## Features

- 5.1 Thru 200 Volt Voltage Range
- Glass Passivated Junction
- Surface Mount Application
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix Designates Compliant. See Ordering Information)

# 3.0 Watt Surface Mount Silicon Zener Diodes 5.1V to 200V

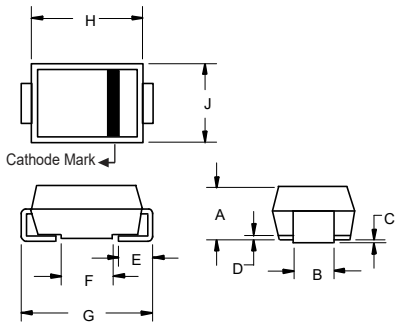
## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance : 25°C/W Junction to Lead
- Thermal Resistance : 135°C/W Junction to Ambient

| Parameter | Symbol | Rating | Conditions |
|---|---|---|---|
| Steady State Power Dissipation | $P_D$ | 3.0W | Note 2 |
| Maximum Forward Voltage | $V_F$ | 1.5V | $I_F$=200mA |

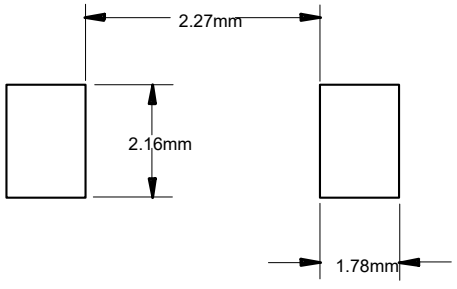
Note: 1.High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
2.Mounted on 5.0mm² (1oz thick) land areas.
Lead temperature at $T_L$=75°C

SMA (DO-214AC)
LEAD FRAME




| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| DIM | INCHES | | MM | | NOTE |
| | MIN | MAX | MIN | MAX | |
| A | 0.079 | 0.096 | 2.00 | 2.44 | |
| B | 0.050 | 0.064 | 1.27 | 1.63 | |
| C | 0.002 | 0.008 | 0.051 | 0.203 | |
| D | --- | 0.020 | --- | 0.51 | |
| E | 0.030 | 0.060 | 0.76 | 1.52 | |
| F | 0.065 | 0.091 | 1.65 | 2.32 | |
| G | 0.189 | 0.220 | 4.80 | 5.59 | |
| H | 0.157 | 0.181 | 4.00 | 4.60 | |
| J | 0.090 | 0.115 | 2.25 | 2.92 | |

**SUGGESTED SOLDER PAD LAYOUT**



## Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC Part Number | Zener Voltage (3) | Test Current | Maximum Dynamic Impedance | Knee Current | Knee Impedance | Maximum Reverse Current | Reverse Voltage | Maximum DC Zener Current | Marking Code |
|---|---|---|---|---|---|---|---|---|---|
| | $V_Z$ | $I_{ZT}$ | $Z_{ZT}$ @ $I_{ZT}$ | $I_{ZK}$ | $Z_{Zk}$ | $I_R$ | $V_R$ | $I_{ZM}$ | |
| | V | mA | Ω | mA | Ω | μA | V | mA | |
| 3SMAJ5918B | 5.1 | 73.5 | 4 | 1 | 350 | 5 | 2 | 588 | H18B |
| 3SMAJ5919B | 5.6 | 66.9 | 2 | 1 | 250 | 5 | 3 | 534 | H19B |
| 3SMAJ5920B | 6.2 | 60.5 | 2 | 1 | 200 | 5 | 4 | 482 | H20B |
| 3SMAJ5921B | 6.8 | 55.1 | 2.5 | 1 | 200 | 5 | 5.2 | 440 | H21B |
| 3SMAJ5922B | 7.5 | 50 | 3 | 0.5 | 400 | 5 | 6 | 400 | H22B |
| 3SMAJ5923B | 8.2 | 45.7 | 3.5 | 0.5 | 400 | 5 | 6.5 | 364 | H23B |
| 3SMAJ5924B | 9.1 | 41.2 | 4 | 0.5 | 500 | 5 | 7 | 328 | H24B |
| 3SMAJ5925B | 10 | 37.5 | 4.5 | 0.25 | 500 | 5 | 8 | 300 | H25B |
| 3SMAJ5926B | 11 | 34.1 | 5.5 | 0.25 | 550 | 1 | 8.4 | 272 | H26B |
| 3SMAJ5927B | 12 | 31.2 | 6.5 | 0.25 | 550 | 1 | 9.1 | 250 | H27B |
| 3SMAJ5928B | 13 | 28.8 | 7 | 0.25 | 550 | 1 | 9.9 | 230 | H28B |
| 3SMAJ5929B | 15 | 25 | 9 | 0.25 | 600 | 1 | 11.4 | 200 | H29B |
| 3SMAJ5930B | 16 | 23.4 | 10 | 0.25 | 600 | 1 | 12.2 | 186 | H30B |
| 3SMAJ5931B | 18 | 20.8 | 12 | 0.25 | 650 | 1 | 13.7 | 166 | H31B |
| 3SMAJ5932B | 20 | 18.7 | 14 | 0.25 | 650 | 1 | 15.2 | 150 | H32B |
| 3SMAJ5933B | 22 | 17 | 17.5 | 0.25 | 650 | 1 | 16.7 | 136 | H33B |
| 3SMAJ5934B | 24 | 15.6 | 19 | 0.25 | 700 | 1 | 18.2 | 124 | H34B |
| 3SMAJ5935B | 27 | 13.9 | 23 | 0.25 | 700 | 1 | 20.6 | 110 | H35B |
| 3SMAJ5936B | 30 | 12.5 | 28 | 0.25 | 750 | 1 | 22.8 | 100 | H36B |
| 3SMAJ5937B | 33 | 11.4 | 33 | 0.25 | 800 | 1 | 25.1 | 90 | H37B |
| 3SMAJ5938B | 36 | 10.4 | 38 | 0.25 | 850 | 1 | 27.4 | 82 | H38B |
| 3SMAJ5939B | 39 | 9.6 | 45 | 0.25 | 900 | 1 | 29.7 | 76 | H39B |
| 3SMAJ5940B | 43 | 8.7 | 53 | 0.25 | 950 | 1 | 32.7 | 68 | H40B |
| 3SMAJ5941B | 47 | 8 | 67 | 0.25 | 1000 | 1 | 35.8 | 62 | H41B |
| 3SMAJ5942B | 51 | 7.3 | 70 | 0.25 | 1100 | 1 | 38.8 | 58 | H42B |
| 3SMAJ5943B | 56 | 6.7 | 86 | 0.25 | 1300 | 1 | 42.6 | 52 | H43B |
| 3SMAJ5944B | 62 | 6 | 100 | 0.25 | 1500 | 1 | 47.1 | 48 | H44B |
| 3SMAJ5945B | 68 | 5.5 | 120 | 0.25 | 1700 | 1 | 51.7 | 44 | H45B |
| 3SMAJ5946B | 75 | 5 | 140 | 0.25 | 2000 | 1 | 56 | 40 | H46B |
| 3SMAJ5947B | 82 | 4.6 | 160 | 0.25 | 2500 | 1 | 62.2 | 36 | H47B |
| 3SMAJ5948B | 91 | 4.1 | 200 | 0.25 | 3000 | 1 | 69.2 | 32 | H48B |
| 3SMAJ5949B | 100 | 3.7 | 250 | 0.25 | 3100 | 1 | 76 | 30 | H49B |
| 3SMAJ5950B | 110 | 3.4 | 300 | 0.25 | 4000 | 1 | 83.6 | 26 | H50B |
| 3SMAJ5951B | 120 | 3.1 | 380 | 0.25 | 4500 | 1 | 91.2 | 24 | H51B |
| 3SMAJ5952B | 130 | 2.9 | 450 | 0.25 | 5000 | 1 | 98.8 | 22 | H52B |
| 3SMAJ5953B | 150 | 2.5 | 600 | 0.25 | 6000 | 1 | 114 | 20 | H53B |
| 3SMAJ5954B | 160 | 2.3 | 700<br>350(@5mA) | 0.25 | 6500 | 1 | 121.6 | 18 | H54B |
| 3SMAJ5955B | 180 | 2.1 | 900 | 0.25 | 7000 | 1 | 136.8 | 16 | H55B |
| 3SMAJ5956B | 200 | 1.9 | 1200 | 0.25 | 8000 | 1 | 152 | 14 | H56B |

Note : 3.TOLERANCE AND VOLTAGE DESIGNATION - The type numbers listed indicate a tolerance of +/-5%

## Curve Characteristics

Fig. 1 - Power Derating Curve

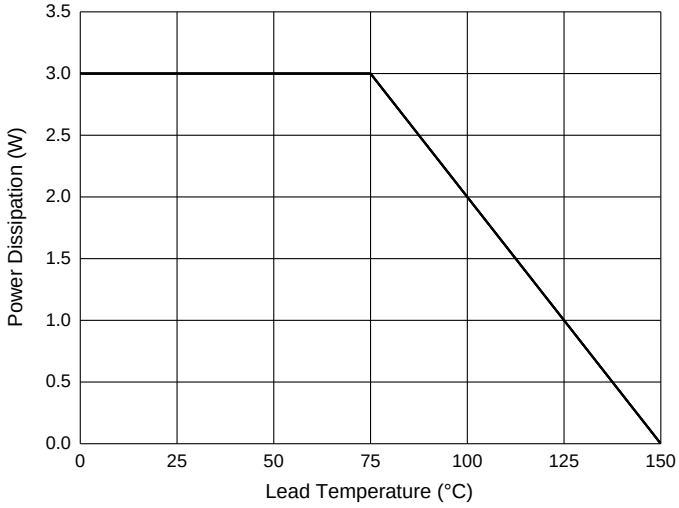



Fig. 2 - Typical Zener Breakdown Characteristics

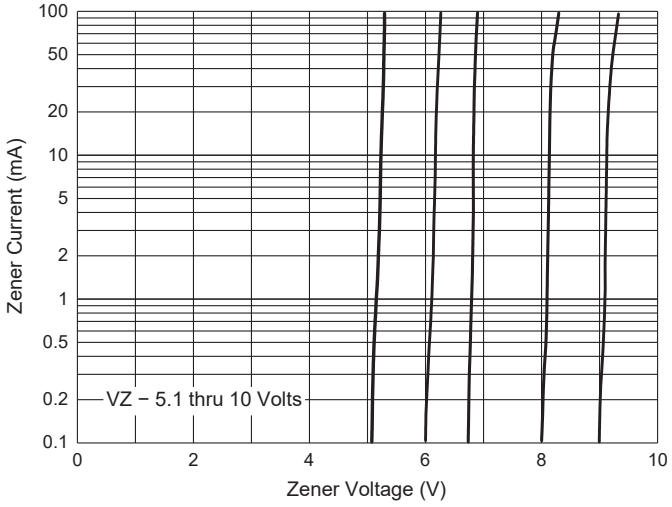
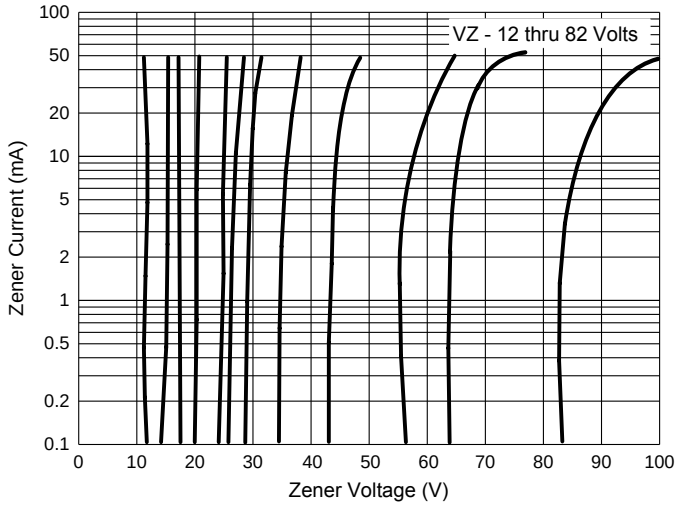



Fig. 3 - Typical Zener Breakdown Characteristics



## Ordering Information

| Device | Packing |
|---|---|
| Part Number-TP | Tape&Reel:7.5Kpcs/Reel |

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF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