

**/ Descriptions**

SOT-23

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

**/ Features**

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

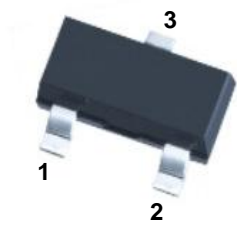
**/ Applications**

Linear regulators, adjustable power supply, switching power supply.

**/ Equivalent Circuit**



**/ Pinning**



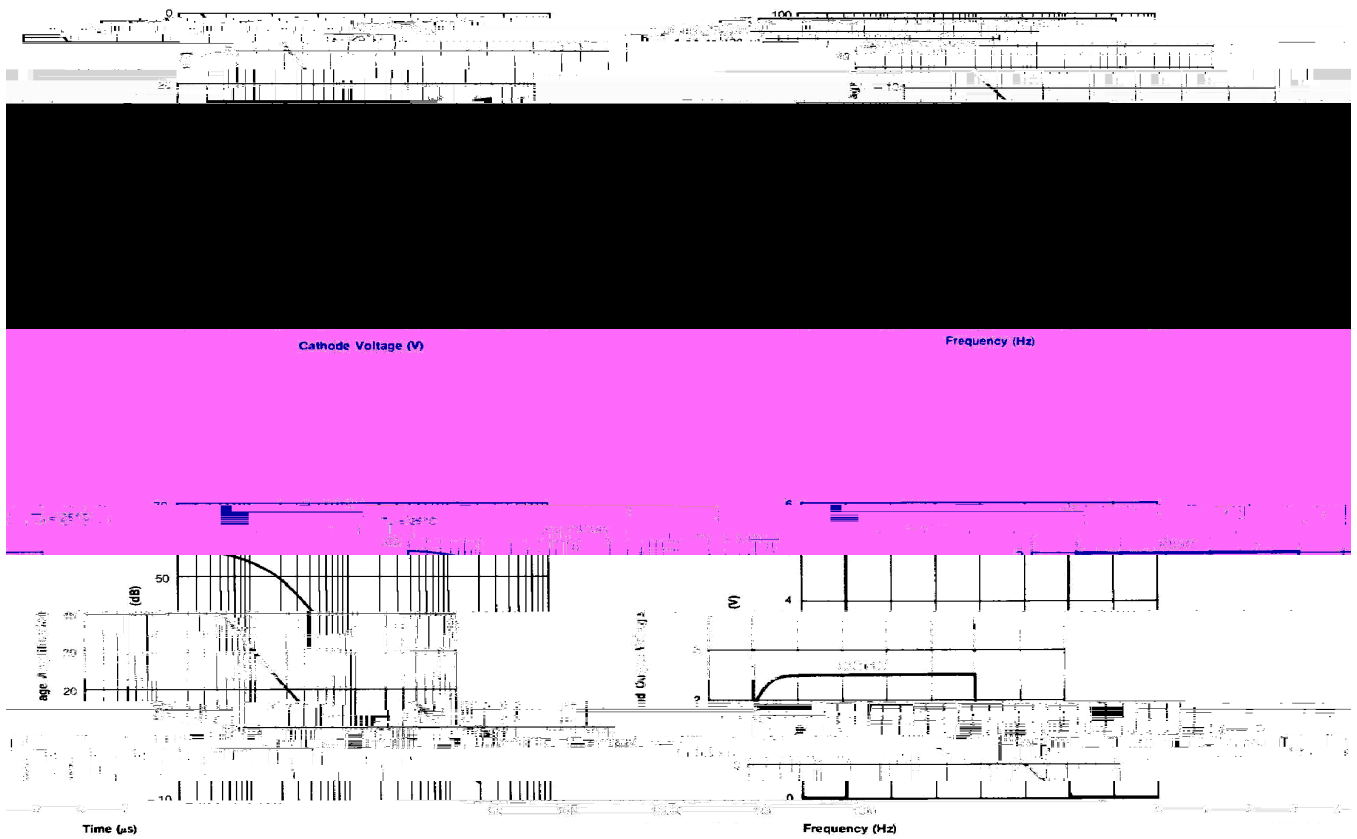
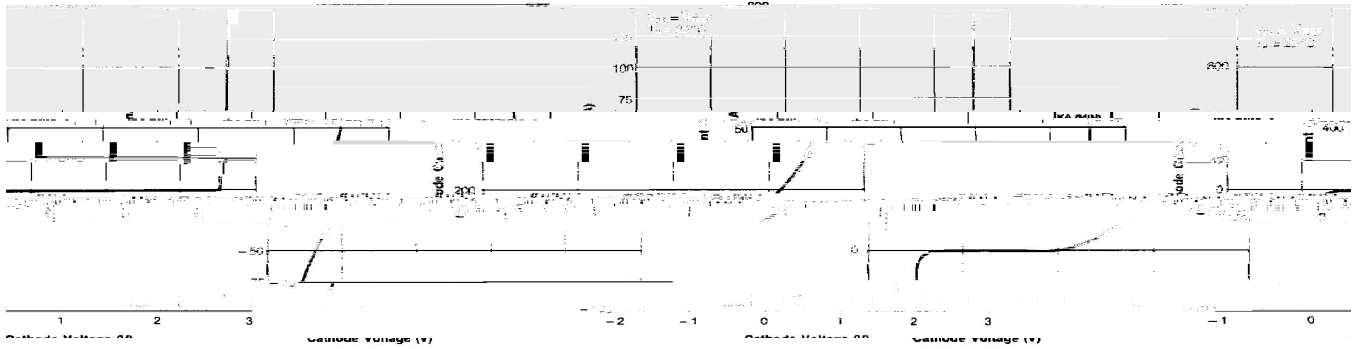
PIN1 R      PIN 2 K      PIN 3 A

**/ h<sub>FE</sub> Classifications & Marking**

Marking	BR431
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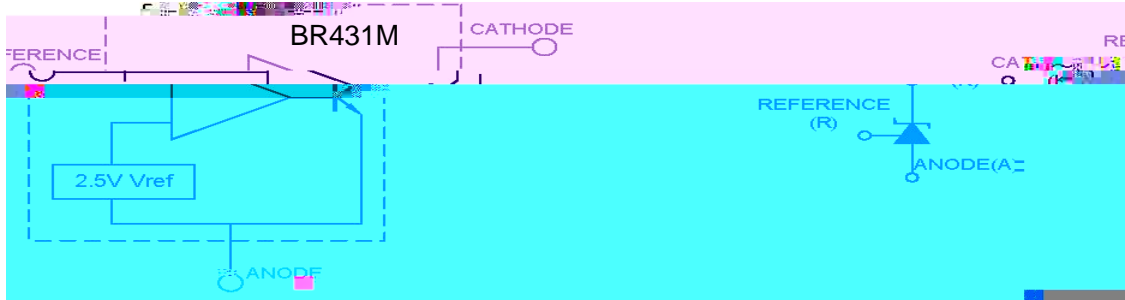
Parameter	Symbol	Rating	Unit
Cathode to Anode Voltage	$V_{KA}$	37	V
Cathode Current Range, Continuous	$I_K$	-100 +100	mA
Reference Input Current Range, Continuous	$I_{REF}$	0.05 +10	mA
Power Dissipation	$P_D$		

/ Electrical Characteristic Curve

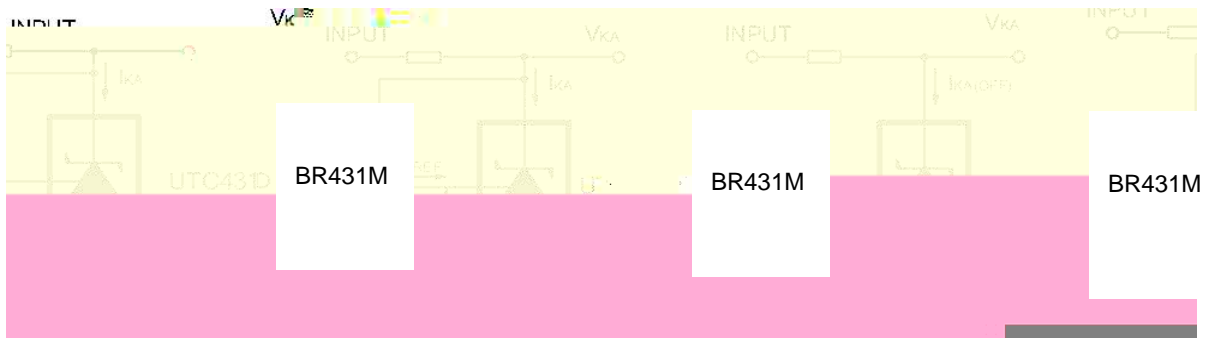


**& Test circuits&Typical Application**

BLOCK DIAGRAM:



TEST CIRCUITS:

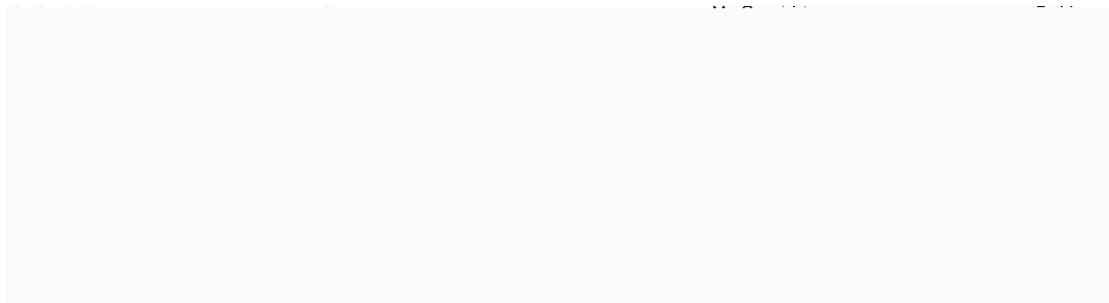


Test Circuit For  $V_{KA}=V_{REF}$

Test Circuit for  $V_{KA} = V_{REF}$

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

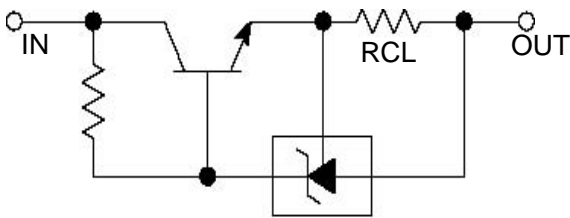
TYPICAL APPLICATION:



Shutdown Regulator

Higher-current Shunt

$$I_O = V_{REF}/R_{CL} + I_{KA}$$



Constant Current Source

BR431M

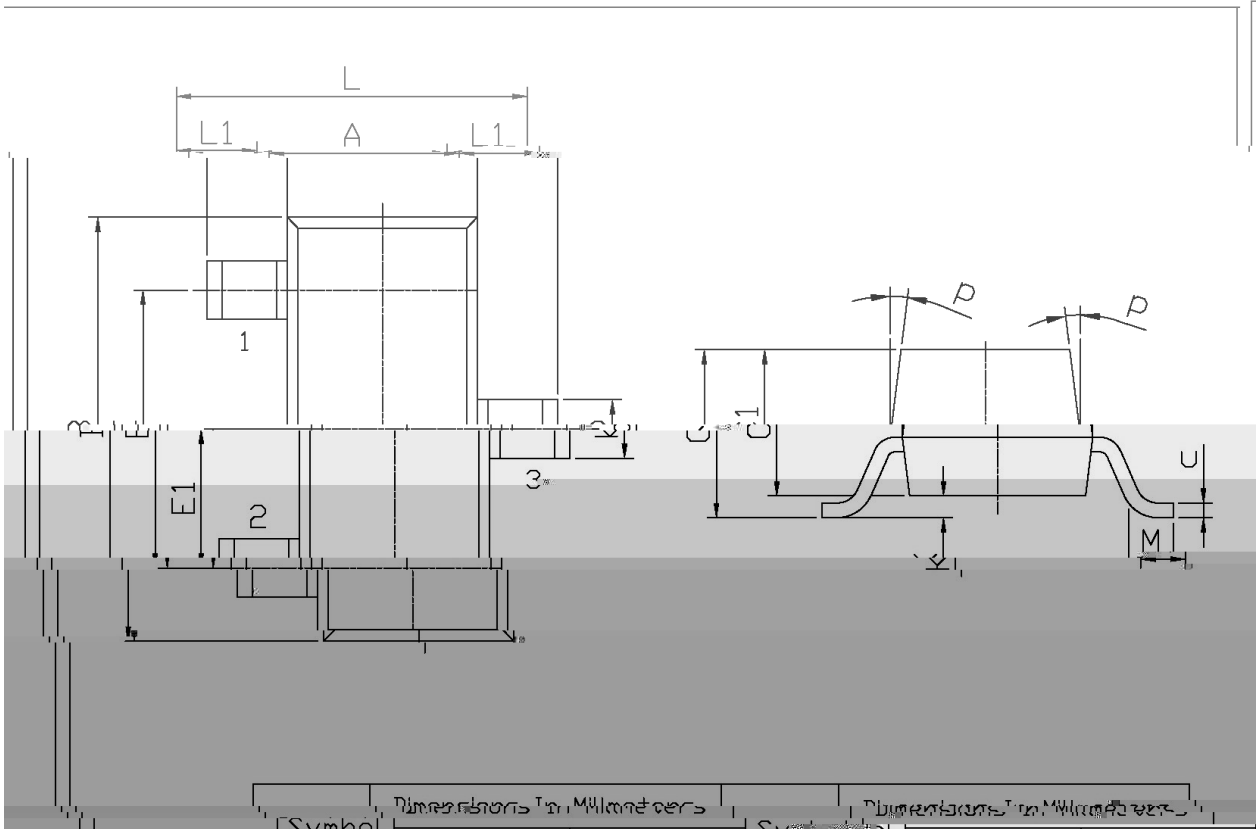


Series Pass Regulator

/ Package Dimensions

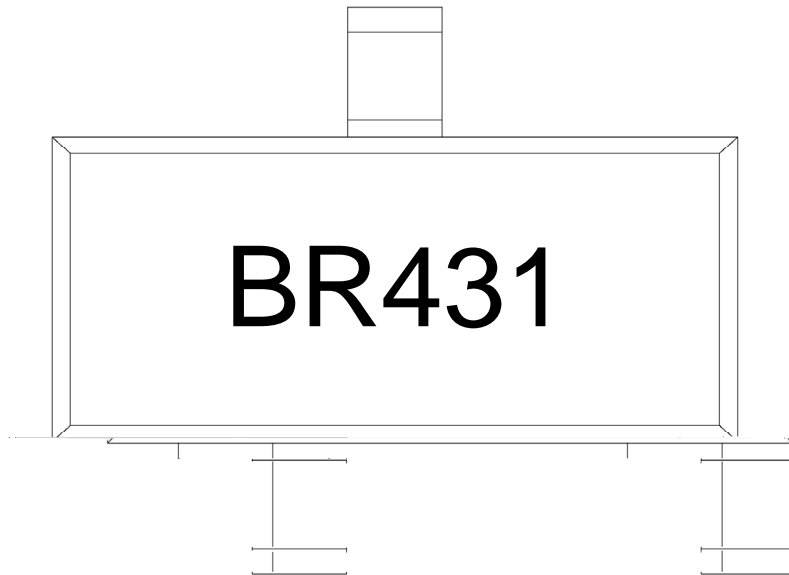
SOT-23

单位: mm



Dimensions in Millimeters			Dimensions in Millimeters		
Symbol	Min	Max	Symbol	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	C2	0.25	0.20
B	2.70	3.10	K	0	0.10

/ Marking Instructions



BR

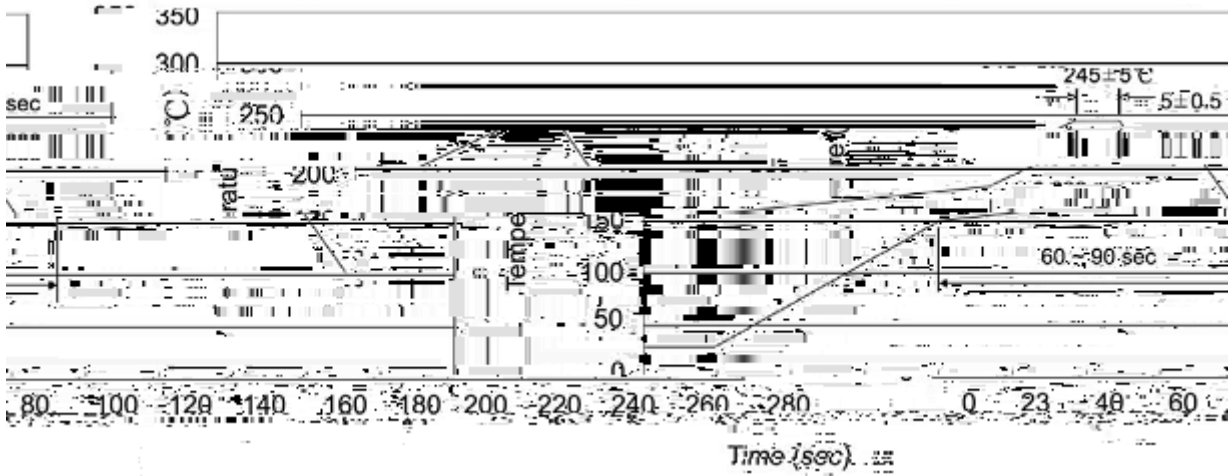
431

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	Units					Dimension (unit mm <sup>3</sup> )		
	Units/Reel	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

/ Notices