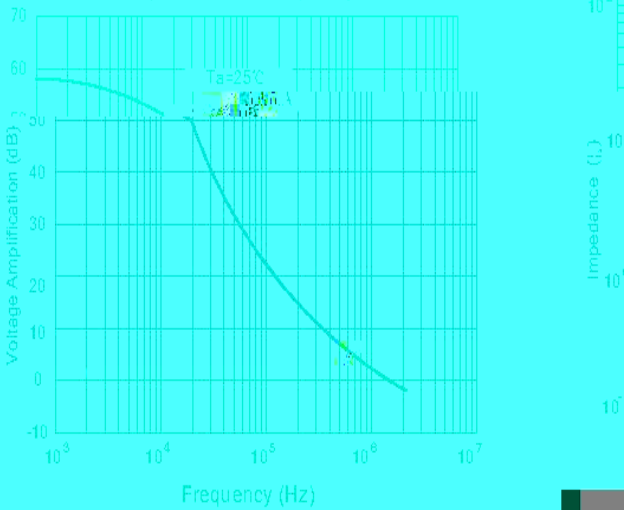
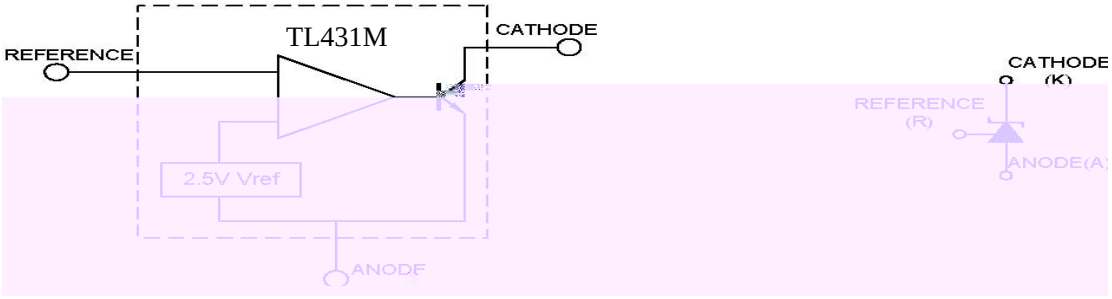


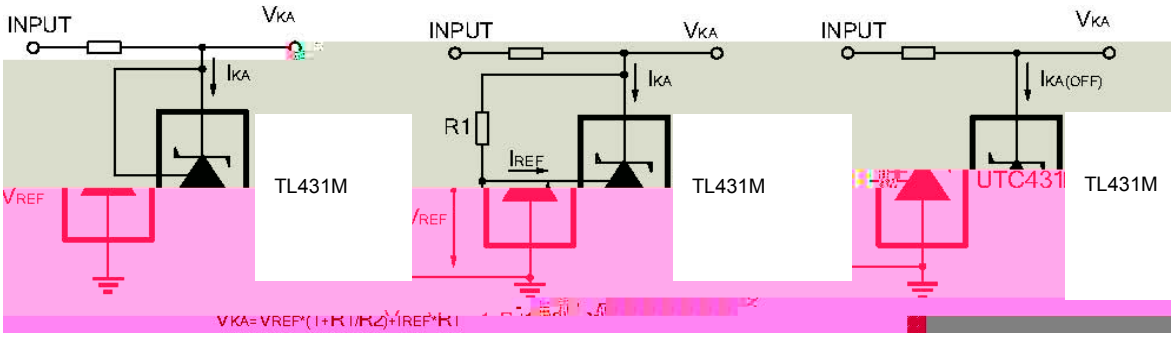
Fig 6 Small Signal Voltage
Amplification Vs Frequency



BLOCK DIAGRAM:

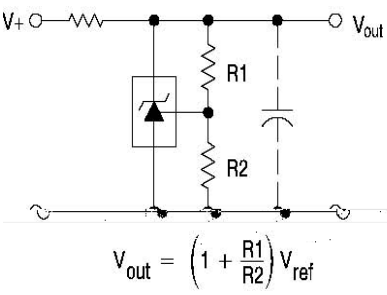


TEST CIRCUITS:

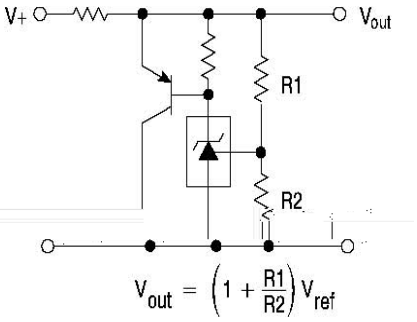


Test Circuit For VKA=VREF Test Circuit for VKA≥VREF Test Circuit For IKA(OFF)

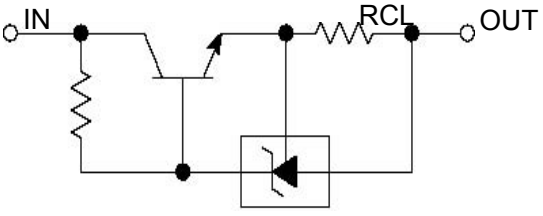
TYPICAL APPLICATION:



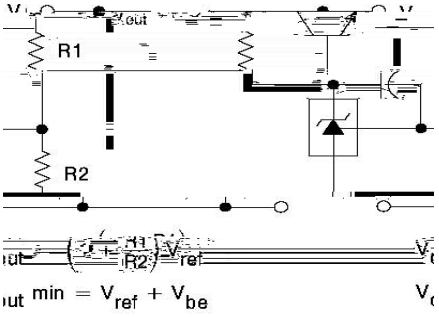
Shutdown Regulator



Higher-current Shunt



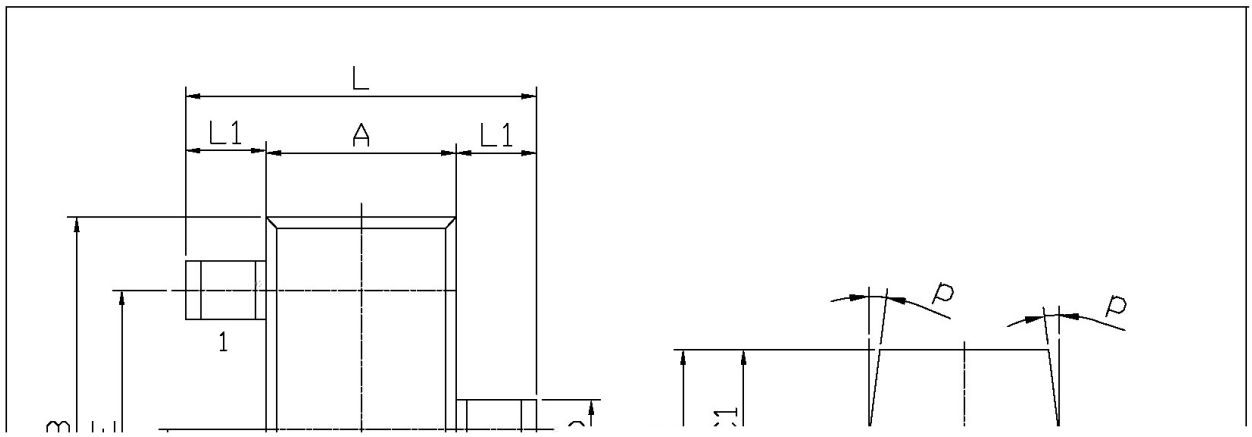
Constant Current Source TL431M



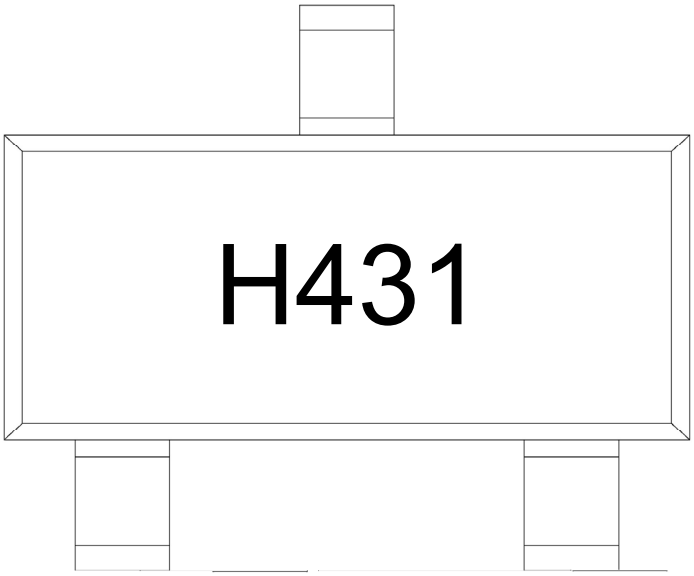
Series Pass Regulator

SOT-23

单位：mm



	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			



H

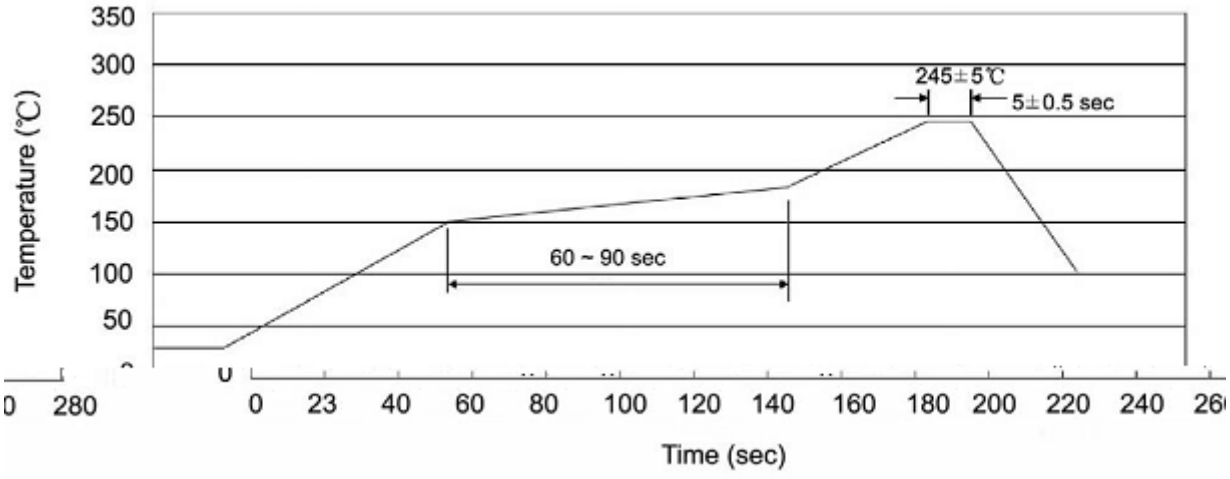
431

Note:

H: Company Code.

431: Product Type.

Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

1 25 150 60 90sec;

1.Preheating:25~150 , Time:60~90sec.

2 245±5 5±0.5sec;

2.Peak Temp.:245±5 , Duration:5±0.5sec.

3 2 10 /sec.

3. Cooling Speed: 2~10 /sec.

260±5 10±1 sec.

Temp.:260±5 Time:10±1 sec

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)		
	只卷盘	卷盘盒	只盒	盒箱	只箱		盒	箱