

/ Descriptions

SOT-23

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

/ Features

2.500V; 0.4%,0.8%; 1.0mA 100mA; ;
 $V_O = V_{ref} \sim 37V$; (:400 μA); (:0.15 Ω)
 Precise reference voltage to 2.500V;guaranteed 0.4%,0.8% reference voltage Tolerance; sink current capability,1.0mA $\sim$ 100mA;quick turn-on; adjustable Output voltage, $V_O = V_{ref} \sim 37V$;low operational cathode current,400 μA typical; 0.15 Ω typical output impedance.

/ Applications

Linear regulators, adjustable power supply, switching power supply.

/ Equivalent Circuit



/ Pinning



PIN1 R PIN 2 K PIN 3 A

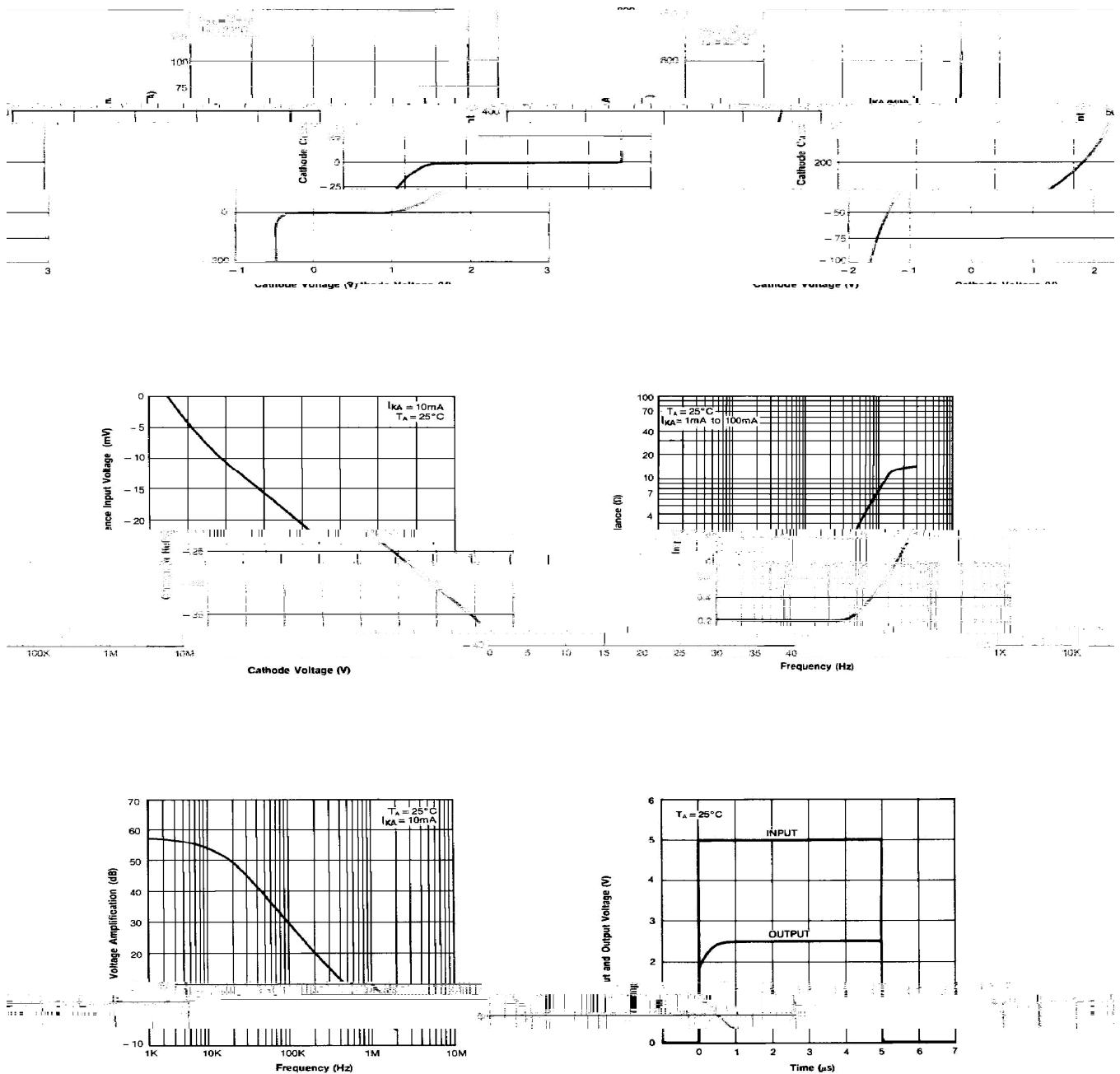
/ h_{FE} Classifications & Marking

Marking	BR431
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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	°C
Junction Temperature	T_j	160	°C
Storage Temperature Range	T_{stg}	-65~150	°C

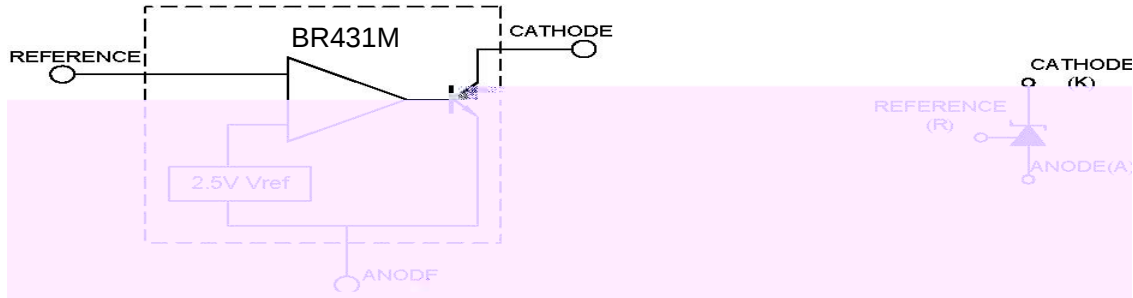
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reference Input voltage	V_{REF}	$V_{KA}=V_{REF}$ $I_K=10mA(A=0.4\%)$	2.490	2.500	2.510	V
		$V_{KA}=V_{REF}$ $I_K=10mA(B=0.8\%)$	2.480	2.500	2.520	V
Deviation of Reference Input Voltage Over-Temperature	$\Delta V_{REF}/T$	$V_{KA}=V_{REF}$ $I_K=10mA$ $T_A=-25\sim 85^{\circ}C$		4.5	17	mV
Ratio of Change in Reference Input Voltage to the Change in Cathode Voltage	$\Delta V_{REF}/\Delta V_{KA}$	$I_K=10mA$ $\Delta V_{KA}=10V$ to V_{REF}		-1	-2.7	mV/V
		$I_K=10mA$ $\Delta V_{KA}=36V$ to $10V$		-0.45	-2.0	mV/V
Reference Input current	I_{REF}	$I_K=10mA$ $R_1=10\Omega$ $R_2=open$		1.0	4.0	μA
Deviation of Reference Input Current Over Full Temperature Range	$\Delta I_{REF}/T$	$I_K=10mA$ $R_1=10K\Omega$, $R_2=open$ $T_A=-40\sim 125^{\circ}C$		0.4	1.2	μA
Minimum Cathode Current for Regulation	$I_{K(min)}$	$V_{KA}=V_{REF}=V$				

/ Electrical Characteristic Curve

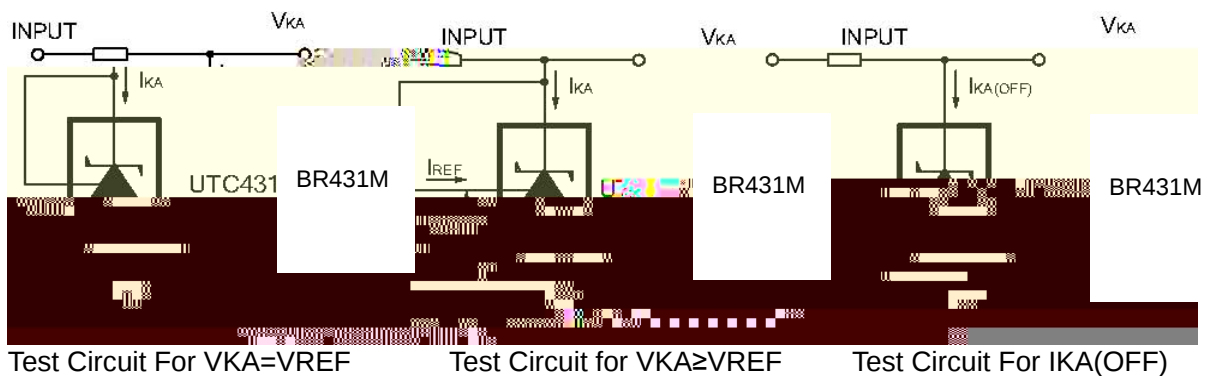


& Test circuits&Typical Application

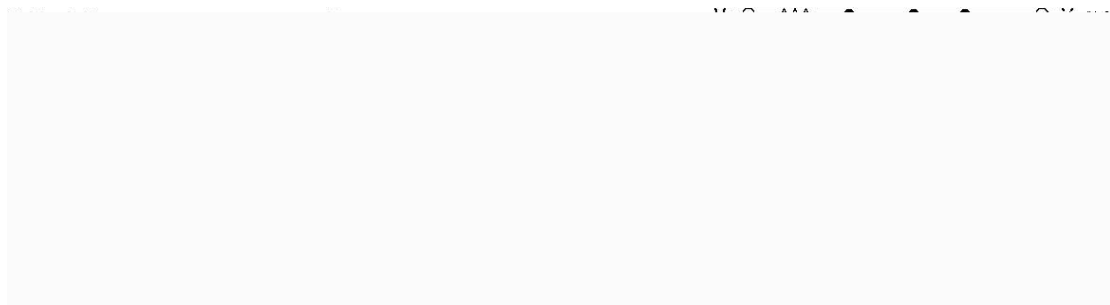
BLOCK DIAGRAM:



TEST CIRCUITS:

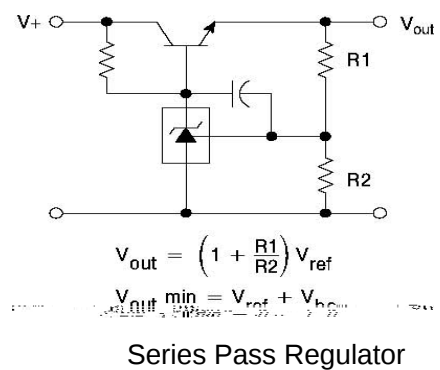
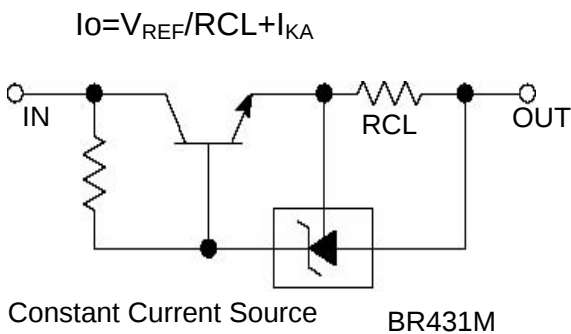


TYPICAL APPLICATION:



Shutdown Regulator

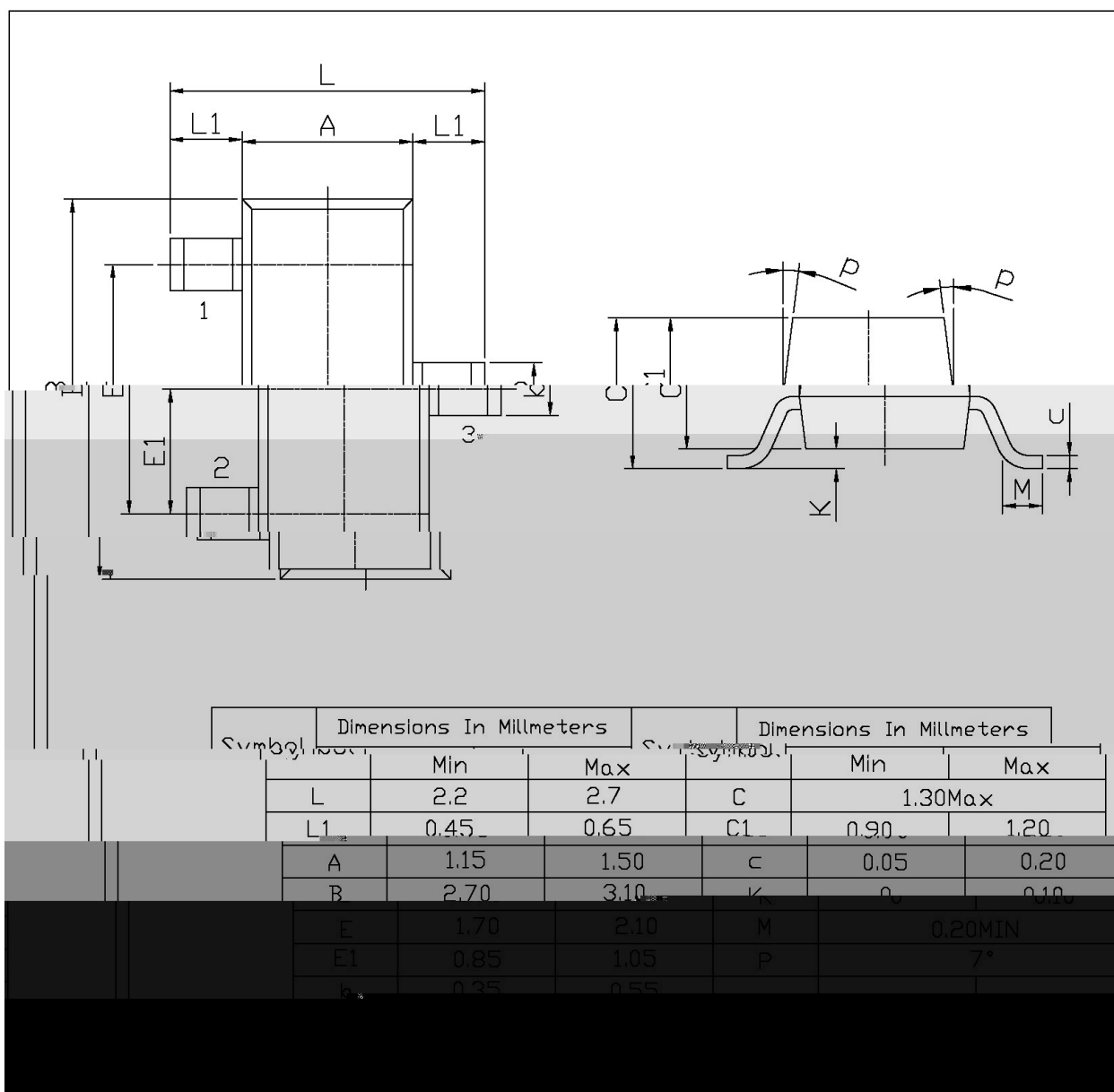
Higher-current Shunt



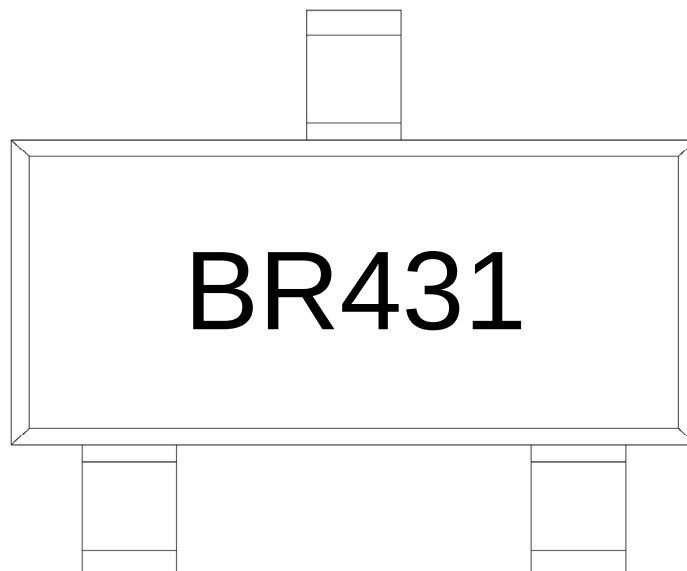
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



BR

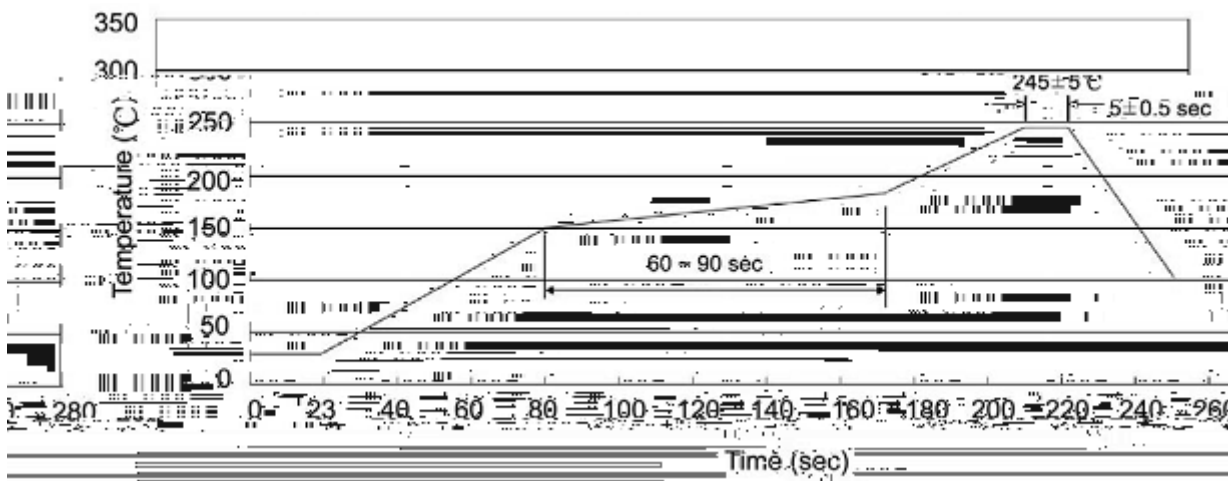
431

Note:

BR: 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. |

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5℃ Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	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

/ Notices