

# 1N5333B - 1N5388B

## SILICON ZENER DIODES

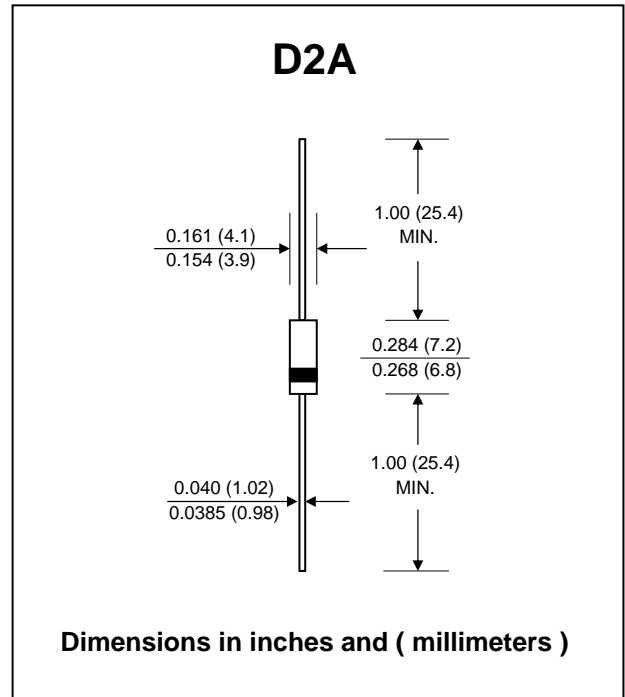
**$V_Z$  : 3.3 - 200 Volts**  
 **$P_D$  : 5 Watts**

### FEATURES :

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

### MECHANICAL DATA

- \* Case : D2A 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 : 0.645 gram



### MAXIMUM RATINGS

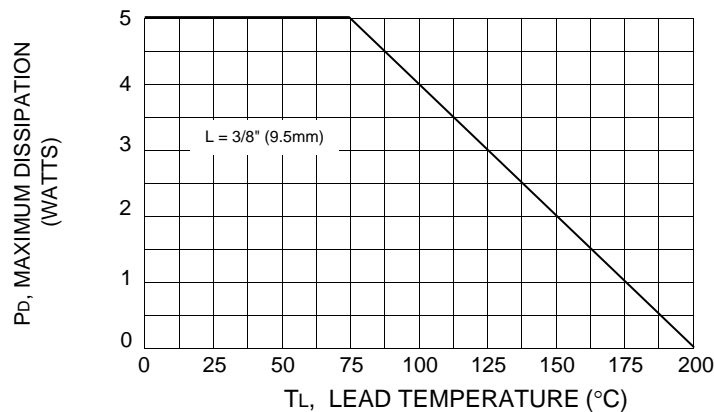
Rating at 25 °C ambient temperature unless otherwise specified

| Rating   | Symbol | Value         | Unit             |
|--|--------|---------------|------------------|
| DC Power Dissipation at $T_L = 75\text{ }^\circ\text{C}$ (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 | $^\circ\text{C}$ |
| Storage Temperature Range  | $T_s$  | - 65 to + 200 | $^\circ\text{C}$ |

#### Note :

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

**Fig. 1 POWER TEMPERATURE DERATING CURVE**



## 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)                     |
| 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  | 150                             | 5.2  | 700                      |
| 1N5343B  | 7.5                   | 175  | 1.5                     | 200       | 1.0  | 150                             | 5.7  | 630                      |
| 1N5344B  | 8.2                   | 150  | 1.5                     | 200       | 1.0  | 150                             | 6.2  | 580                      |
| 1N5345B  | 8.7                   | 150  | 2.0                     | 200       | 1.0  | 150                             | 6.6  | 545                      |
| 1N5346B  | 9.1                   | 150  | 2.0                     | 150       | 1.0  | 150                             | 6.9  | 520                      |
| 1N5347B  | 10                    | 125  | 2.0                     | 125       | 1.0  | 150                             | 7.6  | 475                      |
| 1N5348B  | 11                    | 125  | 2.5                     | 125       | 1.0  | 50                              | 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.

## RATING AND CHARACTERISTIC CURVES ( 1N5333B - 1N5388B )

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

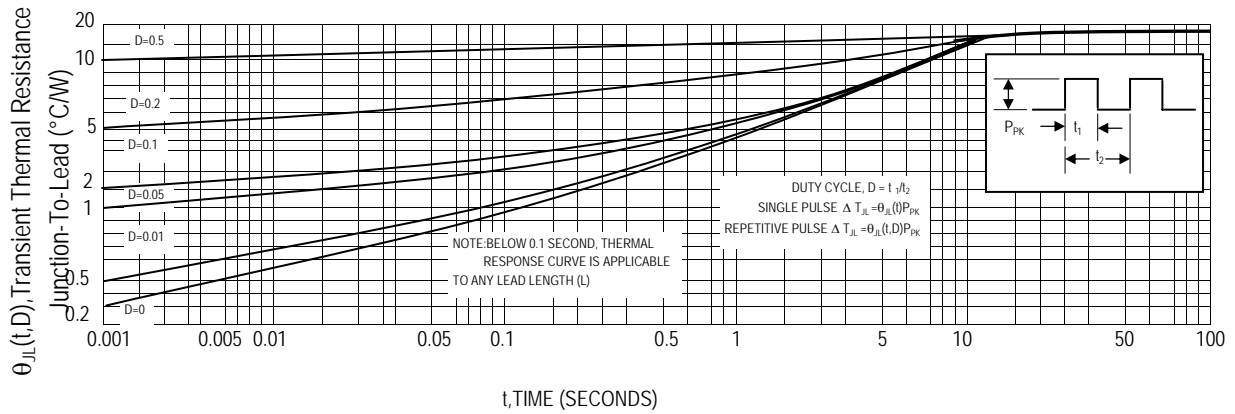


Fig.3 Maximum Non-Repetitive Surg Current versus Nominal Zener Voltage

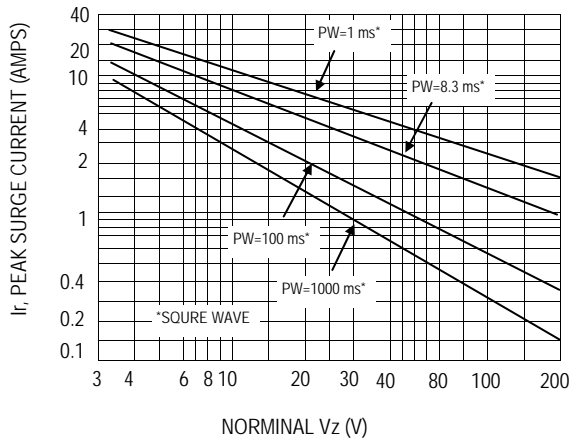


Fig. 4 Peak Surg Current versus Pulse Width

