

## 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)

## 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   | $I_F=200mA$ |

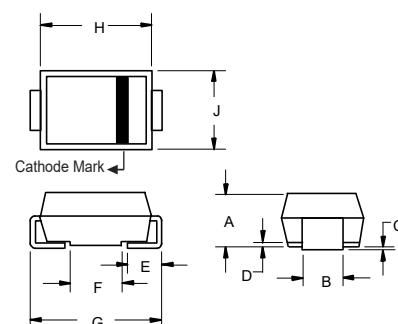
Note: 1.High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

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

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

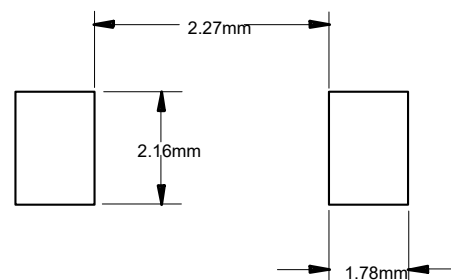
## 3.0 Watt Surface Mount Silicon Zener Diodes 5.1V to 200V

## SMA (DO-214AC) LEAD FRAME



| DIMENSIONS |        |       |       |       |      |
|------------|--------|-------|-------|-------|------|
| DIM        | INCHES |       | MM    |       | NOTE |
|            | MIN    | MAX   | MIN   | MAX   |      |
| A          | 0.079  | 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<br>Part Number | Zener<br>Voltage <sup>(3)</sup> | Test Current    | Maximum<br>Dynamic<br>Impedance   | Knee Current    | Knee<br>Impedance | Maximum<br>Reverse<br>Current | Reverse<br>Voltage | Maximum<br>DC Zener<br>Current | Marking<br>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                               | 0.25            | 6500              | 1                             | 121.6              | 18                             | H54B            |
|                    |                                 |                 | 350(@5mA)                         |                 |                   |                               |                    |                                |                 |
| 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

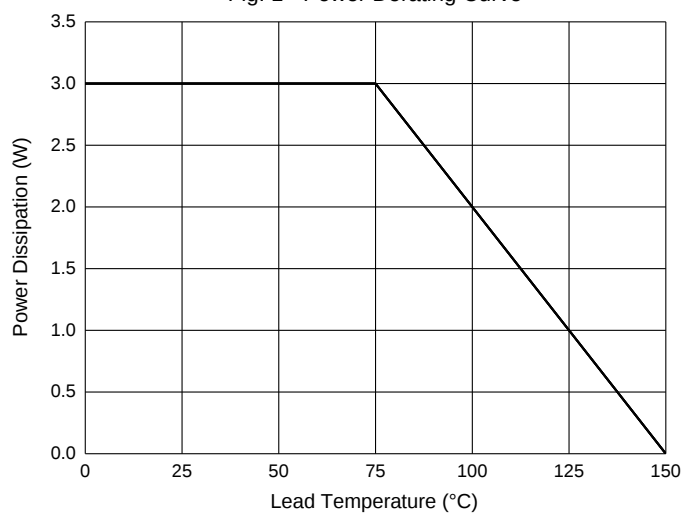


Fig. 2 - Typical Zener Breakdown Characteristics

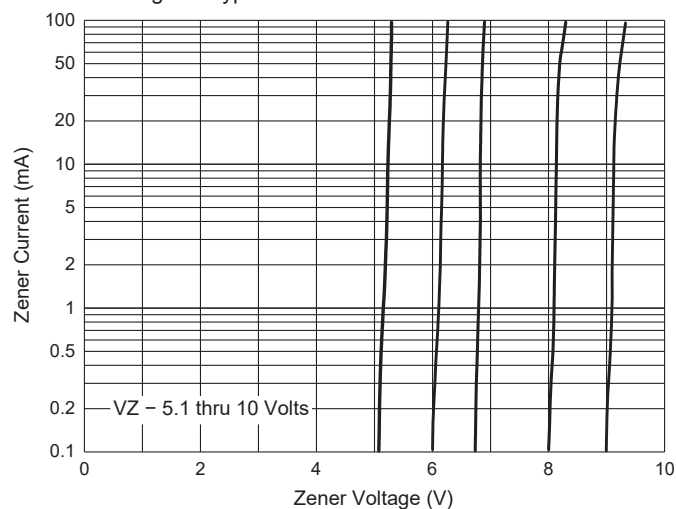
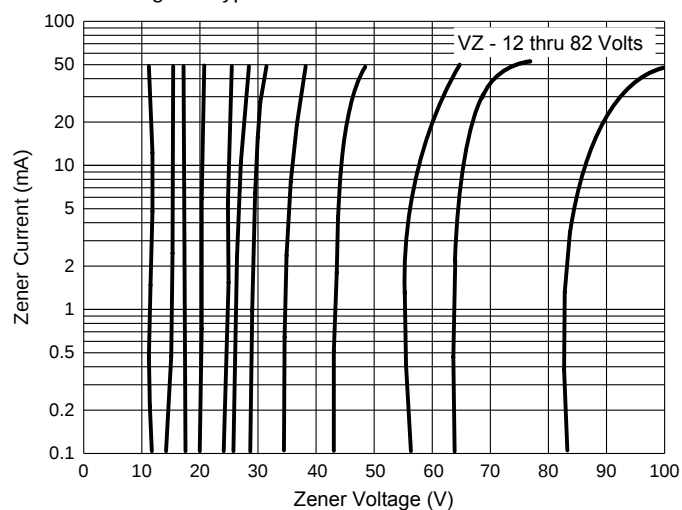


Fig. 3 - Typical Zener Breakdown Characteristics



## 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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