



POWER DISSIPATION: 5.0 W

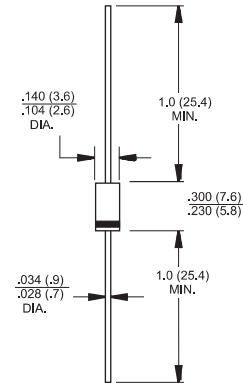
Features

- ◇ Silicon planar power zener diodes
- ◇ For use in stabilizing and clipping circuits with high power rating.
- ◇ Standard zener voltage tolerance is $\pm 10\%$. Add suffix "B" for $\pm 5\%$ tolerance. other zener voltage and tolerances are available upon request.

Mechanical Data

- ◇ Case:DO-15
- ◇ Polarity: cathode Band
- ◇ Marking: type number
- ◇ Approx. weight: 0.40grams

DO-15



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate by 20%.

| | SYMBOL | VALUE | UNIT |
|--|-----------|-------------|---------|
| Zener current (see Table "Characteristics") | | | |
| DC power dissipation @ $T_L = 75$, measure at zero lead length (Fig.1) derate above 75 (NOTE 1) | P_D | 5.0 40.0 | W mW |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)(NOTE 1,2) | I_{FSM} | see fig.5 | A |
| Junction temperature | T_J | -55---+150 | °C |
| Storage temperature range | T_s | -55---+150 | °C |

NOTES: (1) Mounted on 8.0mm² copper pads to each terminal.

(2) 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minute maximum.

ELECTRICAL CHARACTERISTICS (T_A=25)

| Type (Note 1) | Zener voltage (Note 2) | | Maximum Zener Impedance (Note 2) | | Max Reverse Leakage Current | | I _R (Note 3) A | V _Z (Note 4) V | I _{ZM} (Note 5) mA |
|------------------|------------------------------------|-----------------------|--|--|--------------------------------|----------------|---------------------------------|---------------------------------|-----------------------------------|
| | V _{Z@I_{ZT}} V | I _{ZT} mA | Z _{ZT@I_{ZT}} Ω | Z _{ZT@I_{ZK} =1μA} Ω | I _R | V _R | | | |
| | | | | | μA | V | | | |
| 1N5333B | 3.3 | 380 | 3.0 | 400 | 300 | 1.0 | 20 | 0.85 | 1440 |
| 1N5334B | 3.6 | 350 | 2.5 | 500 | 150 | 1.0 | 18.7 | 0.80 | 1320 |
| 1N5335B | 3.9 | 320 | 2.0 | 500 | 50 | 1.0 | 17.6 | 0.54 | 1220 |
| 1N5336B | 4.3 | 290 | 2.0 | 500 | 10 | 1.0 | 16.4 | 0.49 | 1100 |
| 1N5337B | 4.7 | 260 | 2.0 | 450 | 5.0 | 1.0 | 15.3 | 0.44 | 1010 |
| 1N5338B | 5.1 | 240 | 1.5 | 400 | 1.0 | 1.0 | 14.4 | 0.39 | 930 |
| 1N5339B | 5.6 | 220 | 1.0 | 400 | 1.0 | 2.0 | 13.4 | 0.25 | 865 |
| 1N5340B | 6.0 | 200 | 1.0 | 300 | 1.0 | 3.0 | 12.7 | 0.19 | 790 |
| 1N5341B | 6.2 | 200 | 1.0 | 200 | 1.0 | 3.0 | 12.4 | 0.10 | 765 |
| 1N5342B | 6.8 | 175 | 1.0 | 200 | 10 | 5.2 | 11.5 | 0.15 | 700 |
| 1N5343B | 7.5 | 175 | 1.5 | 200 | 10 | 5.7 | 10.7 | 0.15 | 630 |
| 1N5344B | 8.2 | 150 | 1.5 | 200 | 10 | 6.2 | 10.0 | 0.20 | 580 |
| 1N5345B | 8.7 | 150 | 2.0 | 200 | 10 | 6.6 | 9.5 | 0.20 | 545 |
| 1N5346B | 9.1 | 150 | 2.0 | 150 | 7.5 | 6.9 | 9.2 | 0.22 | 520 |
| 1N5347B | 10 | 125 | 2.0 | 125 | 5.0 | 7.6 | 8.6 | 0.22 | 475 |
| 1N5348B | 11 | 125 | 2.5 | 125 | 5.0 | 8.4 | 8.0 | 0.25 | 430 |
| 1N5349B | 12 | 100 | 2.5 | 125 | 2.0 | 9.1 | 7.5 | 0.25 | 395 |
| 1N5350B | 13 | 100 | 2.5 | 100 | 1.0 | 9.9 | 7.0 | 0.25 | 365 |
| 1N5351B | 14 | 100 | 2.5 | 75 | 1.0 | 10.6 | 6.7 | 0.25 | 340 |
| 1N5352B | 15 | 75 | 2.5 | 75 | 1.0 | 11.5 | 6.3 | 0.25 | 315 |
| 1N5353B | 16 | 75 | 2.5 | 75 | 1.0 | 12.2 | 6.0 | 0.30 | 295 |
| 1N5354B | 17 | 70 | 2.5 | 75 | 0.5 | 12.9 | 5.8 | 0.35 | 280 |
| 1N5355B | 18 | 65 | 2.5 | 75 | 0.5 | 13.7 | 5.5 | 0.40 | 264 |
| 1N5356B | 19 | 65 | 3.0 | 75 | 0.5 | 14.4 | 5.3 | 0.40 | 250 |
| 1N5357B | 20 | 65 | 3.0 | 75 | 0.5 | 15.2 | 5.1 | 0.40 | 237 |
| 1N5358B | 22 | 50 | 3.5 | 75 | 0.5 | 16.7 | 4.7 | 0.45 | 216 |
| 1N5359B | 24 | 50 | 3.5 | 100 | 0.5 | 18.2 | 4.4 | 0.55 | 198 |
| 1N5360B | 25 | 50 | 4.0 | 110 | 0.5 | 19.0 | 4.3 | 0.55 | 190 |
| 1N5361B | 27 | 50 | 5.0 | 120 | 0.5 | 20.6 | 4.1 | 0.60 | 176 |
| 1N5362B | 28 | 50 | 6.0 | 130 | 0.5 | 21.2 | 3.9 | 0.60 | 170 |
| 1N5363B | 30 | 40 | 8.0 | 140 | 0.5 | 22.8 | 3.7 | 0.60 | 158 |
| 1N5364B | 33 | 40 | 10 | 150 | 0.5 | 25.1 | 3.5 | 0.60 | 144 |
| 1N5365B | 36 | 30 | 11 | 160 | 0.5 | 27.4 | 3.5 | 0.65 | 132 |
| 1N5366B | 39 | 30 | 14 | 170 | 0.5 | 29.7 | 3.1 | 0.65 | 122 |
| 1N5367B | 43 | 30 | 20 | 190 | 0.5 | 32.7 | 2.8 | 0.70 | 110 |
| 1N5368B | 47 | 25 | 25 | 210 | 0.5 | 35.8 | 2.7 | 0.80 | 100 |
| 1N5369B | 51 | 25 | 27 | 230 | 0.5 | 38.8 | 2.5 | 0.90 | 93 |
| 1N5370B | 56 | 20 | 35 | 280 | 0.5 | 42.6 | 2.3 | 1.00 | 86 |
| 1N5371B | 60 | 20 | 40 | 350 | 0.5 | 45.5 | 2.2 | 1.20 | 79 |
| 1N5372B | 62 | 20 | 42 | 400 | 0.5 | 47.1 | 2.1 | 1.35 | 76 |

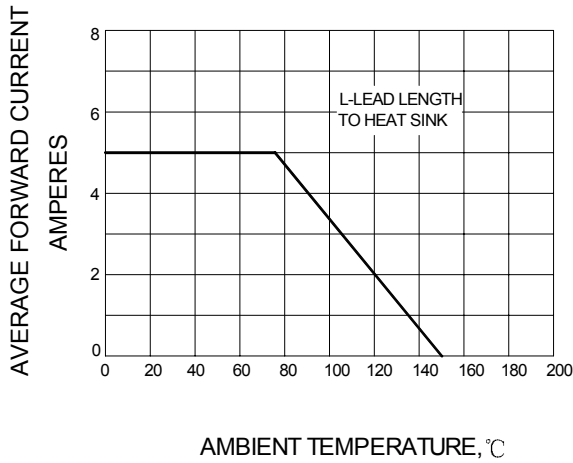
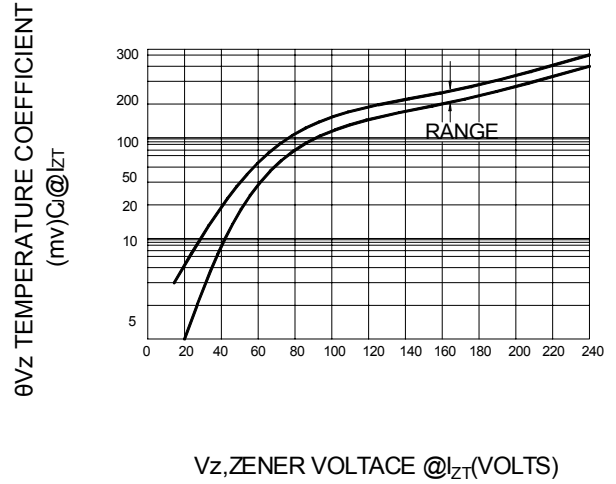
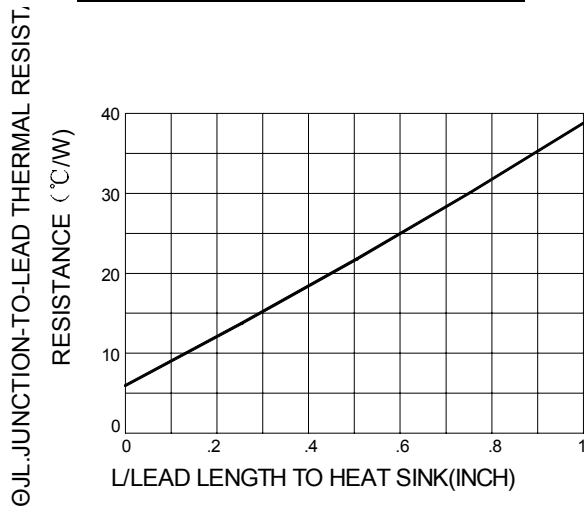
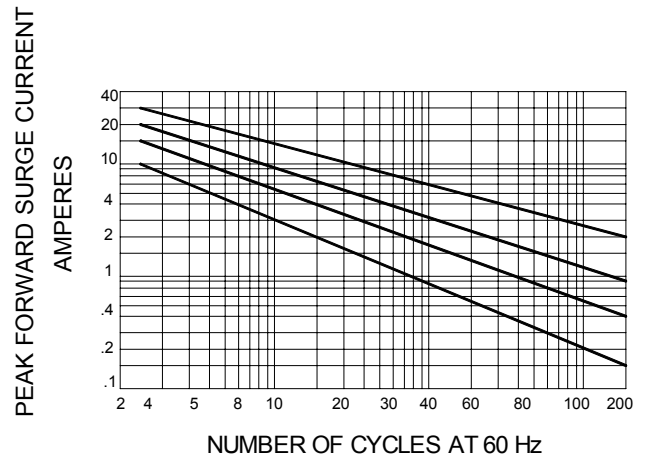
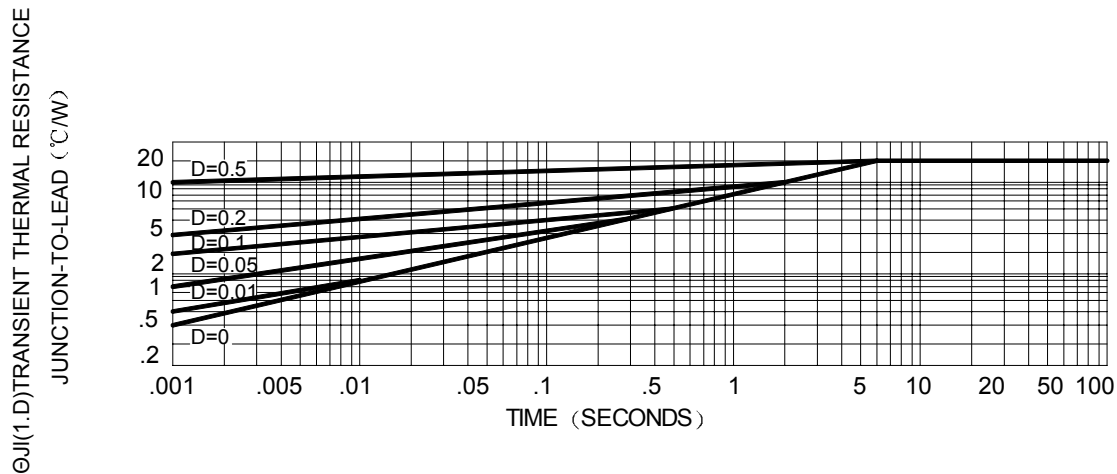
ELECTRICAL CHARACTERISTICS (T_A=25)

| Type (Note 1) | Zener voltage (Note 2) | | Maximum Zener Impedance (Note 2) | | Max Reverse Leakage Current | | I _R (Note 3) A | V _Z (Note 4) V | I _{ZM} (Note 5) mA |
|------------------|--------------------------------------|-----------------------|--|--|--------------------------------|----------------|---------------------------------|---------------------------------|-----------------------------------|
| | V _Z @I _{ZT} V | I _{ZT} mA | Z _{ZT} @I _{ZT} Ω | Z _{ZT} @I _{ZK} =1μA Ω | I _R | V _R | | | |
| | | | | | μA | V | | | |
| 1N5373B | 68 | 20 | 44 | 500 | 0.5 | 51.7 | 2.0 | 1.5 | 70 |
| 1N5374B | 75 | 20 | 45 | 620 | 0.5 | 56.0 | 1.9 | 1.6 | 63 |
| 1N5375B | 82 | 15 | 65 | 720 | 0.5 | 62.2 | 1.8 | 1.8 | 58 |
| 1N5376B | 87 | 15 | 75 | 760 | 0.5 | 66.0 | 1.7 | 2.0 | 54.5 |
| 1N5377B | 91 | 15 | 75 | 760 | 0.5 | 69.2 | 1.6 | 2.2 | 52.5 |
| 1N5378B | 100 | 12 | 90 | 800 | 0.5 | 76.0 | 1.5 | 2.5 | 47.5 |
| 1N5379B | 110 | 12 | 125 | 1000 | 0.5 | 83.6 | 1.4 | 2.5 | 43.0 |
| 1N5380B | 120 | 10 | 170 | 1150 | 0.5 | 91.2 | 1.3 | 2.5 | 39.5 |
| 1N5381B | 130 | 10 | 190 | 1250 | 0.5 | 98.8 | 1.2 | 2.5 | 36.6 |
| 1N5382B | 140 | 8.0 | 230 | 1500 | 0.5 | 106 | 1.2 | 2.5 | 34.0 |
| 1N5383B | 150 | 8.0 | 330 | 1500 | 0.5 | 114 | 1.1 | 3.0 | 31.6 |
| 1N5384B | 160 | 8.0 | 350 | 1650 | 0.5 | 122 | 1.1 | 3.0 | 29.4 |
| 1N5385B | 170 | 8.0 | 380 | 1750 | 0.5 | 129 | 1.0 | 3.0 | 28.0 |
| 1N5386B | 180 | 5.0 | 430 | 1750 | 0.5 | 137 | 1.0 | 4.0 | 26.4 |
| 1N5387B | 190 | 5.0 | 450 | 1850 | 0.5 | 144 | 0.9 | 5.0 | 25.0 |
| 1N5388B | 200 | 5.0 | 480 | 1850 | 0.5 | 152 | 0.9 | 5.0 | 23.6 |

NOTE:

1. TOLERANCE AND VOLTAGE DESIGNATION-The JEDEC type numbers shown indicate a tolerance of ±10% with guaranteed limits on only V_Z, I_R, I_r, and V_F as shown in the electrical characteristics table. Units with guaranteed limits on all seven parameters are indicated by suffix "B" for ±5% tolerance.
2. ZENER VOLTAGE (V_Z) AND IMPEDANCE (Z_{ZT} & Z_{ZK}) - Test conditions for zener voltage and impedance are as follows; I_Z is applied 40±10ms prior to reading. Mounting contacts are located from the inside edge of mounting clips to the body of the diode.
3. SURGE CURRENT (I_r) - Surge current is specified as the maximum allowable peak, non-recurrent square-wave current with a pulse width, PW, of 8.3ms. The data given in Fig 5. May be used to find the maximum surge current for a square wave of any pulse width between 1 ms by plotting the applicable points on logarithmic paper. Examples of this, using the 6.8v and 200v zeners, are shown in Fig 6. Mounting contact located as specified in NOTE 3.
4. VOLTAGE REGULATION (V_Z) - Test conditions for voltage regulation are as follows: V_Z measurements are the made at 10% and then at 50% of the I_Z max value listed in the electrical characteristics table. The test currents are the same for the 5% and 10% tolerance devices. The test current time duration for each V_Z measurement is 40±10ms. Mounting contact located as specified in NOTE 2.
5. MAXIMUM REGULATOR CURRENT (I_{ZM}) - The maximum current shown is based on the maximum voltage of a 5% type unit. Therefore, it applies only to the B-suffix device. The actual I_{ZM} for any device may not exceed the value of 5 watts divided by the actual V_Z of the device. T_A=75 at 3/8" maximum from the device body.

Ratings And Characteristic Curves

FIG.1 -- FORWARD DERATING CURVE

FIG.2 -- TEMPERATURE COEFFICIENT RANGE

FIG.3 -- TYPICAL THERMAL RESISTANCE

FIG.4 -- MAXIMUM NON-REPETITIVE SURGE CURRENT

FIG.5 -- TYPICAL THERMAL RESPONSE


Ratings And Characteristic Curves

FIG.6 – PEAK SURGE CURRENT VERSUS PULSE WIDTH

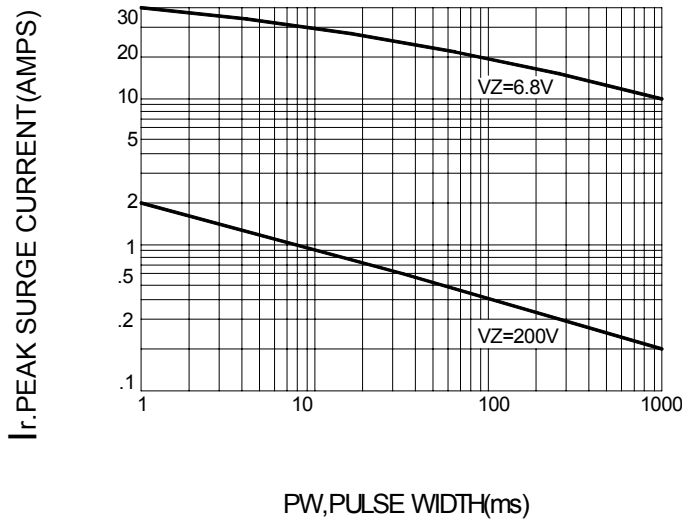


FIG.7 – ZENER VOLTAGE VERSUS ZENER CURRENT
V_z=6.8 THRU 10 VOLTS

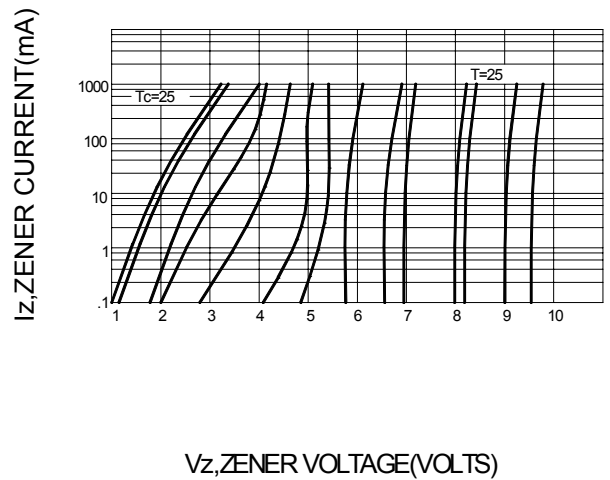


FIG.8 – ZENER VOLTAGE VERSUS ZENER CURRENT
V_z=11 THRU 75 VOLTS

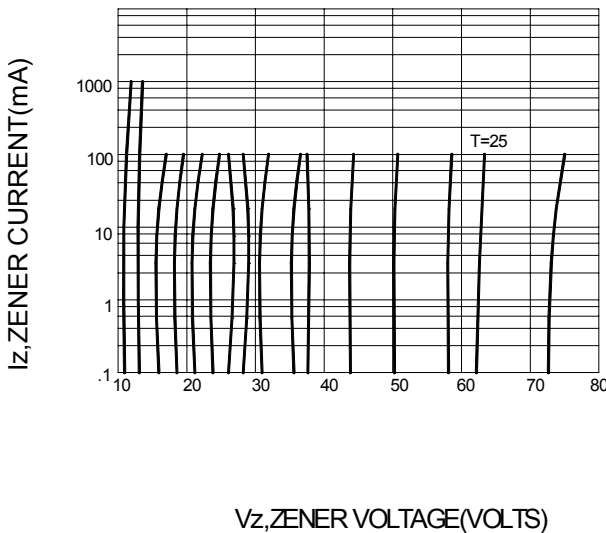
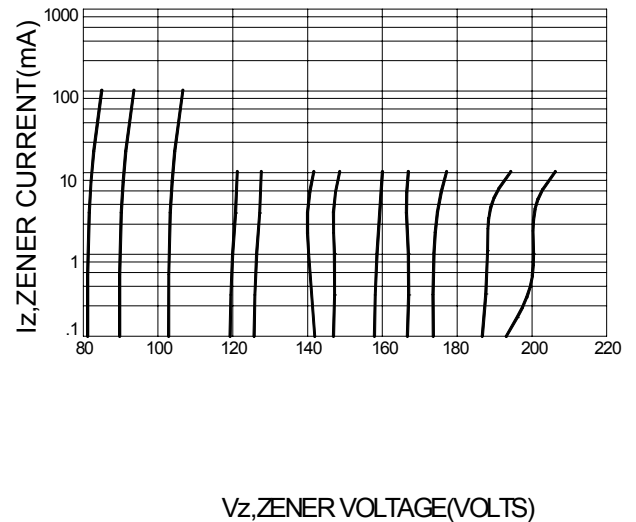


FIG.9 – ZENER VOLTAGE VERSUS ZENER CURRENT
V_z=82 THRU 200 VOLTS



| PACKAGE | SPQ/PCS | CARTON SPQ/PCS | CARTON SIZE/CM | CARTON GW/KG | CARTON NW/KG |
|---------|-----------|----------------|----------------|--------------|--------------|
| DO-15 | 3000/AMMO | 30000 | 42X28X31 | 12.00 | 10.00 |