



# 1N5333B THRU 1N5388B

## 5W SILICON ZENER DIODE

**$V_Z$  : 3.3 - 200 Volts**

**$P_D$  : 5 Watts**

### FEATURES :

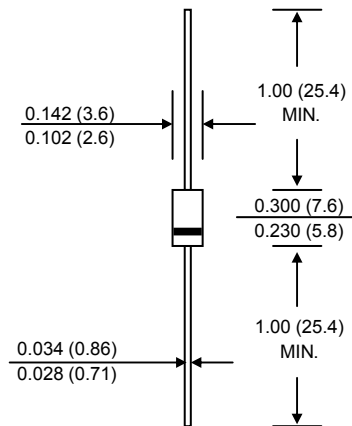
- \* Complete Voltage Range 3.3 to 200 Volts
- \* High peak reverse power dissipation
- \* High reliability
- \* Low leakage current



### MECHANICAL DATA :

- \* Case : DO-15 Molded plastic
- \* Epoxy : UL94V-O 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

### DO-15



Dimensions in inches and ( millimeters )

### MAXIMUM RATINGS

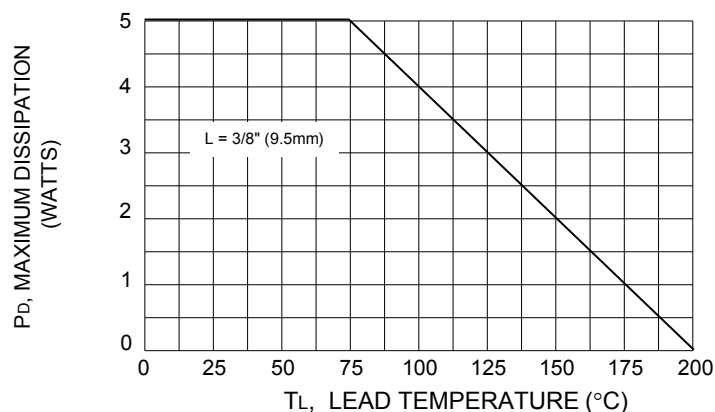
Rating at 25 °C ambient temperature unless otherwise specified

| Rating                                               | Symbol | Value         | Unit |
|------------------------------------------------------|--------|---------------|------|
| DC Power Dissipation at $T_L = 75\text{ °C}$ (Note1) | $P_D$  | 5.0           | W    |
| Maximum Forward Voltage at $I_F = 1\text{ A}$        | $V_F$  | 1.2           | V    |
| 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





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### 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 |
|----------|----------------------------------|-----------------|-----------------------------------|-----------------------------------|-----------------|---------------------------------|------|--------------------------|
|          | V <sub>Z</sub> @ I <sub>ZT</sub> | I <sub>ZT</sub> | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub> @ V <sub>R</sub> |      | I <sub>ZM</sub>          |
|          | (V)                              | (mA)            | (Ω)                               | (Ω)                               | (mA)            | (μA)                            | (V)  | (mA)                     |
| 1N5333B  | 3.3                              | 380             | 3.0                               | 400                               | 1.0             | 300                             | 1.0  | 1440                     |
| 1N5334B  | 3.6                              | 350             | 2.5                               | 500                               | 1.0             | 150                             | 1.0  | 1320                     |
| 1N5335B  | 3.9                              | 320             | 2.0                               | 500                               | 1.0             | 50                              | 1.0  | 1220                     |
| 1N5336B  | 4.3                              | 290             | 2.0                               | 500                               | 1.0             | 10                              | 1.0  | 1100                     |
| 1N5337B  | 4.7                              | 260             | 2.0                               | 450                               | 1.0             | 5.0                             | 1.0  | 1010                     |
| 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 ± 5% tolerance, suffix " A " indicates ± 10% tolerance.



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## RATINGS AND CHARACTERISTIC CURVES

Fig 2. Typical Thermal Response L, Lead Length = 3/8 Inch

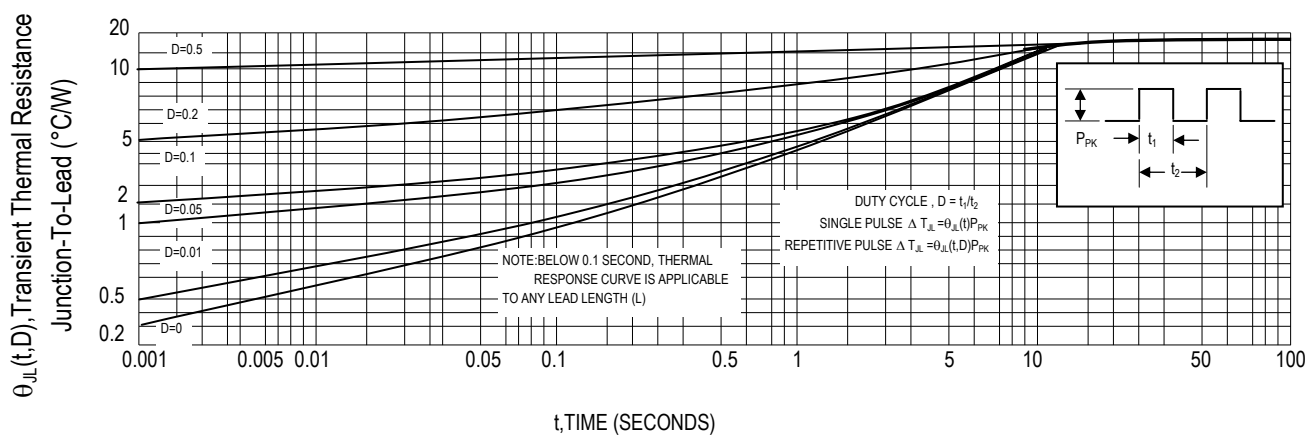


Fig.3 Maximum Non-Repetitive Surg Current versus Nominal Zener Voltage

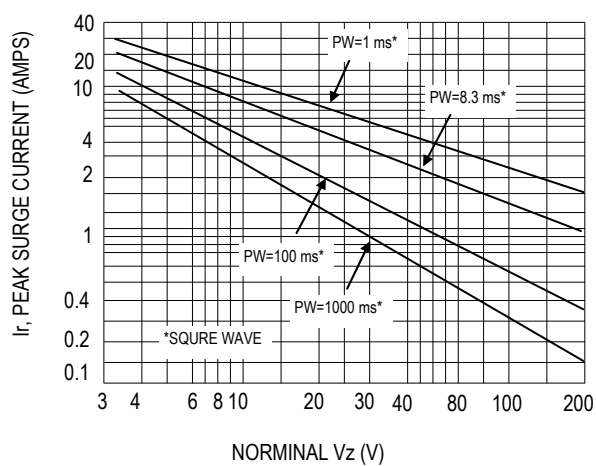


Fig. 4 Peak Surg Current versus Pulse Width

