

1N5338B - 1N5388B

SILICON ZENER DIODES

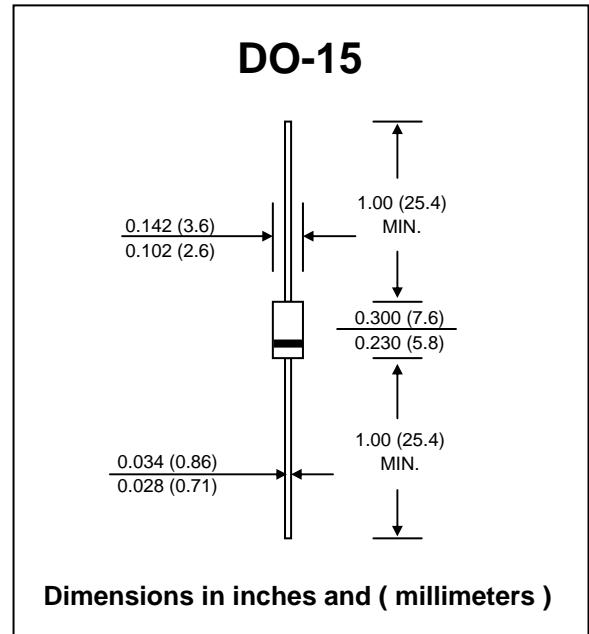
V_Z : 5.1 - 200 Volts
P_D : 5 Watts

FEATURES :

- * Complete Voltage Range 5.1 to 200 Volts
- * High peak reverse power dissipation
- * High reliability
- * Low leakage current
- * **Pb / RoHS Free**

MECHANICAL DATA :

- * Case : DO-15 Molded plastic
- * Epoxy : UL94V-0 rate flame retardant
- * Lead : Axial lead solderable per MIL-STD-202, Method 208 guaranteed
- * Polarity : Color band denotes cathode end
- * Mounting position : Any
- * Weight : 0.4 gram



MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified

| Rating | Symbol | Value | Unit |
|--|------------------|---------------|-------|
| DC Power Dissipation at T _L = 75 °C (Note1) | P _D | 5.0 | W |
| Maximum Forward Voltage at I _F = 1 A | V _F | 1.2 | V |
| Maximum Thermal Resistance Junction to Ambient Air (Note2) | R _{θJA} | 45 | K / W |
| Junction Temperature Range | T _J | - 65 to + 200 | °C |
| Storage Temperature Range | T _s | - 65 to + 200 | °C |

Note :

(1) T_L = Lead temperature at 3/8 " (9.5mm) from body

Fig. 1 POWER TEMPERATURE DERATING CURVE

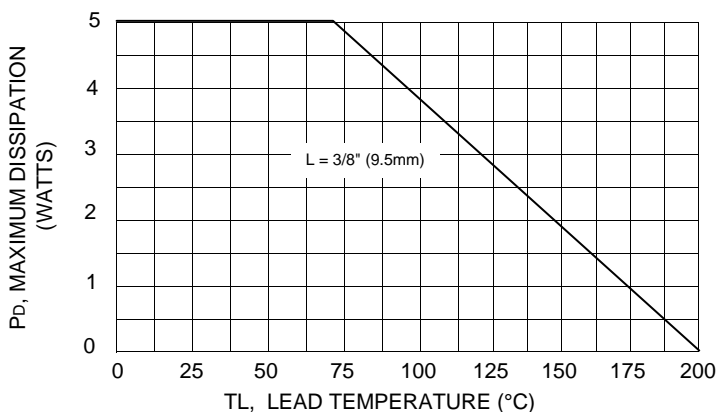
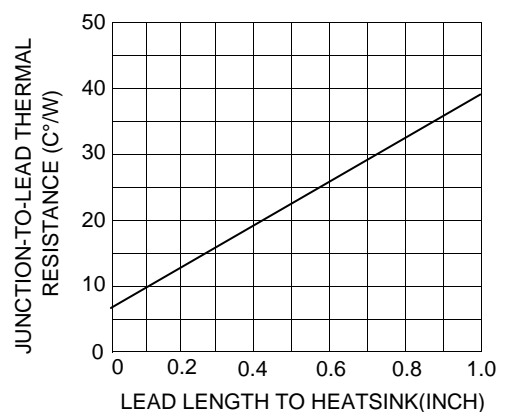


Fig. 2 TYPICAL THERMAL RESISTANCE



ELECTRICAL CHARACTERISTICS (Rating at 25 °C ambient temperature unless otherwise specified)

| Type No. | Nominal Zener Voltage | | Maximum Zener Impedance | | | Maximum Reverse Leakage Current | | Maximum DC Zener Current |
|----------|-----------------------|------|-------------------------|-----------|------|---------------------------------|------|--------------------------|
| | Vz @ IzT | IzT | ZzT @ IzT | Zzk @ Izk | Izk | IR @ VR | IzM | |
| | (V) | (mA) | (Ω) | (Ω) | (mA) | (μA) | (V) | (mA) |
| 1N5338B | 5.1 | 240 | 1.5 | 400 | 1.0 | 1.0 | 1.0 | 930 |
| 1N5339B | 5.6 | 220 | 1.0 | 400 | 1.0 | 1.0 | 2.0 | 856 |
| 1N5340B | 6.0 | 200 | 1.0 | 300 | 1.0 | 1.0 | 3.0 | 790 |
| 1N5341B | 6.2 | 200 | 1.0 | 200 | 1.0 | 1.0 | 3.0 | 765 |
| 1N5342B | 6.8 | 175 | 1.0 | 200 | 1.0 | 10 | 5.2 | 700 |
| 1N5343B | 7.5 | 175 | 1.5 | 200 | 1.0 | 10 | 5.7 | 630 |
| 1N5344B | 8.2 | 150 | 1.5 | 200 | 1.0 | 10 | 6.2 | 580 |
| 1N5345B | 8.7 | 150 | 2.0 | 200 | 1.0 | 10 | 6.6 | 545 |
| 1N5346B | 9.1 | 150 | 2.0 | 150 | 1.0 | 7.5 | 6.9 | 520 |
| 1N5347B | 10 | 125 | 2.0 | 125 | 1.0 | 5.0 | 7.6 | 475 |
| 1N5348B | 11 | 125 | 2.5 | 125 | 1.0 | 5.0 | 8.4 | 430 |
| 1N5349B | 12 | 100 | 2.5 | 125 | 1.0 | 2.0 | 9.1 | 395 |
| 1N5350B | 13 | 100 | 2.5 | 100 | 1.0 | 1.0 | 9.9 | 365 |
| 1N5351B | 14 | 100 | 2.5 | 75 | 1.0 | 1.0 | 10.6 | 340 |
| 1N5352B | 15 | 75 | 2.5 | 75 | 1.0 | 1.0 | 11.5 | 315 |
| 1N5353B | 16 | 75 | 2.5 | 75 | 1.0 | 1.0 | 12.2 | 295 |
| 1N5354B | 17 | 70 | 2.5 | 75 | 1.0 | 0.5 | 12.9 | 280 |
| 1N5355B | 18 | 65 | 2.5 | 75 | 1.0 | 0.5 | 13.7 | 265 |
| 1N5356B | 19 | 65 | 3.0 | 75 | 1.0 | 0.5 | 14.4 | 250 |
| 1N5357B | 20 | 65 | 3.0 | 75 | 1.0 | 0.5 | 15.2 | 237 |
| 1N5358B | 22 | 50 | 3.5 | 75 | 1.0 | 0.5 | 16.7 | 216 |
| 1N5359B | 24 | 50 | 3.5 | 100 | 1.0 | 0.5 | 18.2 | 198 |
| 1N5360B | 25 | 50 | 4.0 | 110 | 1.0 | 0.5 | 19.0 | 190 |
| 1N5361B | 27 | 50 | 5.0 | 120 | 1.0 | 0.5 | 20.6 | 176 |
| 1N5362B | 28 | 50 | 6.0 | 130 | 1.0 | 0.5 | 21.2 | 170 |
| 1N5363B | 30 | 40 | 8.0 | 140 | 1.0 | 0.5 | 22.8 | 158 |
| 1N5364B | 33 | 40 | 10 | 150 | 1.0 | 0.5 | 25.1 | 144 |
| 1N5365B | 36 | 30 | 11 | 160 | 1.0 | 0.5 | 27.4 | 132 |
| 1N5366B | 39 | 30 | 14 | 170 | 1.0 | 0.5 | 29.7 | 122 |
| 1N5367B | 43 | 30 | 20 | 190 | 1.0 | 0.5 | 32.7 | 110 |
| 1N5368B | 47 | 25 | 25 | 210 | 1.0 | 0.5 | 35.8 | 100 |
| 1N5369B | 51 | 25 | 27 | 230 | 1.0 | 0.5 | 38.8 | 93.0 |
| 1N5370B | 56 | 20 | 35 | 280 | 1.0 | 0.5 | 42.6 | 86.0 |
| 1N5371B | 60 | 20 | 40 | 350 | 1.0 | 0.5 | 45.5 | 79.0 |
| 1N5372B | 62 | 20 | 42 | 400 | 1.0 | 0.5 | 47.1 | 76.0 |
| 1N5373B | 68 | 20 | 44 | 500 | 1.0 | 0.5 | 51.7 | 70.0 |
| 1N5374B | 75 | 20 | 45 | 620 | 1.0 | 0.5 | 56.0 | 63.0 |
| 1N5375B | 82 | 15 | 65 | 720 | 1.0 | 0.5 | 62.2 | 58.0 |
| 1N5376B | 87 | 15 | 75 | 760 | 1.0 | 0.5 | 66.0 | 54.5 |
| 1N5377B | 91 | 15 | 75 | 760 | 1.0 | 0.5 | 69.2 | 52.5 |
| 1N5378B | 100 | 12 | 90 | 800 | 1.0 | 0.5 | 76.0 | 47.5 |
| 1N5379B | 110 | 12 | 125 | 1000 | 1.0 | 0.5 | 83.6 | 43.0 |
| 1N5380B | 120 | 10 | 170 | 1150 | 1.0 | 0.5 | 91.2 | 39.5 |
| 1N5381B | 130 | 10 | 190 | 1250 | 1.0 | 0.5 | 98.8 | 36.6 |
| 1N5382B | 140 | 8.0 | 230 | 1500 | 1.0 | 0.5 | 106 | 34.0 |
| 1N5383B | 150 | 8.0 | 330 | 1500 | 1.0 | 0.5 | 114 | 31.6 |
| 1N5384B | 160 | 8.0 | 350 | 1650 | 1.0 | 0.5 | 122 | 29.4 |
| 1N5385B | 170 | 8.0 | 380 | 1750 | 1.0 | 0.5 | 129 | 28.0 |
| 1N5386B | 180 | 5.0 | 430 | 1750 | 1.0 | 0.5 | 137 | 26.4 |
| 1N5387B | 190 | 5.0 | 450 | 1850 | 1.0 | 0.5 | 144 | 25.0 |
| 1N5388B | 200 | 5.0 | 480 | 1850 | 1.0 | 0.5 | 152 | 23.6 |

Note : (1) Suffix " B " indicates $\pm 5\%$ tolerance, suffix " A " indicates $\pm 10\%$ tolerance.

RATING AND CHARACTERISTIC CURVES (1N5338B - 1N5388B)

Fig 3. Typical Thermal Response L, Lead Length = 3/8 Inch

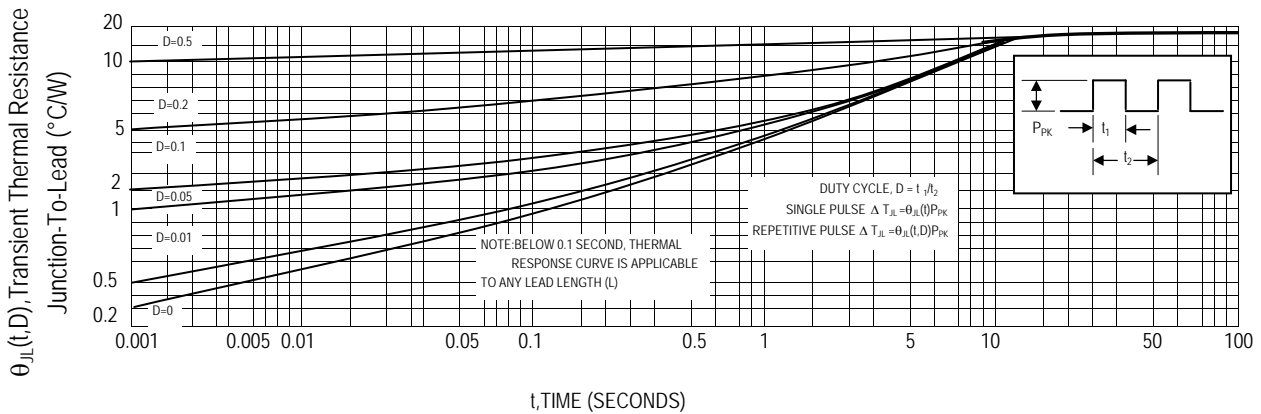


Fig.4 Maximum Non-Repetitive Surg Current versus Nominal Zener Voltage

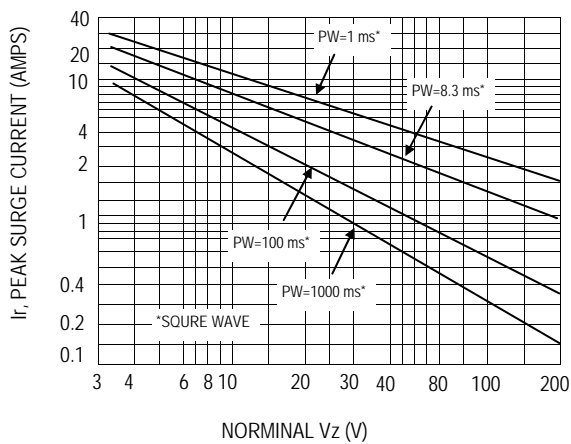


Fig. 5 Peak Surg Current versus Pulse Width

