

# 3SMAJ5913B THRU 3SMAJ5943B

## 3.0 Watt Surface Mount Silicon Zener Diodes

### Features

- Surface Mount Application
- 3.3V thru 56 Volt Voltage Range
- Low Inductance , Low Profile Mounting
- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Glass Passivated Junction
- High specified maximum current (IZM) when adequately heat sinking

### Mechanical Data

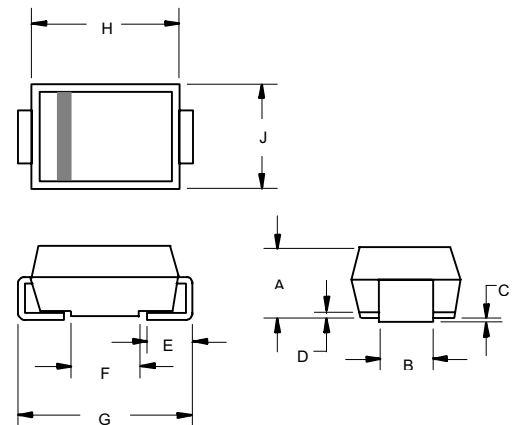
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Terminals solderable per MIL-STD-750, Method 2026
- Polarity is indicated by cathode band.
- Packaging: Standard 12mm Tape (see EIA 481)
- Maximum temperature for soldering: 260 °C for 10 seconds.

### Maximum Ratings @ 25°C Unless Otherwise Specified

|                                     |                |                 |           |
|-------------------------------------|----------------|-----------------|-----------|
| Maximum Forward Voltage             | $V_F$          | 1.5V            | (Note: 2) |
| Steady State Power Dissipation      | $P_d$          | 3.0W            | (Note: 3) |
| Operation and Storage Temperature   | $T_J, T_{STG}$ | -55°C to +150°C |           |
| Thermal Resistance Junction to Lead | $R_{thJL}$     | 25°C/W          |           |

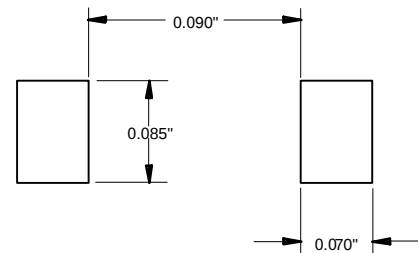
- Note: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.  
2. Forward Current @ 200mA.  
3. Mounted on 5.0mm<sup>2</sup> (1oz thick) land areas.  
Lead temperature at  $T_L=75^\circ\text{C}$

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



| DIMENSIONS |        |      |      |      |      |
|------------|--------|------|------|------|------|
| 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

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>$I_{ZM} \text{ mA}$ | 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 32B          |
| 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

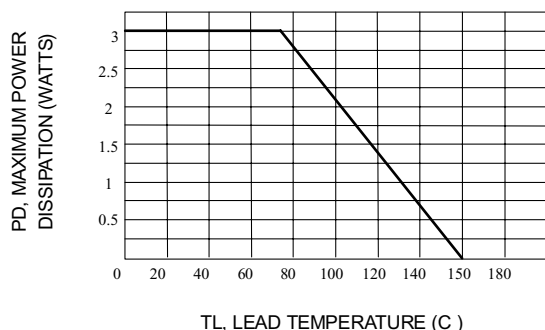


Fig. 1-STEADY STATE POWER DERATING

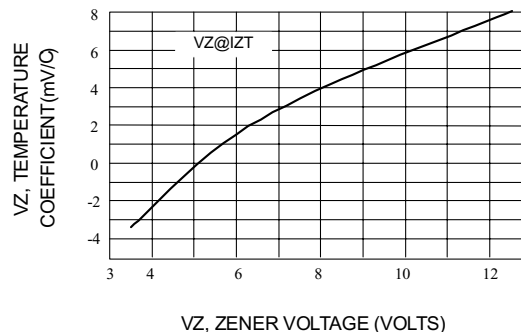


Fig. 2-ZENER VOLTAGE- 3 TO 12 VOLTS

# RATING AND CHARACTERISTICS CURVES 3SMAJ5913B thru 3SMAJ5943B

**M.C.C.**

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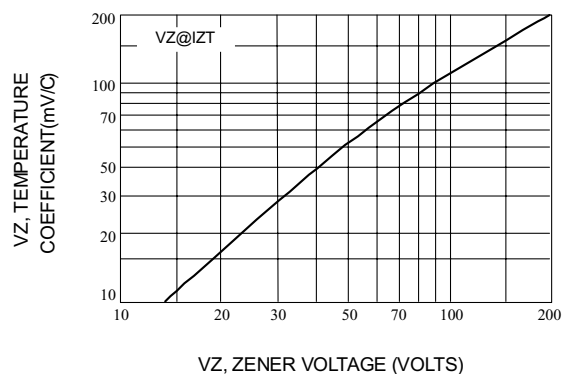


Fig. 3-ZENER VOLTAGE-10 TO 200 VOLTS

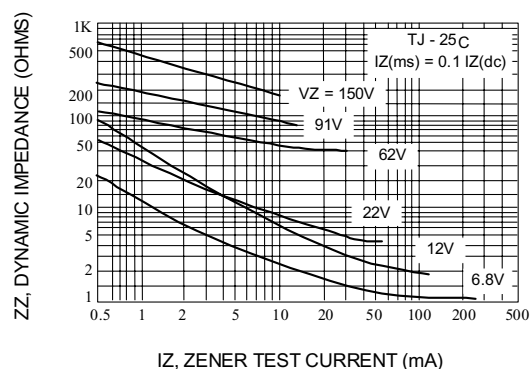


Fig. 4-EFFECT OF ZENER CURRENT

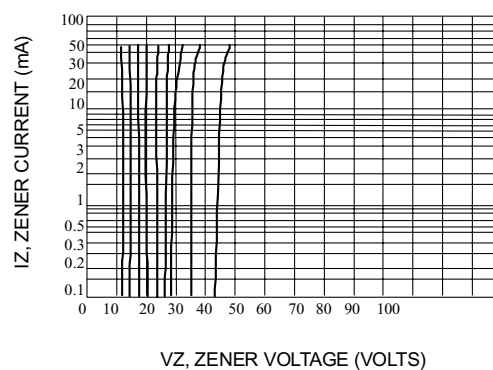
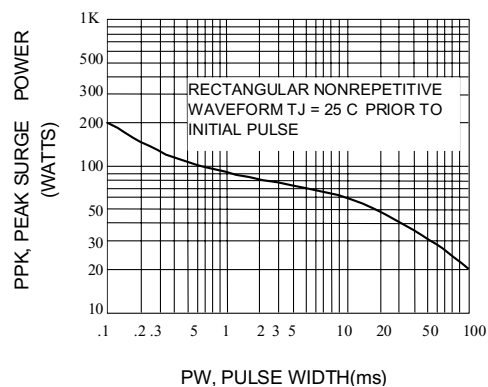
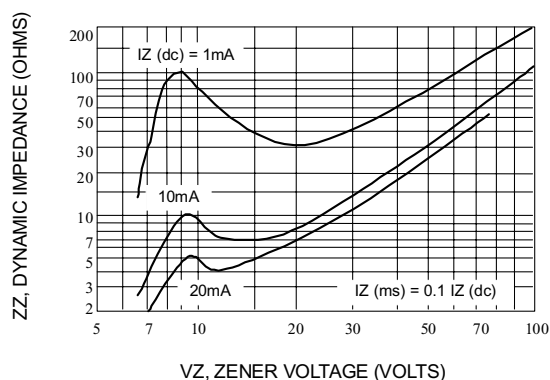


Fig. 7-VZ = 12 THRU 40 VOLTS



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## Ordering Information :

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

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