

Surface Mount Zener Diodes

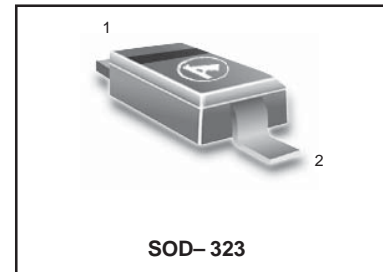
Features:

- *400mw Power Dissipation
- *Ideal for Surface Mounted Application
- *Zener Breakdown Voltage Range 3.6V to 36V
- *Pb-Free package is available
- *S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

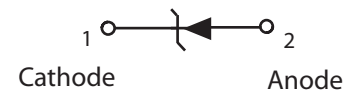
Mechanical Data:

- *Case : SOD-323 Molded plastic
- *Polarity: Cathode Indicated by Polarity Band
- *Marking: Marking Code (See Specific marking table)
- *Package Weight: 4.51 mg/unit

LUDZS5.1MBT1G Series S-LUDZS5.1MBT1G Series



Equivalent Circuit Diagram



Maximum Ratings and Electrical Characteristics (TA=25 °C Unless Otherwise Noted)

| Characteristics | Symbol | Value | Unit |
|---|----------------------|-------------|------|
| Power Dissipation | PD | 400 | mW |
| Thermal Resistance from Junction to Ambient | R _{θJA} | 312 | °C/W |
| Junction and Storage Temperature Range | T _j ,TSTG | -55 to +150 | °C |

Device Marking Code

| Device | Marking | Device | Marking |
|---------------|---------|--------------|---------|
| LUDZS3.6MBT1G | B6 | LUDZS12MBT1G | BU |
| LUDZS3.9MBT1G | B7 | LUDZS13MBT1G | BV |
| LUDZS4.3MBT1G | BT | LUDZS15MBT1G | BW |
| LUDZS4.7MBT1G | B9 | LUDZS16MBT1G | B5 |
| LUDZS5.1MBT1G | BA | LUDZS18MBT1G | BD |
| LUDZS5.6MBT1G | BC | LUDZS20MBT1G | BG |
| LUDZS6.2MBT1G | BE | LUDZS22MBT1G | BK |
| LUDZS6.8MBT1G | BF | LUDZS24MBT1G | BM |
| LUDZS7.5MBT1G | BH | LUDZS27MBT1G | BN |
| LUDZS8.2MBT1G | BJ | LUDZS30MBT1G | BP |
| LUDZS9.1MBT1G | BL | LUDZS33MBT1G | BR |
| LUDZS10MBT1G | B0 | LUDZS36MBT1G | BS |
| LUDZS11MBT1G | B1 | - | - |

Ratings and Characteristic curves

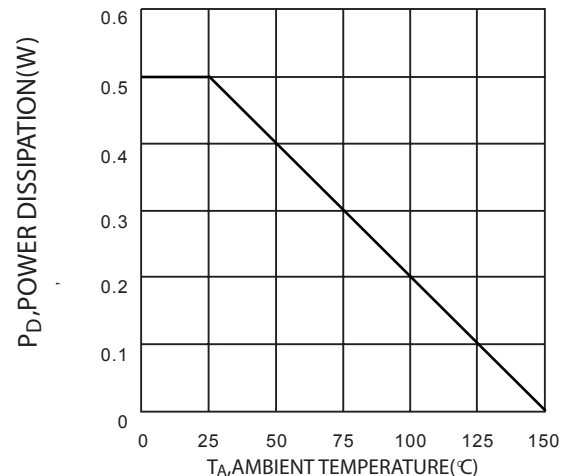


FIG. 1 Power Dissipation vs Ambient temperature

LUDZS5.1MBT1G Series , S-LUDZS5.1MBT1G Series

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

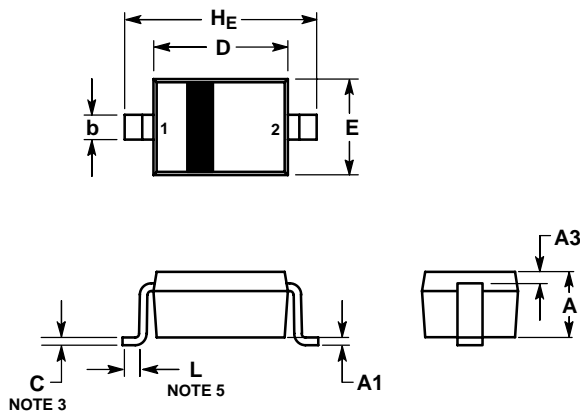
| Device | Zener voltage | | | Operating resistance | | Rising operating resistance | | Reverse current | |
|---------------|-----------------|--------|---------------|----------------------|---------------|-----------------------------|---------------|--------------------|--------------|
| | $V_Z(\text{V})$ | | | $Z_Z(\Omega)$ | | $Z_{zk}(\Omega)$ | | $I_R(\mu\text{A})$ | |
| | Min. | Max. | I_Z (mA) | Max. | I_Z (mA) | Max. | I_Z (mA) | Max. | V_R (V) |
| LUDZS3.6MBT1G | 3.530 | 3.670 | 5 | 85 | 5 | 600 | 1.0 | 2 | 1.0 |
| LUDZS3.9MBT1G | 3.820 | 3.980 | 5 | 85 | 5 | 600 | 1.0 | 2 | 1.0 |
| LUDZS4.3MBT1G | 4.210 | 4.390 | 5 | 80 | 5 | 600 | 1.0 | 1 | 1.0 |
| LUDZS4.7MBT1G | 4.610 | 4.790 | 5 | 70 | 5 | 500 | 1.0 | 0.5 | 1.0 |
| LUDZS5.1MBT1G | 5.000 | 5.200 | 5 | 50 | 5 | 480 | 1.0 | 0.1 | 1.0 |
| LUDZS5.6MBT1G | 5.490 | 5.710 | 5 | 30 | 5 | 400 | 1.0 | 0.1 | 1.0 |
| LUDZS6.2MBT1G | 6.080 | 6.320 | 5 | 10 | 5 | 150 | 1.0 | 0.1 | 2.0 |
| LUDZS6.8MBT1G | 6.660 | 6.940 | 5 | 8 | 5 | 80 | 1.0 | 0.1 | 3.0 |
| LUDZS7.5MBT1G | 7.350 | 7.650 | 5 | 7 | 5 | 50 | 1.0 | 0.1 | 5.0 |
| LUDZS8.2MBT1G | 8.040 | 8.360 | 5 | 7 | 5 | 50 | 1.0 | 0.1 | 6.1 |
| LUDZS9.1MBT1G | 8.920 | 9.280 | 5 | 10 | 5 | 50 | 1.0 | 0.1 | 6.8 |
| LUDZS10MBT1G | 9.800 | 10.200 | 5 | 15 | 5 | 70 | 1.0 | 0.1 | 7.5 |
| LUDZS11MBT1G | 10.780 | 11.220 | 5 | 20 | 5 | 70 | 1.0 | 0.1 | 8.2 |
| LUDZS12MBT1G | 11.760 | 12.240 | 5 | 20 | 5 | 90 | 1.0 | 0.1 | 9.0 |
| LUDZS13MBT1G | 12.740 | 13.260 | 5 | 26 | 5 | 110 | 1.0 | 0.1 | 9.7 |
| LUDZS15MBT1G | 14.700 | 15.300 | 5 | 30 | 5 | 110 | 1.0 | 0.1 | 11 |
| LUDZS16MBT1G | 15.680 | 16.320 | 5 | 40 | 5 | 170 | 1.0 | 0.1 | 12 |
| LUDZS18MBT1G | 17.640 | 18.360 | 5 | 45 | 5 | 170 | 1.0 | 0.1 | 14 |
| LUDZS20MBT1G | 19.600 | 20.400 | 5 | 55 | 5 | 220 | 1.0 | 0.1 | 15 |
| LUDZS22MBT1G | 21.560 | 22.440 | 5 | 55 | 5 | 220 | 1.0 | 0.1 | 17 |
| LUDZS24MBT1G | 23.520 | 24.480 | 5 | 70 | 5 | 220 | 1.0 | 0.1 | 18 |
| LUDZS27MBT1G | 26.460 | 27.540 | 5 | 80 | 5 | 220 | 1.0 | 0.1 | 20 |
| LUDZS30MBT1G | 29.400 | 30.600 | 5 | 80 | 5 | 220 | 1.0 | 0.1 | 22 |
| LUDZS33MBT1G | 32.340 | 33.660 | 5 | 80 | 5 | 220 | 1.0 | 0.1 | 24 |
| LUDZS36MBT1G | 35.280 | 36.720 | 5 | 80 | 5 | 220 | 1.0 | 0.1 | 27 |

Notes) 1. The Zener voltage (V_Z) is measured 40ms after power is supplied.

2. The operating resistances (Z_Z , Z_{zk}) are measured by superimposing a minute alternating current on the regulated current (I_Z).

LUDZS5.1MBT1G Series , S-LUDZS5.1MBT1G Series

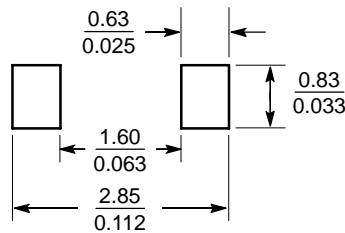
SOD-323



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: MILLIMETERS.
 3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
 4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
 5. DIMENSION L IS MEASURED FROM END OF RADIUS.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|-------|-----------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.80 | 0.90 | 1.00 | 0.031 | 0.035 | 0.040 |
| A1 | 0.00 | 0.05 | 0.10 | 0.000 | 0.002 | 0.004 |
| A3 | 0.15 REF | | | 0.006 REF | | |
| b | 0.25 | 0.32 | 0.4 | 0.010 | 0.012 | 0.016 |
| C | 0.089 | 0.12 | 0.177 | 0.003 | 0.005 | 0.007 |
| D | 1.60 | 1.70 | 1.80 | 0.062 | 0.066 | 0.070 |
| E | 1.15 | 1.25 | 1.35 | 0.045 | 0.049 | 0.053 |
| L | 0.08 | | | 0.003 | | |
| He | 2.30 | 2.50 | 2.70 | 0.090 | 0.098 | 0.105 |

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