

## Features

- 5.1 Thru 200 Volt Voltage Range
- Glass Passivated Junction
- Surface Mount Application
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note2) ("P" Suffix Designates Compliant. See Ordering Information)

## 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 3      |
| Maximum Forward Voltage        | $V_F$  | 1.5V   | $I_F=200mA$ |

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

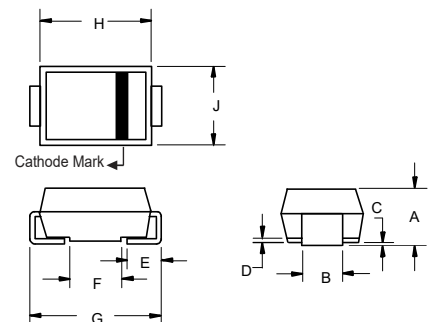
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

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

Lead temperature at  $T_L=75^\circ C$

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

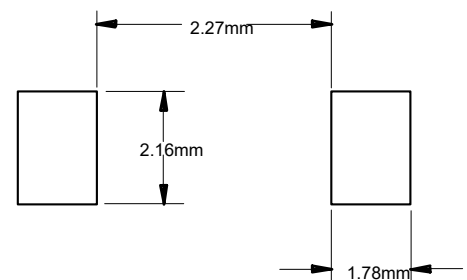
### SMA (DO-214AC) LEAD FRAME



#### DIMENSIONS

| DIM | INCHES |       | MM    |       | NOTE |
|-----|--------|-------|-------|-------|------|
|     | MIN    | MAX   | MIN   | MAX   |      |
| A   | 0.075  | 0.096 | 1.90  | 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  | 0.187 | 4.00  | 4.75  |      |
| 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 <sup>(4)</sup> | Test Current    | Maximum Dynamic Impedance         | Knee Current    | Knee Impedance  | Maximum Reverse Current | Reverse Voltage | Maximum DC Zener Current | Marking Code |
|-----------------|------------------------------|-----------------|-----------------------------------|-----------------|-----------------|-------------------------|-----------------|--------------------------|--------------|
|                 | V <sub>Z</sub>               | I <sub>ZT</sub> | Z <sub>ZT</sub> @ I <sub>ZT</sub> | I <sub>ZK</sub> | Z <sub>ZK</sub> | I <sub>R</sub>          | V <sub>R</sub>  | I <sub>ZM</sub>          |              |
|                 | 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 : 4.TOLERANCE AND VOLTAGE DESIGNATION - The type numbers listed indicate a tolerance of +/-5%

## Curve Characteristics

Fig. 1 - Power Derating Curve

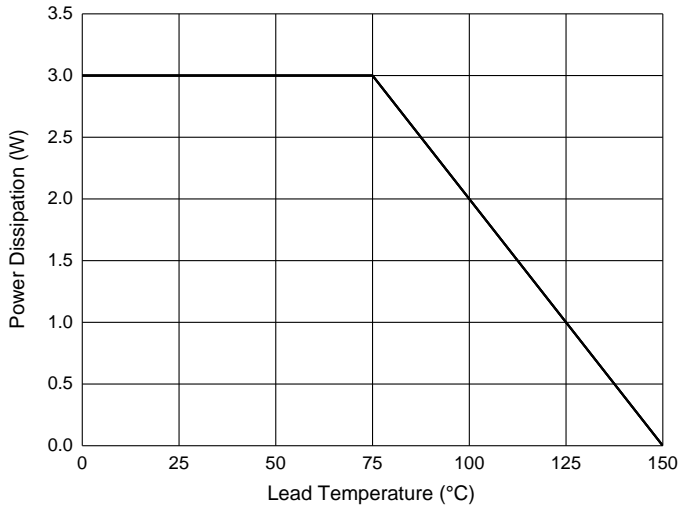


Fig. 2 - Typical Zener Breakdown Characteristics

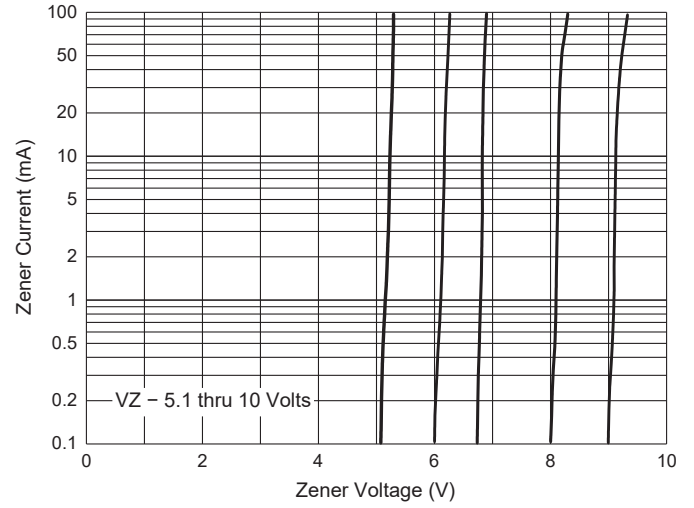
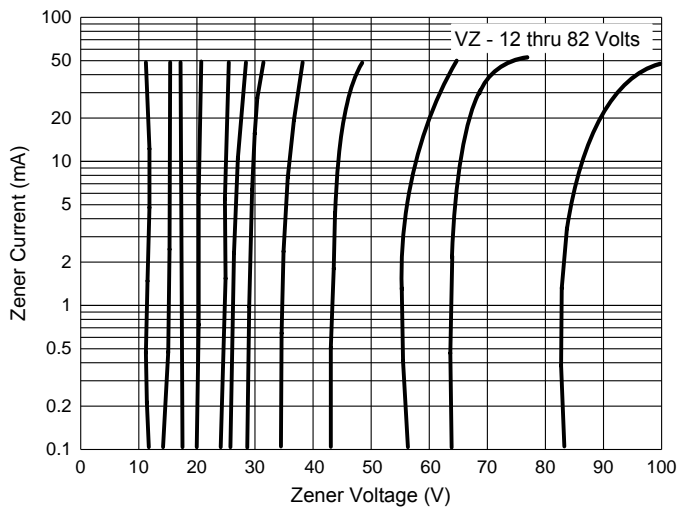


Fig. 3 - Typical Zener Breakdown Characteristics



## Ordering Information

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

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