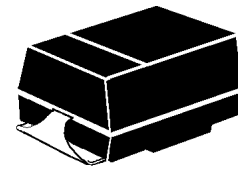




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HSMBJ5913B thru HSMBJ5956B

SILICON 3.0 W ZENER DIODE



FEATURES:

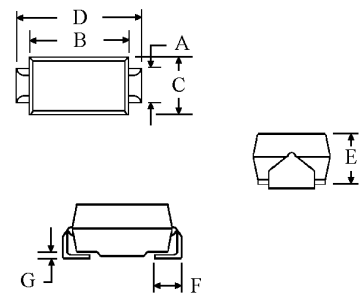
- Surface mount equivalent to 1N5913B thru 1N5956B
- Popular HSMBJ Package outline-Small and Rugged
- Zener voltage 3.3V to 200V
- Constructed with an Oxide Passivated All Diffused Die

MAXIMUM RATINGS:

- Junction and Storage Temperature: -55°C to +150°C
- DC Power Dissipation 3 W at Lead Temp. $T_L \leq 75^\circ\text{C}$
- Derate above +75°C: 40 mW/°C
- Forward voltage @ 200mA: 1.2Volts and $T_L = 30^\circ\text{C}$

Electrical Characteristics @ $T_L = 30^\circ\text{C}$

| PART NUMBER | ZENER VOLTAGE V_Z (NOTE 1) | TEST CURRENT I_{ZT} | DYNAMIC IMPEDANCE Z_{ZT} (NOTE 2) | KNEE CURRENT I_{ZK} | KNEE IMPEDANCE Z_{ZK} (NOTE 2) | REVERSE CURRENT I_R | REVERSE VOLTAGE V_R | MAX DC CURRENT I_{ZM} (NOTE 3) |
|-------------|------------------------------|-----------------------|-------------------------------------|-----------------------|----------------------------------|-----------------------|-----------------------|----------------------------------|
| | Volts | mA | Ohms | mA | OHMS | μA dc | Volts | MA |
| HSMBJ5913B | 3.3 | 113.6 | 10.0 | 1.0 | 500 | 100.0 | 1.0 | 749 |
| HSMBJ5914B | 3.6 | 104.2 | 9.0 | 1.0 | 500 | 75.0 | 1.0 | 686 |
| HSMBJ5915B | 3.9 | 96.1 | 7.5 | 1.0 | 500 | 25.0 | 1.0 | 633 |
| HSMBJ5916B | 4.3 | 87.2 | 6.0 | 1.0 | 500 | 5.0 | 1.0 | 574 |
| HSMBJ5917B | 4.7 | 79.8 | 5.0 | 1.0 | 500 | 5.0 | 1.5 | 526 |
| HSMBJ5918B | 5.1 | 73.5 | 4.0 | 1.0 | 350 | 5.0 | 2.0 | 485 |
| HSMBJ5919B | 5.6 | 66.9 | 2.0 | 1.0 | 250 | 5.0 | 3.0 | 440 |
| HSMBJ5920B | 6.2 | 60.5 | 2.0 | 1.0 | 200 | 5.0 | 4.0 | 397 |
| HSMBJ5921B | 6.8 | 55.1 | 2.5 | 1.0 | 200 | 5.0 | 5.2 | 363 |
| HSMBJ5922B | 7.5 | 50.0 | 3.0 | 0.5 | 400 | 5.0 | 6.0 | 330 |
| HSMBJ5923B | 8.2 | 45.7 | 3.5 | 0.5 | 400 | 5.0 | 6.5 | 300 |
| HSMBJ5924B | 9.1 | 41.2 | 4.0 | 0.5 | 500 | 5.0 | 7.0 | 270 |
| HSMBJ5925B | 10 | 37.5 | 4.5 | 0.25 | 500 | 5.0 | 8.0 | 247 |
| HSMBJ5926B | 11 | 34.1 | 5.5 | 0.25 | 550 | 1.0 | 8.4 | 206 |
| HSMBJ5927B | 12 | 31.2 | 6.5 | 0.25 | 550 | 1.0 | 9.1 | 206 |
| HSMBJ5928B | 13 | 28.9 | 7.0 | 0.25 | 550 | 1.0 | 9.9 | 189 |
| HSMBJ5929B | 15 | 25.0 | 9.0 | 0.25 | 600 | 1.0 | 11.4 | 165 |
| HSMBJ5930B | 16 | 23.4 | 10.0 | 0.25 | 600 | 1.0 | 12.2 | 153 |
| HSMBJ5931B | 18 | 20.8 | 12.0 | 0.25 | 650 | 1.0 | 13.7 | 137 |
| HSMBJ5932B | 20 | 18.7 | 14.0 | 0.25 | 650 | 1.0 | 15.2 | 124 |
| HSMBJ5933B | 22 | 17.0 | 17.5 | 0.25 | 650 | 1.0 | 16.7 | 112 |
| HSMBJ5934B | 24 | 15.6 | 19.0 | 0.25 | 700 | 1.0 | 18.2 | 102 |
| HSMBJ5935B | 27 | 13.9 | 23.0 | 0.25 | 700 | 1.0 | 20.6 | 91 |
| HSMBJ5936B | 30 | 12.5 | 28.0 | 0.25 | 750 | 1.0 | 22.8 | 83 |
| HSMBJ5937B | 33 | 11.4 | 33.0 | 0.25 | 800 | 1.0 | 25.1 | 74 |
| HSMBJ5938B | 36 | 10.4 | 38.0 | 0.25 | 850 | 1.0 | 27.4 | 68 |
| HSMBJ5939B | 39 | 9.6 | 45.0 | 0.25 | 900 | 1.0 | 29.7 | 63 |
| HSMBJ5940B | 43 | 8.7 | 53.0 | 0.25 | 950 | 1.0 | 32.7 | 56 |
| HSMBJ5941B | 47 | 8.0 | 67.0 | 0.25 | 1000 | 1.0 | 35.8 | 51 |
| HSMBJ5942B | 51 | 7.3 | 70.0 | 0.25 | 1100 | 1.0 | 38.8 | 48 |
| HSMBJ5943B | 56 | 6.7 | 86.0 | 0.25 | 1300 | 1.0 | 42.6 | 43 |
| HSMBJ5944B | 62 | 6.0 | 100 | 0.25 | 1500 | 1.0 | 47.1 | 40 |
| HSMBJ5945B | 68 | 5.5 | 120 | 0.25 | 1700 | 1.0 | 51.2 | 36 |
| HSMBJ5946B | 75 | 5.0 | 140 | 0.25 | 2000 | 1.0 | 56.0 | 33 |
| HSMBJ5947B | 82 | 4.6 | 160 | 0.25 | 2500 | 1.0 | 62.2 | 30 |
| HSMBJ5948B | 91 | 4.1 | 200 | 0.25 | 3000 | 1.0 | 69.2 | 26 |
| HSMBJ5949B | 100 | 3.7 | 250 | 0.25 | 3100 | 1.0 | 76.0 | 25 |
| HSMBJ5950B | 110 | 3.4 | 300 | 0.25 | 4000 | 1.0 | 83.6 | 22 |
| HSMBJ5951B | 120 | 3.1 | 280 | 0.25 | 4500 | 1.0 | 91.2 | 20 |
| HSMBJ5952B | 130 | 2.9 | 450 | 0.25 | 5000 | 1.0 | 98.8 | 18 |
| HSMBJ5953B | 150 | 2.5 | 600 | 0.25 | 6000 | 1.0 | 114.0 | 17 |
| HSMBJ5954B | 180 | 2.3 | 700 | 0.25 | 6500 | 1.0 | 121.6 | 15 |
| HSMBJ5955B | 180 | 2.1 | 900 | 0.25 | 7000 | 1.0 | 136.8 | 13 |
| HSMBJ5956B | 200 | 1.9 | 1200 | 0.25 | 8000 | 1.0 | 152.0 | 12 |



| DIM | DIMENSIONS | | | |
|-----|------------|------|-------------|------|
| | INCHES | | MILLIMETERS | |
| | MIN | MAX | MIN | MAX |
| A | .073 | .087 | 1.85 | 2.21 |
| B | .160 | .180 | 4.06 | 4.57 |
| C | .130 | .155 | 3.30 | 3.94 |
| D | .205 | .220 | 5.21 | 5.59 |
| E | .075 | .130 | 1.91 | 3.30 |
| F | .030 | .060 | .76 | 1.52 |
| G | .006 | .016 | .15 | .41 |

Mechanical Characteristics

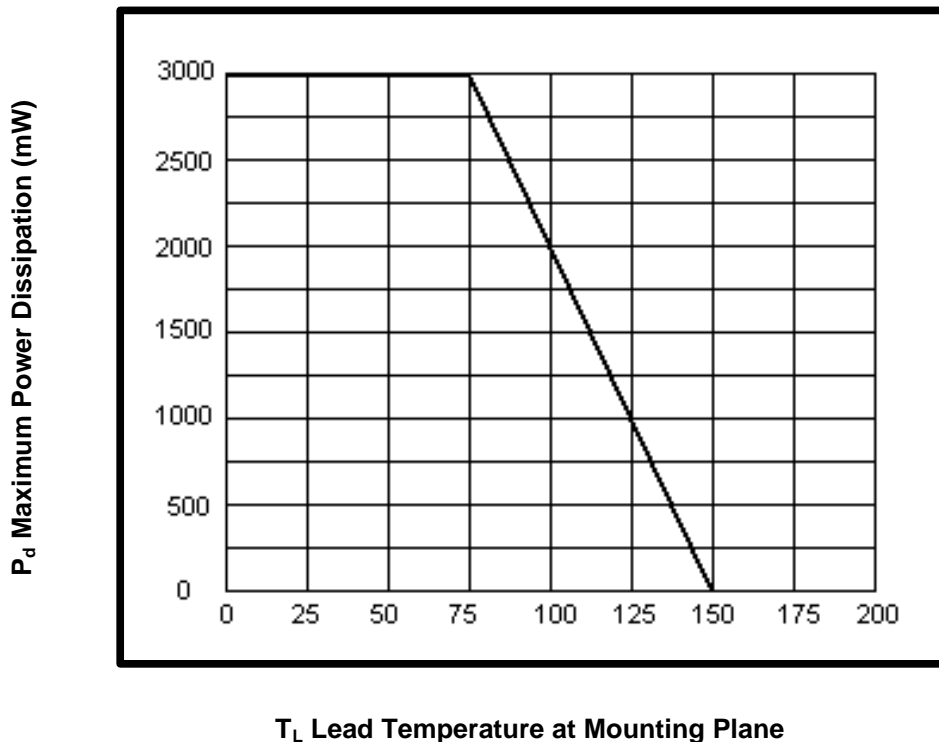
- Case: Similar to DO-214AA
- Terminals: Leads tin plated
- Thermal resistance: 25°C/W (maximum) junction to lead at mounting plane
- Polarity: Cathode indicated by a band
- Packaging: Standard 12 mm tape 2500 per 13 inch reel see (EIA Standard RS-481)

HSMBJ5913B thru HSMBJ5956B

NOTE 1: No suffix indicates a $\pm 20\%$ tolerance on nominal V_Z . Suffix A denotes a $\pm 10\%$ tolerance, B denotes a $\pm 5\%$ tolerance, C denotes $\pm 2\%$ tolerance, and D denotes a $\pm 1\%$ tolerance. V_Z is measured with diode T_L at 30°C and thermal equilibrium.

NOTE 2: Zener impedance is derived from the 1 kHz ac voltage which results when an ac current having an rms value equal to 10% of dc zener current (I_{ZT} or I_{ZK}) superimposed on I_{ZT} or I_{ZK} .

NOTE 3: Based upon 3 W maximum power dissipation. Allowance has been made for the higher voltage associated with higher currents and temperature. For determination of voltage change with current deviations from I_{ZT} see Micro Note 202.



T_L Lead Temperature at Mounting Plane