

# 3SMAJ5913B THRU 3SMAJ5943B

## Features

- Surface Mount Application
- 3.3 thru 56 Volt Voltage Range
- Low Inductance, Low Profile Mounting
- Glass Passivated Junction
- High specified maximum current (IZM) when adequately heat sinking

## Mechanical Data

- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Terminals solderable per MIL-STD-750, Method 2026
- Polarity is indicated by cathode band.
- Packaging: Standard 12mm Tape (see EIA 481)
- Maximum temperature for soldering: 260°C for 10 seconds.

## Maximum Ratings @ 25°C Unless Otherwise Specified

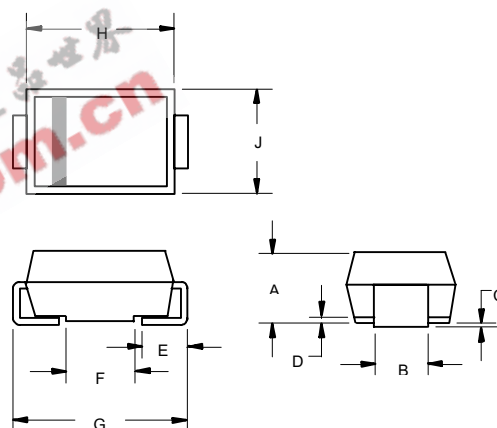
|                                     |                                   |                 |           |
|-------------------------------------|-----------------------------------|-----------------|-----------|
| Maximum Forward Voltage             | V <sub>F</sub>                    | 1.5V            | (Note: 1) |
| Steady State Power Dissipation      | P <sub>d</sub>                    | 3.0W            | (Note: 2) |
| Operation and Storage Temperature   | T <sub>J</sub> , T <sub>STG</sub> | -55°C to +150°C |           |
| Thermal Resistance Junction to Lead | R <sub>thJL</sub>                 | 25°C/W          |           |

### NOTES:

1. Forward Current @ 200mA.
2. Mounted on 5.0mm<sup>2</sup> (.013mm thick) land areas.  
Lead temperature at T<sub>L</sub>=75°C

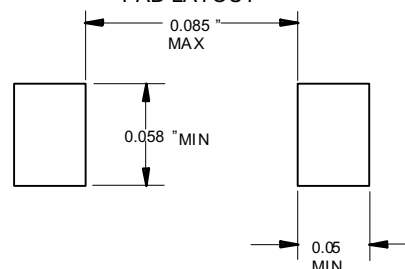
## 3.0 Watt Surface Mount Silicon Zener Diodes

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



| DIM | INCHES |      | MM   |      | NOTE |
|-----|--------|------|------|------|------|
|     | MIN    | MAX  | MIN  | MAX  |      |
| A   | .079   | .096 | 2.00 | 2.44 |      |
| B   | .050   | .064 | 1.27 | 1.63 |      |
| C   | .002   | .008 | .05  | .20  |      |
| D   | ---    | .02  | ---  | .51  |      |
| E   | .030   | .060 | .76  | 1.52 |      |
| F   | .065   | .091 | 1.65 | 2.32 |      |
| G   | .189   | .220 | 4.80 | 5.59 |      |
| H   | .157   | .181 | 4.00 | 4.60 |      |
| J   | .090   | .115 | 2.25 | 2.92 |      |

### SUGGESTED SOLDER PAD LAYOUT



**3SMAJ5913B thru 3SMAJ5943B**

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ELECTRICAL CHARACTERISTICS ( $T_L=30^\circ\text{C}$  unless otherwise noted) ( $V_F=1.5\text{Volts Max @ } I_F=200\text{mA}$  for all types.)

| MCC<br>PART<br>NUMBER | ZENER<br>VOLTAGE<br>$V_Z (1)$ | TEST<br>CURRENT<br>$I_{ZT}$ | MAXIMUM<br>DYNAMIC<br>IMPEDANCE<br>$Z_{ZT} @$<br>$I_{ZT}$ | KNEE<br>CURRENT<br>$I_{ZK}$ | KNEE<br>IMPEDANCE<br>$Z_{ZK}$ | MAXIMUM<br>REVERSE<br>CURRENT<br>$I_R$ | REVERSE<br>VOLTAGE<br>$V_R$ | Maximum<br>DC Zener<br>Current<br>$I_{ZM}$ mA | DEVICE MARKING |
|-----------------------|-------------------------------|-----------------------------|-----------------------------------------------------------|-----------------------------|-------------------------------|----------------------------------------|-----------------------------|-----------------------------------------------|----------------|
|                       | VOLTS                         | mA                          | OHMS                                                      | mA                          | OHMS                          | $\mu\text{A}$                          | VOLTS                       | mA                                            |                |
| 3SMAJ5913B            | 3.3                           | 113.6                       | 10.0                                                      | 1.0                         | 500                           | 100                                    | 1.0                         | 908                                           | H 13B          |
| 3SMAJ5914B            | 3.6                           | 104.2                       | 9.0                                                       | 1.0                         | 500                           | 75                                     | 1.0                         | 832                                           | H 14B          |
| 3SMAJ5915B            | 3.9                           | 96.1                        | 7.5                                                       | 1.0                         | 500                           | 25                                     | 1.0                         | 768                                           | H 15B          |
| 3SMAJ5916B            | 4.3                           | 87.2                        | 6.0                                                       | 1.0                         | 500                           | 5.0                                    | 1.0                         | 696                                           | H 16B          |
| 3SMAJ5917B            | 4.7                           | 79.8                        | 5.0                                                       | 1.0                         | 500                           | 5.0                                    | 1.5                         | 638                                           | H 17B          |
| 3SMAJ5918B            | 5.1                           | 73.5                        | 4.0                                                       | 1.0                         | 350                           | 5.0                                    | 2.0                         | 588                                           | H 18B          |
| 3SMAJ5919B            | 5.6                           | 66.9                        | 2.0                                                       | 1.0                         | 250                           | 5.0                                    | 3.0                         | 534                                           | H 19B          |
| 3SMAJ5920B            | 6.2                           | 60.5                        | 2.0                                                       | 1.0                         | 200                           | 5.0                                    | 4.0                         | 482                                           | H 20B          |
| 3SMAJ5921B            | 6.8                           | 55.1                        | 2.5                                                       | 1.0                         | 200                           | 5.0                                    | 5.2                         | 440                                           | H 21B          |
| 3SMAJ5922B            | 7.5                           | 50.0                        | 3.0                                                       | 0.5                         | 400                           | 5.0                                    | 6.0                         | 400                                           | H 22B          |
| 3SMAJ5923B            | 8.2                           | 45.7                        | 3.5                                                       | 0.5                         | 400                           | 5.0                                    | 6.5                         | 364                                           | H 23B          |
| 3SMAJ5924B            | 9.1                           | 41.2                        | 4.0                                                       | 0.5                         | 500                           | 5.0                                    | 7.0                         | 328                                           | H 24B          |
| 3SMAJ5925B            | 10                            | 37.5                        | 4.5                                                       | 0.25                        | 500                           | 5.0                                    | 8.0                         | 300                                           | H 25B          |
| 3SMAJ5926B            | 11                            | 34.1                        | 5.5                                                       | 0.25                        | 550                           | 1.0                                    | 8.4                         | 272                                           | H 26B          |
| 3SMAJ5927B            | 12                            | 31.2                        | 6.5                                                       | 0.25                        | 550                           | 1.0                                    | 9.1                         | 250                                           | H 27B          |
| 3SMAJ5928B            | 13                            | 28.8                        | 7.0                                                       | 0.25                        | 550                           | 1.0                                    | 9.9                         | 230                                           | H 28B          |
| 3SMAJ5929B            | 15                            | 25.0                        | 9.0                                                       | 0.25                        | 600                           | 1.0                                    | 11.4                        | 200                                           | H 29B          |
| 3SMAJ5930B            | 16                            | 23.4                        | 10.0                                                      | 0.25                        | 600                           | 1.0                                    | 12.2                        | 186                                           | H 30B          |
| 3SMAJ5931B            | 18                            | 20.8                        | 12.0                                                      | 0.25                        | 650                           | 1.0                                    | 13.7                        | 166                                           | H 31B          |
| 3SMAJ5932B            | 20                            | 18.7                        | 14.0                                                      | 0.25                        | 650                           | 1.0                                    | 15.2                        | 150                                           | H 31B          |
| 3SMAJ5933B            | 22                            | 17.0                        | 17.5                                                      | 0.25                        | 650                           | 1.0                                    | 16.7                        | 136                                           | H 33B          |
| 3SMAJ5934B            | 24                            | 15.6                        | 19.0                                                      | 0.25                        | 700                           | 1.0                                    | 18.2                        | 124                                           | H 34B          |
| 3SMAJ5935B            | 27                            | 13.9                        | 23.0                                                      | 0.25                        | 700                           | 1.0                                    | 20.6                        | 110                                           | H 35B          |
| 3SMAJ5936B            | 30                            | 12.5                        | 28.0                                                      | 0.25                        | 750                           | 1.0                                    | 22.8                        | 100                                           | H 36B          |
| 3SMAJ5937B            | 33                            | 11.4                        | 33.0                                                      | 0.25                        | 800                           | 1.0                                    | 25.1                        | 90                                            | H 37B          |
| 3SMAJ5938B            | 36                            | 10.4                        | 38.0                                                      | 0.25                        | 850                           | 1.0                                    | 27.4                        | 82                                            | H 38B          |
| 3SMAJ5939B            | 39                            | 9.6                         | 45.0                                                      | 0.25                        | 900                           | 1.0                                    | 29.7                        | 76                                            | H 39B          |
| 3SMAJ5940B            | 43                            | 8.7                         | 53.0                                                      | 0.25                        | 950                           | 1.0                                    | 32.7                        | 68                                            | H 40B          |
| 3SMAJ5941B            | 47                            | 8.0                         | 67.0                                                      | 0.25                        | 1000                          | 1.0                                    | 35.8                        | 62                                            | H 41B          |
| 3SMAJ5942B            | 51                            | 7.3                         | 70.0                                                      | 0.25                        | 1100                          | 1.0                                    | 38.8                        | 58                                            | H 42B          |
| 3SMAJ5943B            | 56                            | 6.7                         | 86.0                                                      | 0.25                        | 1300                          | 1.0                                    | 42.6                        | 52                                            | H 43B          |

Note 1: TOLERANCE AND VOLTAGE DESIGNATION - The type numbers listed indicate a tolerance of +/- 5%.

**RATING AND CHARACTERISTICS CURVES**

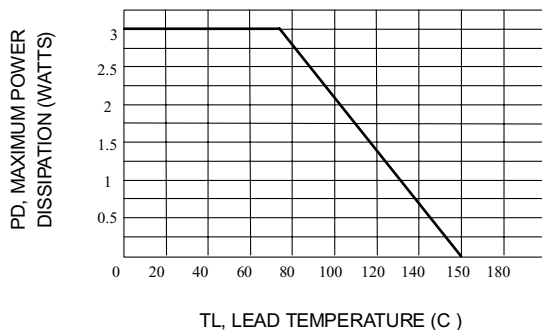


Fig. 1-STEADY STATE POWER DERATING

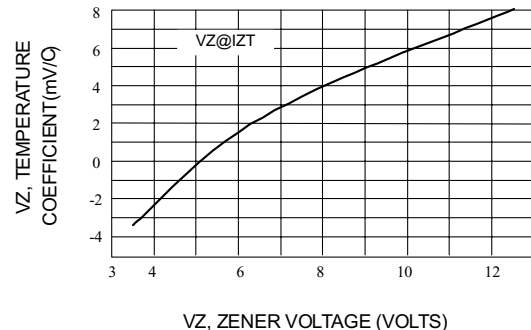


Fig. 2-ZENER VOLTAGE- 3 TO 12 VOLTS

RATING AND CHARACTERISTICS CURVES  
3SMAJ5913B thru 3SMAJ5943B

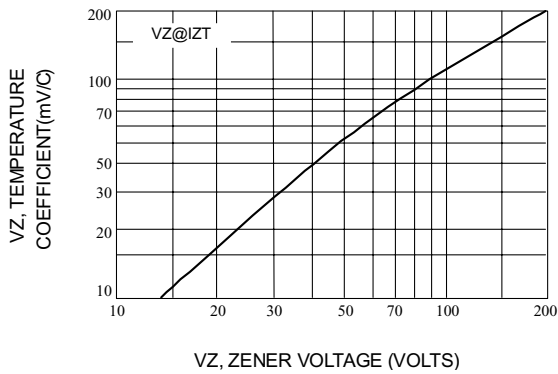


Fig. 3-ZENER VOLTAGE-10 TO 200 VOLTS

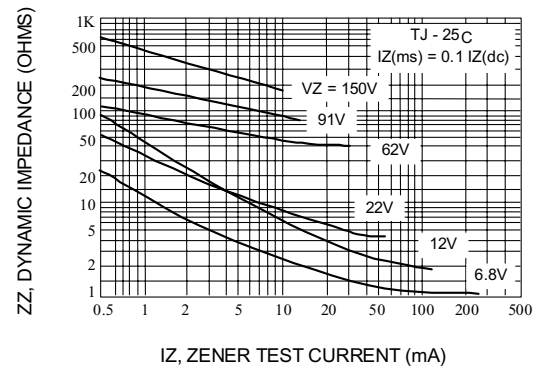


Fig. 4-EFFECT OF ZENER CURRENT

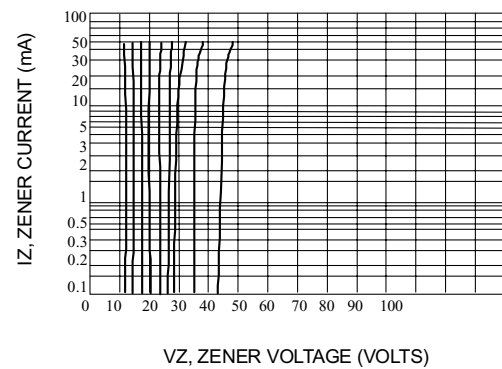
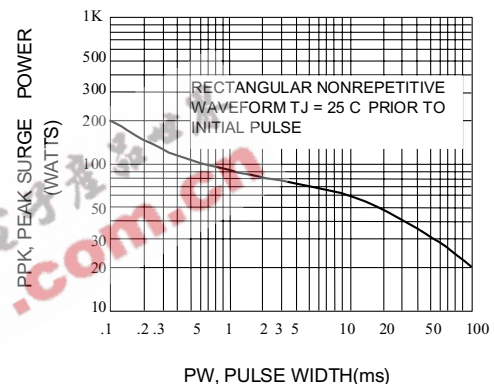
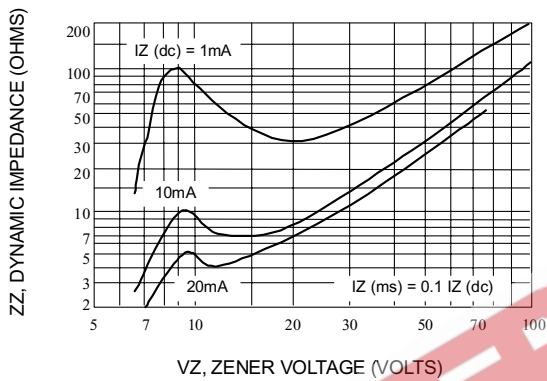


Fig. 7-VZ = 12 THRU 40 VOLTS



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