

## Zener Voltage Regulators 500 mW SOD-123 Surface Mount

### ●FEATURES

- 1)500 mW Rating on FR-4 or FR-5 Board
- 2)Package Designed for Optimal Automated Board Assembly
- 3)Small Package Size for High Density Applications
- 4)General Purpose, Medium Current
- 5)ESD Rating of Class 3 (>16 kV) per Human Body Model
- 6)We declare that the material of product compliance with RoHS requirements.
- 7)S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

### ●MECHANICAL CHARACTERISTICS:

CASE: Void-free, transfer-molded, thermosetting plastic case  
FINISH: Corrosion resistant finish, easily solderable  
FLAMMABILITY RATING:UL 94 V-0

### ●DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
LMSZ5231BT1G	E1	3000/Tape&Reel
LMSZ5231BT3G	E1	10000/Tape&Reel

### ●MAXIMUM RATINGS(Ta = 25°C)

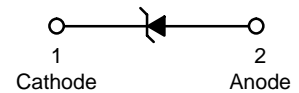
Parameter	Symbol	Limits	Unit
Total Power Dissipation on FR-5 Board, (Note 1) @ TL = 75°C Derated above 75°C	P <sub>D</sub>	500 6.7	mW mW/°C
Thermal Resistance, Junction-to-Ambient(Note 2)	R <sub>θJA</sub>	340	°C/W
Thermal Resistance, Junction-to-Lead(Note 2)	R <sub>θJL</sub>	150	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> ,T <sub>stg</sub>	-55~+150	°C

1. FR-5 = 3.5 X 1.5 inches, using the minimum recommended footprint.
2. Thermal Resistance measurement obtained via infrared Scan Method.

## LMSZ5231BT1G S-LMSZ5231BT1G



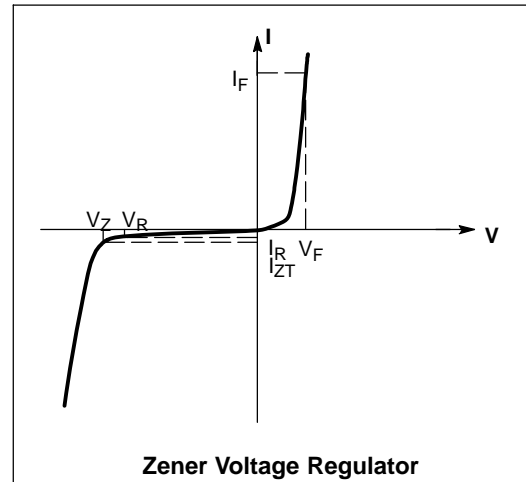
SOD-123



## LMSZ5231BT1G,S-LMSZ5231BT1G

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted,  $V_F = 0.9\text{ V Max. @ } I_F = 10\text{ mA}$ )

Symbol	Parameter
$V_Z$	Reverse Zener Voltage @ $I_{ZT}$
$I_{ZT}$	Reverse Current
$Z_{ZT}$	Maximum Zener Impedance @ $I_{ZT}$
$I_{ZK}$	Reverse Current
$Z_{ZK}$	Maximum Zener Impedance @ $I_{ZK}$
$I_R$	Reverse Leakage Current @ $V_R$
$V_R$	Reverse Voltage
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



● **ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted,  $V_F = 0.9\text{ V Max. @ } I_F = 10\text{ mA}$ )

Device	Zener Voltage (Notes 3 and 4)				Zener Impedance (Note 5)			Leakage Current	
	V <sub>Z</sub> (Volts)			@ I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub>	I <sub>R</sub> @ V <sub>R</sub>		
	Min	Nom	Max	mA	Ω	Ω	mA	μA	Volts
LMSZ5231BT1G	4.85	5.1	5.36	20	17	1600	0.25	5	2

3. The type numbers shown have a standard tolerance of  $\pm 5\%$  on the nominal Zener voltage.

4. Nominal Zener voltage is measured with the device junction in thermal equilibrium at  $T_L = 30^\circ\text{C} \pm 1^\circ\text{C}$ .

5.  $Z_{ZT}$  and  $Z_{ZK}$  are measured by dividing the AC voltage drop across the device by the ac current applied.

The specified limits are for  $I_{Z(AC)} = 0.1 I_{Z(dc)}$  with the AC frequency = 1 KHz.

LMSZ5231BT1G,S-LMSZ5231BT1G

ELECTRICAL CHARACTERISTICS CURVES

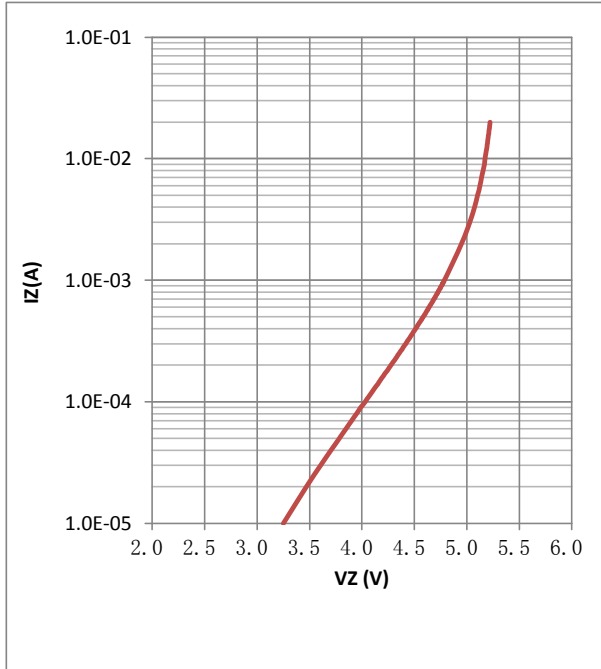


FIG. 1 Zener Voltage vs Zener Current

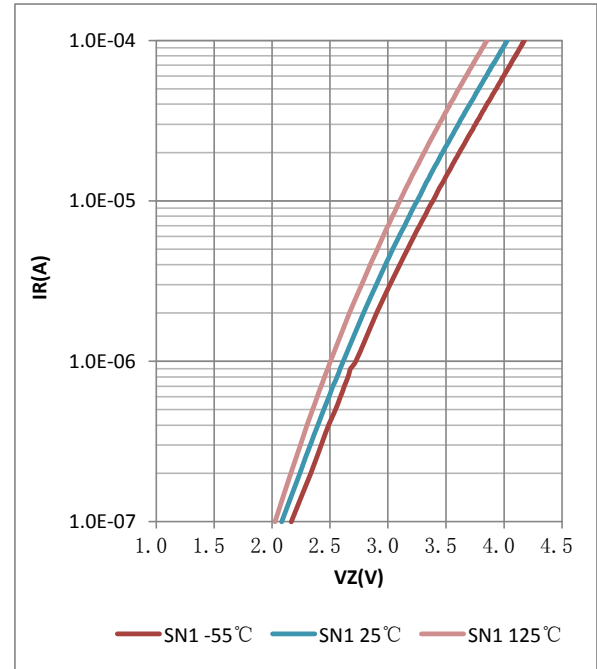
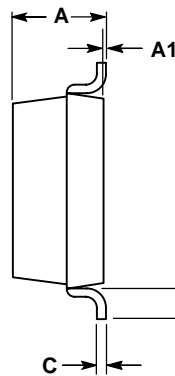
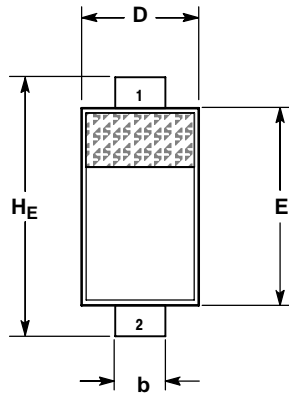


FIG. 2 Typical Leakage Current

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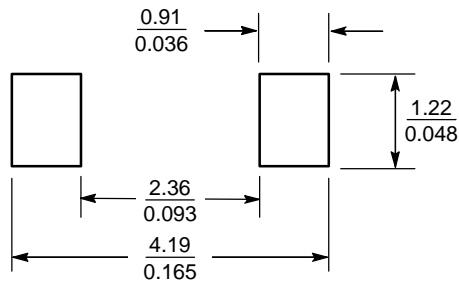


- NOTES:  
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.  
 2. CONTROLLING DIMENSION: INCH.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.94	1.17	1.35	0.037	0.046	0.053
A1	0.00	0.05	0.10	0.000	0.002	0.004
b	0.51	0.61	0.71	0.020	0.024	0.028
c	---	---	0.15	---	---	0.006
D	1.40	1.60	1.80	0.055	0.063	0.071
E	2.54	2.69	2.84	0.100	0.106	0.112
HE	3.56	3.68	3.86	0.140	0.145	0.152
L	0.25	---	---	0.010	---	---

STYLE 1:  
 PIN 1. CATHODE  
 2. ANODE

### SOLDERING FOOTPRINT\*



SCALE 10:1 (mm / inches)