



# 1N5921B~1N5942B

## SILICON ZENER DIODES

**VOLTAGE** 6.8 to 51 Volt **POWER** 1.5 Watt

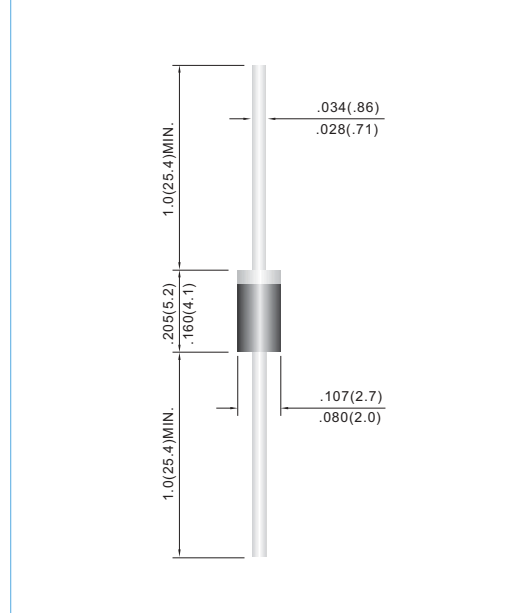
DO-41 Unit: inch(mm)

### FEATURES

- Low profile package
- Built-in strain relief
- Low inductance
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Lead free in compliance with EU RoHS 2011/65/EU directive

### MECHANICAL DATA

- Case: JEDEC DO-41, Molded plastic over passivated junction.
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes positive end (cathode)
- Standard packing: 52mm tape
- Weight: 0.0118 ounce, 0.336 gram



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter   | Symbol                            | Value       | Units |
|---|-----------------------------------|-------------|-------|
| DC Power Dissipation on TA=75 °C ,Measure at Zero Lead Length Derate above 75°C ( NOTE 1) | P <sub>D</sub>                    | 1.5         | Watts |
| Operating Junction and Storage Temperature Range  | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C    |

### NOTES:

1. Mounted on 5.0mm<sup>2</sup> (.013mm thick) land areas.



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| Part Number | Nominal Zener Voltage            |        |        | Maximum Zener Impedance           |      |                                   |      | Maximum Leakage Current |                |
|-------------|----------------------------------|--------|--------|-----------------------------------|------|-----------------------------------|------|-------------------------|----------------|
|             | V <sub>Z</sub> @ I <sub>ZT</sub> |        |        | Z <sub>VT</sub> @ I <sub>ZT</sub> |      | Z <sub>ZK</sub> @ I <sub>ZK</sub> |      | I <sub>R</sub>          | V <sub>R</sub> |
|             | Nom. V                           | Min. V | Max. V | Ω                                 | mA   | Ω                                 | mA   | μA                      | V              |
| 1N5921B     | 6.8                              | 6.46   | 7.14   | 3                                 | 55.1 | 200                               | 1    | 5                       | 5.2            |
| 1N5922B     | 7.5                              | 7.13   | 7.88   | 3                                 | 50   | 400                               | 0.5  | 5                       | 6              |
| 1N5923B     | 8.2                              | 7.79   | 8.61   | 4                                 | 45.7 | 400                               | 0.5  | 5                       | 6.5            |
| 1N5924B     | 9.1                              | 8.65   | 9.56   | 4                                 | 41.2 | 500                               | 0.5  | 5                       | 7              |
| 1N5925B     | 10                               | 9.5    | 10.5   | 5                                 | 37.5 | 500                               | 0.25 | 5                       | 8              |
| 1N5926B     | 11                               | 10.45  | 11.55  | 6                                 | 34.1 | 550                               | 0.25 | 1                       | 8.4            |
| 1N5927B     | 12                               | 11.4   | 12.6   | 7                                 | 31.2 | 550                               | 0.25 | 1                       | 9.1            |
| 1N5928B     | 13                               | 12.35  | 13.65  | 7                                 | 28.8 | 550                               | 0.25 | 1                       | 9.9            |
| 1N5929B     | 15                               | 14.25  | 15.75  | 9                                 | 25   | 600                               | 0.25 | 1                       | 11.4           |
| 1N5930B     | 16                               | 15.2   | 16.8   | 10                                | 23.4 | 600                               | 0.25 | 1                       | 12.2           |
| 1N5931B     | 18                               | 17.1   | 18.9   | 12                                | 20.8 | 650                               | 0.25 | 1                       | 13.7           |
| 1N5932B     | 20                               | 19     | 21     | 14                                | 18.7 | 650                               | 0.25 | 1                       | 15.2           |
| 1N5933B     | 22                               | 20.9   | 23.1   | 18                                | 17   | 650                               | 0.25 | 1                       | 16.7           |
| 1N5934B     | 24                               | 22.8   | 25.2   | 19                                | 15.6 | 700                               | 0.25 | 1                       | 18.2           |
| 1N5935B     | 27                               | 25.65  | 28.35  | 23                                | 13.9 | 700                               | 0.25 | 1                       | 20.6           |
| 1N5936B     | 30                               | 28.5   | 31.5   | 26                                | 12.5 | 750                               | 0.25 | 1                       | 22.8           |
| 1N5937B     | 33                               | 31.35  | 34.65  | 33                                | 11.4 | 800                               | 0.25 | 1                       | 25.1           |
| 1N5938B     | 36                               | 34.2   | 37.8   | 38                                | 10.4 | 850                               | 0.25 | 1                       | 27.4           |
| 1N5939B     | 39                               | 37.05  | 40.95  | 45                                | 9.6  | 900                               | 0.25 | 1                       | 29.7           |
| 1N5940B     | 43                               | 40.85  | 45.15  | 53                                | 8.7  | 950                               | 0.25 | 1                       | 32.7           |
| 1N5941B     | 47                               | 44.65  | 49.35  | 67                                | 8    | 1000                              | 0.25 | 1                       | 35.8           |
| 1N5942B     | 51                               | 48.45  | 53.55  | 70                                | 7.3  | 1100                              | 0.25 | 1                       | 38.8           |



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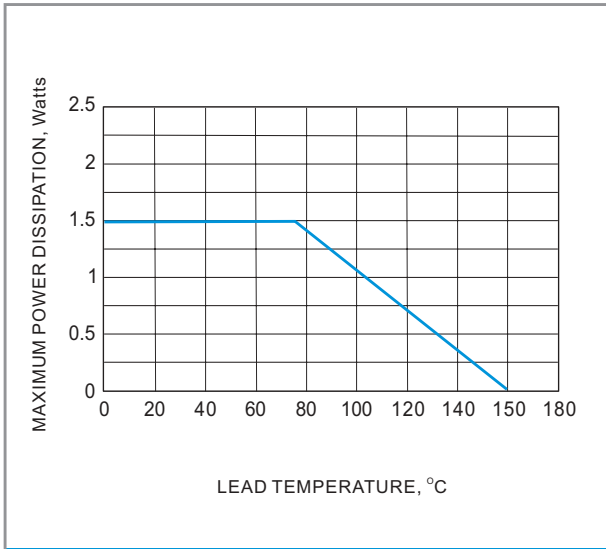


Fig.1 Steady State Power Derating

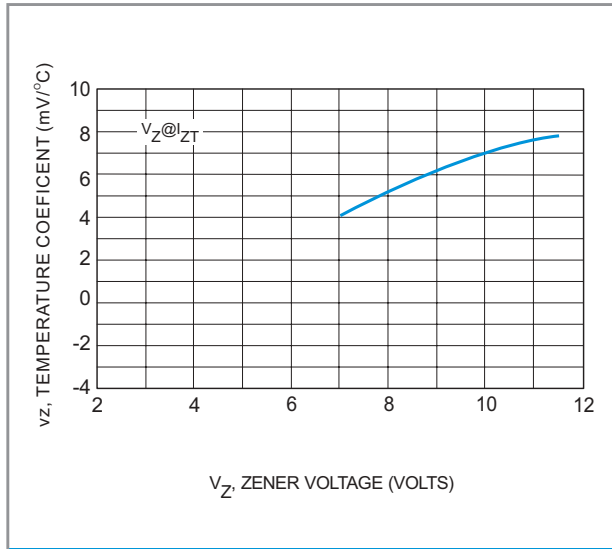


Fig.2 Temperature coefficient v.s. zener voltage, Vz(V)

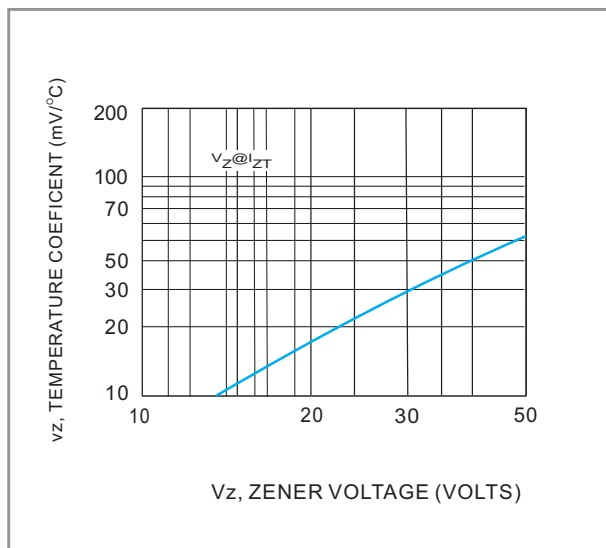


Fig.3 Temperature coefficient v.s. zener voltage, Vz(V)

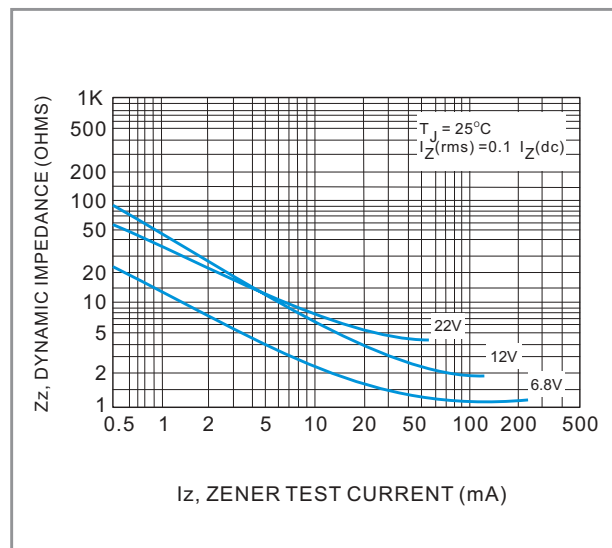


Fig.4 Zener impedance v.s. zener current

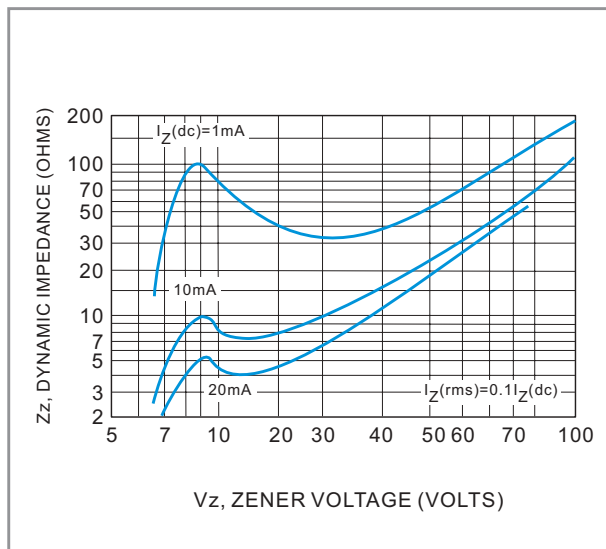


Fig.5 Zener impedance v.s. zener voltage

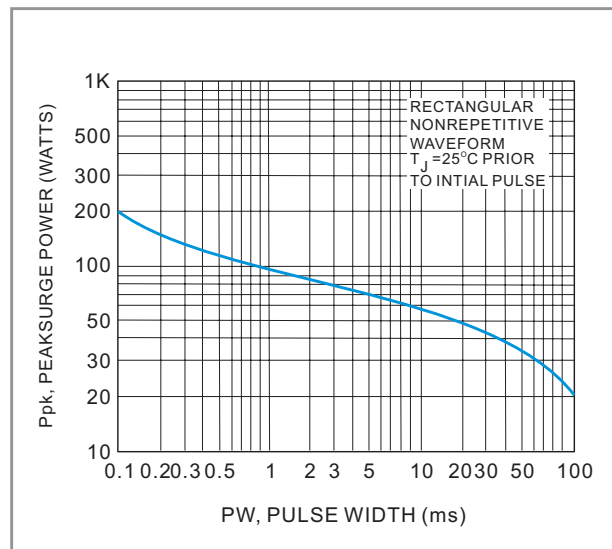
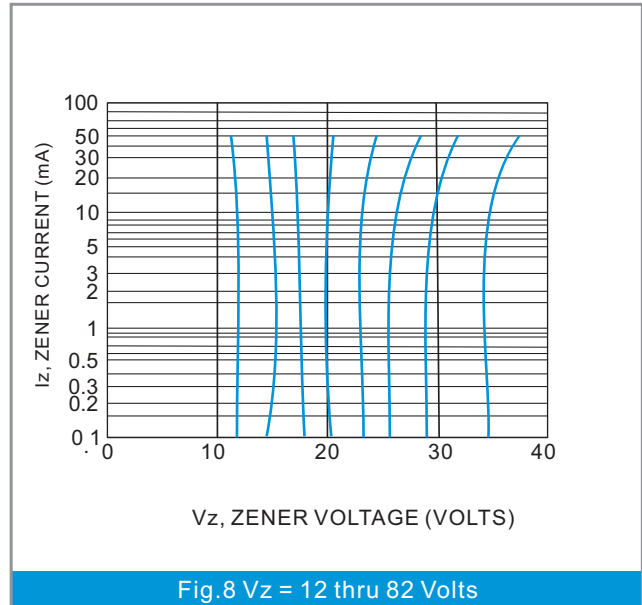
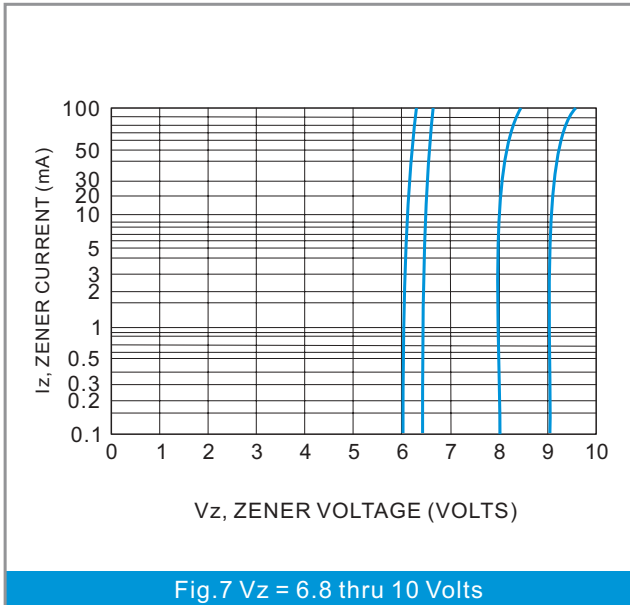


Fig.6 Maximum Surge Power



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### NOTE 3. ZENER VOLTAGE (Vz) MEASUREMENT

Nominal zener voltage is measured with the device function in thermal equilibrium with ambient temperature at 25°C

### NOTE 4. ZENER IMPEDANCE (Zz) DERIVATION

Zzt and Zzk are measured by dividing the ac voltage drop across the device by the accurent applied. The specified limits are for  $I_z(ac) = 0.1 I_z, (dc)$  with the ac frequency = 60Hz



# 1N5921B~1N5942B

## Part No\_packing code\_Version

- 1N5921B\_AY\_00001
- 1N5921B\_AY\_10001
- 1N5921B\_B0\_00001
- 1N5921B\_B0\_10001
- 1N5921B\_R2\_00001
- 1N5921B\_R2\_10001

For example :

**RB500V-40\_R2\_00001**



| Packing Code <b>XX</b>               |                      |                                  |                      | Version Code <b>XXXXX</b> |                      |                                       |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type                         | 1 <sup>st</sup> Code | Packing size code                | 2 <sup>nd</sup> Code | HF or RoHS                | 1 <sup>st</sup> Code | 2 <sup>nd</sup> ~5 <sup>th</sup> Code |
| Tape and Ammunition Box (T/B)        | <b>A</b>             | N/A                              | <b>0</b>             | <b>HF</b>                 | <b>0</b>             | serial number                         |
| Tape and Reel (T/R)                  | <b>R</b>             | 7"                               | <b>1</b>             | <b>RoHS</b>               | <b>1</b>             | serial number                         |
| Bulk Packing (B/P)                   | <b>B</b>             | 13"                              | <b>2</b>             |                           |                      |                                       |
| Tube Packing (T/P)                   | <b>T</b>             | 26mm                             | <b>X</b>             |                           |                      |                                       |
| Tape and Reel (Right Oriented) (TRR) | <b>S</b>             | 52mm                             | <b>Y</b>             |                           |                      |                                       |
| Tape and Reel (Left Oriented) (TRL)  | <b>L</b>             | PANASERT T/B CATHODE UP (PBCU)   | <b>U</b>             |                           |                      |                                       |
| FORMING                              | <b>F</b>             | PANASERT T/B CATHODE DOWN (PBCD) | <b>D</b>             |                           |                      |                                       |



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