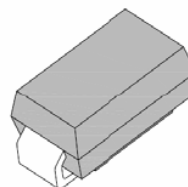


## 1.0W Surface Mount Zener Diodes

### Features

- Glass Passivated chip junction
- Low Zener Impedance
- Excellent Clamping Capability
- High temperature soldering guaranteed: 260°C/10 seconds
- RoHS Compliance

SMA



### Mechanical Data

|                   |                                           |
|-------------------|-------------------------------------------|
| <b>Case:</b>      | SMA (DO-214AC) molded plastic             |
| <b>Epoxy:</b>     | Plastic package has UL flammability 94V-0 |
| <b>Terminals:</b> | Solder plated, solderable per IEC 68-2-20 |
| <b>Polarity:</b>  | Color band denotes cathode                |
| <b>Weight:</b>    | 0.064 gram                                |

### Maximum Ratings ( $T_{Ambient}=25^{\circ}\text{C}$ unless noted otherwise)

| Symbol                               | Description                                                   | Value      | Unit   | Conditions                                           |
|--------------------------------------|---------------------------------------------------------------|------------|--------|------------------------------------------------------|
| <b>P<sub>tot</sub></b>               | Power dissipation                                             | 1.0        | W      | T <sub>a</sub> =25 °C                                |
| <b>P<sub>tot</sub></b>               | Power dissipation                                             | 3.0        | W      | T <sub>a</sub> =25 °C, R <sub>thJA</sub> = 25 °C / W |
| <b>T<sub>J</sub>,T<sub>STG</sub></b> | Operating Junction and Storage Temperature Range              | -65 to 175 | ° C    |                                                      |
| <b>V<sub>F</sub></b>                 | Max. Forward Voltage drop                                     | 1.0        | V      | I <sub>F</sub> =0.5A                                 |
| <b>R<sub>thJC</sub></b>              | Typical Thermal Resistance                                    | 25         | °C / W |                                                      |
| <b>R<sub>thJA</sub></b>              | PCB epoxy-glass path 1.5mm                                    | 150        | °C / W |                                                      |
|                                      | PCB epoxy-glass path 5 X 10mm                                 | 125        | °C / W |                                                      |
|                                      | Ceramic Plate (Al <sub>2</sub> O <sub>3</sub> ) path 5 X 10mm | 100        | °C / W |                                                      |

# 1.0W Surface Mount Zener Diodes

## Z1SMA3V3 - Z1SMA200

### Electrical Characteristics ( $T_{Ambient}=25^{\circ}C$ unless noted otherwise)

| Part NO. | Marking Code | Norminal Zener Voltage @ IZT |      |      |         | Max. Zener Impedance | Max. Reverse Leakage Current IR @ VR |         |
|----------|--------------|------------------------------|------|------|---------|----------------------|--------------------------------------|---------|
|          |              | V z                          |      |      | IzT(mA) |                      | ZZT @ IZT                            | IR (μA) |
|          |              | Nom.                         | Min. | Max. |         |                      |                                      |         |
|          |              |                              |      |      |         |                      |                                      |         |
| Z1SMA3V3 | FA           | 3.3                          | 3.1  | 3.5  | 100     | 10                   | 100                                  | 1       |
| Z1SMA3V6 | FB           | 3.6                          | 3.4  | 3.8  | 100     | 9                    | 75                                   | 1       |
| Z1SMA3V9 | FC           | 3.9                          | 3.7  | 4.1  | 100     | 7.5                  | 25                                   | 1       |
| Z1SMA4V3 | FX           | 4.3                          | 4    | 4.6  | 100     | 6                    | 15                                   | 1       |
| Z1SMA4V7 | FY           | 4.7                          | 4.4  | 5    | 100     | 5                    | 10                                   | 1       |
| Z1SMA5V1 | EA           | 5.1                          | 4.8  | 5.4  | 100     | 4                    | 5                                    | 1.5     |
| Z1SMA5V6 | EB           | 5.6                          | 5.2  | 6    | 100     | 2                    | 5                                    | 2       |
| Z1SMA6V2 | EC           | 6.2                          | 5.8  | 6.6  | 100     | 2                    | 5                                    | 3       |
| Z1SMA6V8 | EE           | 6.8                          | 6.4  | 7.2  | 100     | 2.5                  | 5                                    | 4       |
| Z1SMA7V5 | ED           | 7.5                          | 7    | 7.9  | 100     | 3                    | 5                                    | 5       |
| Z1SMA8V2 | EF           | 8.2                          | 7.7  | 8.7  | 100     | 3.5                  | 5                                    | 6       |
| Z1SMA9V1 | EG           | 9.1                          | 8.5  | 9.6  | 50      | 4                    | 5                                    | 7       |
| Z1SMA10  | EH           | 10                           | 9.4  | 10.6 | 50      | 4                    | 1                                    | 7.5     |
| Z1SMA11  | EK           | 11                           | 10.4 | 11.6 | 50      | 7                    | 1                                    | 8.2     |
| Z1SMA12  | EL           | 12                           | 11.4 | 12.7 | 50      | 7                    | 1                                    | 9.1     |
| Z1SMA13  | EM           | 13                           | 12.4 | 14.1 | 50      | 10                   | 1                                    | 10      |
| Z1SMA15  | EN           | 15                           | 13.8 | 15.6 | 50      | 10                   | 1                                    | 11      |
| Z1SMA16  | EP           | 16                           | 15.3 | 17.1 | 25      | 15                   | 1                                    | 12      |
| Z1SMA18  | EQ           | 18                           | 16.8 | 19.1 | 25      | 15                   | 1                                    | 13      |
| Z1SMA20  | ER           | 20                           | 18.8 | 21.2 | 25      | 15                   | 1                                    | 15      |
| Z1SMA22  | ES           | 22                           | 20.8 | 23.3 | 25      | 15                   | 1                                    | 16      |
| Z1SMA24  | ET           | 24                           | 22.8 | 25.6 | 25      | 15                   | 1                                    | 18      |
| Z1SMA27  | EU           | 27                           | 25.1 | 28.9 | 25      | 15                   | 1                                    | 20      |
| Z1SMA30  | EV           | 30                           | 28   | 32   | 25      | 15                   | 1                                    | 22      |
| Z1SMA33  | EW           | 33                           | 31   | 35   | 25      | 15                   | 1                                    | 24      |
| Z1SMA36  | EX           | 36                           | 34   | 38   | 10      | 40                   | 1                                    | 27      |
| Z1SMA39  | EY           | 39                           | 37   | 41   | 10      | 40                   | 1                                    | 30      |
| Z1SMA43  | EZ           | 43                           | 40   | 46   | 10      | 45                   | 1                                    | 33      |
| Z1SMA47  | FD           | 47                           | 44   | 50   | 10      | 45                   | 1                                    | 36      |
| Z1SMA51  | FF           | 51                           | 48   | 54   | 10      | 60                   | 1                                    | 39      |

# 1.0W Surface Mount Zener Diodes

## Z1SMA3V3 - Z1SMA200

| Part NO. | Marking Code | Norminal Zener Voltage @ IZT |      |      |         | Max. Zener Impedance | Max. Reverse Leakage Current IR @ VR |         |
|----------|--------------|------------------------------|------|------|---------|----------------------|--------------------------------------|---------|
|          |              | V z                          |      |      | IZT(mA) |                      |                                      |         |
|          |              | Nom.                         | Min. | Max. |         | IZT(mA)              | ZzT @ IZT                            | IR (μA) |
| Z1SMA56  | FG           | 56                           | 52   | 60   | 10      | 60                   | 1                                    | 43      |
| Z1SMA62  | FH           | 62                           | 58   | 66   | 10      | 80                   | 1                                    | 47      |
| Z1SMA68  | FK           | 68                           | 64   | 72   | 10      | 80                   | 1                                    | 51      |
| Z1SMA75  | FL           | 75                           | 70   | 80   | 10      | 100                  | 1                                    | 56      |
| Z1SMA82  | FM           | 82                           | 77   | 87   | 10      | 100                  | 1                                    | 62      |
| Z1SMA91  | FN           | 91                           | 85   | 96   | 5       | 200                  | 1                                    | 68      |
| Z1SMA100 | F            | 100                          | 94   | 106  | 5       | 200                  | 1                                    | 75      |
| Z1SMA110 | FQ           | 110                          | 104  | 116  | 5       | 250                  | 1                                    | 82      |
| Z1SMA120 | FR           | 120                          | 114  | 127  | 5       | 250                  | 1                                    | 91      |
| Z1SMA130 | FS           | 130                          | 124  | 141  | 5       | 300                  | 1                                    | 100     |
| Z1SMA150 | FT           | 150                          | 138  | 156  | 5       | 300                  | 1                                    | 110     |
| Z1SMA160 | FU           | 160                          | 153  | 171  | 5       | 350                  | 1                                    | 120     |
| Z1SMA180 | FV           | 180                          | 168  | 191  | 5       | 400                  | 1                                    | 130     |
| Z1SMA200 | FW           | 200                          | 188  | 212  | 5       | 400                  | 1                                    | 150     |

### Typical Characteristics Curves

Fig.1-Max. Continuous Power Dissipation

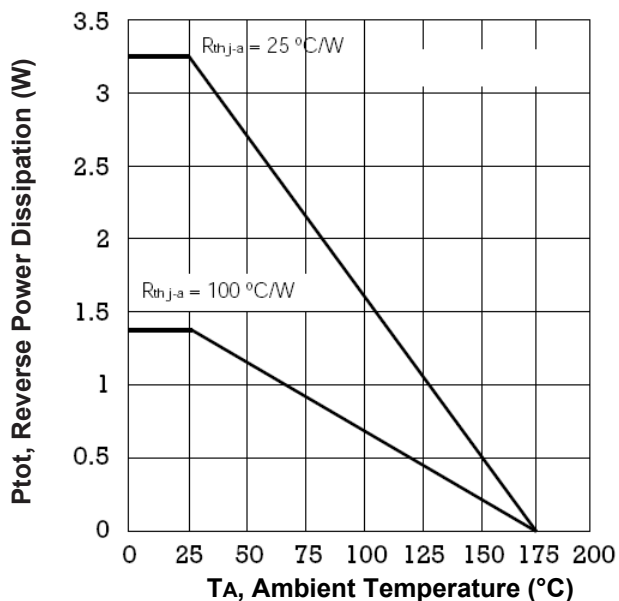
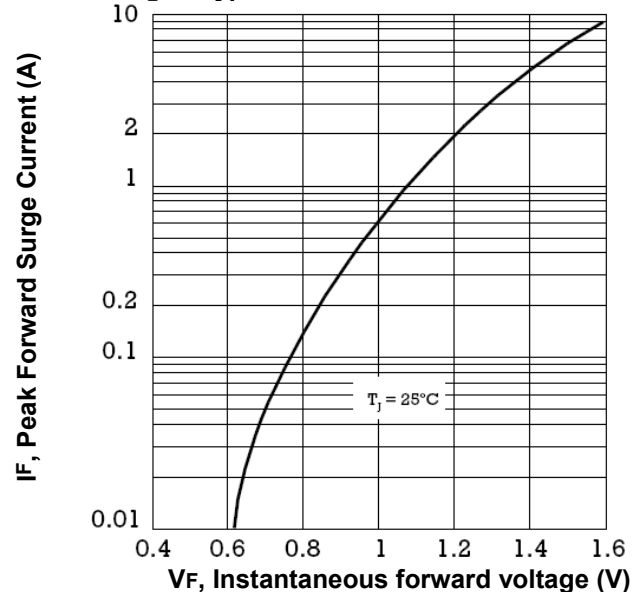


Fig.2- Typical Forward Characteristic



# 1.0W Surface Mount Zener Diodes

## Z1SMA3V3 - Z1SMA200

Fig.3-Typical Zener Impedance

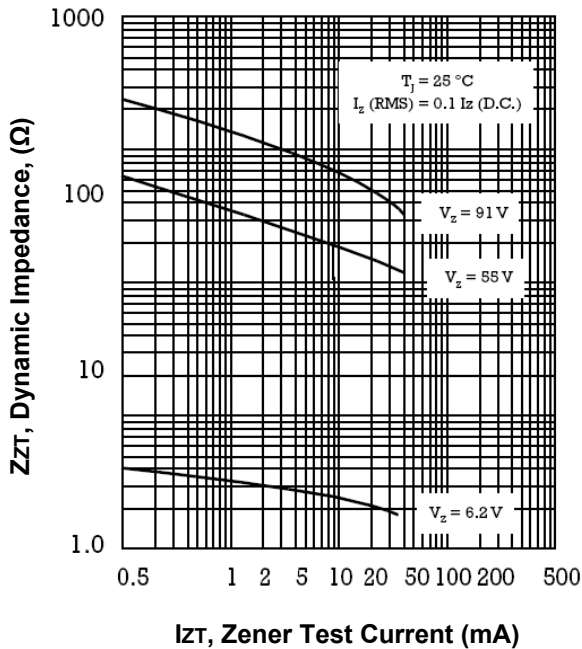
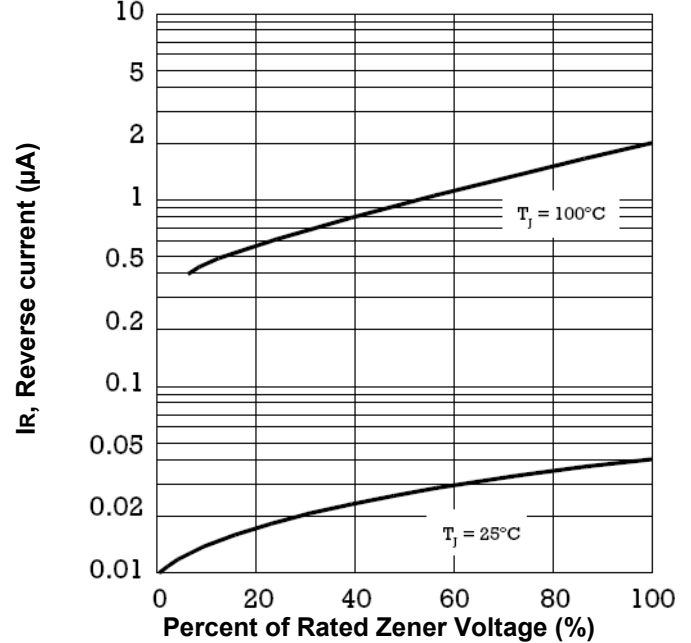
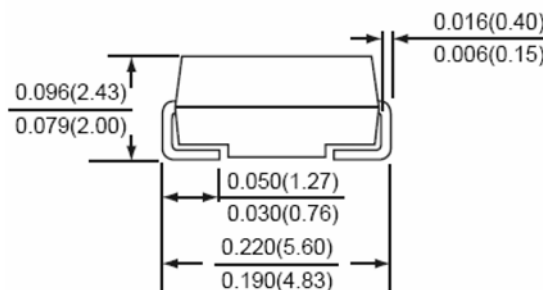
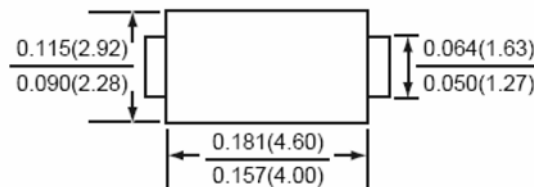


Fig.4-Typical Reverse Characteristics



### Dimensions in inch (mm)

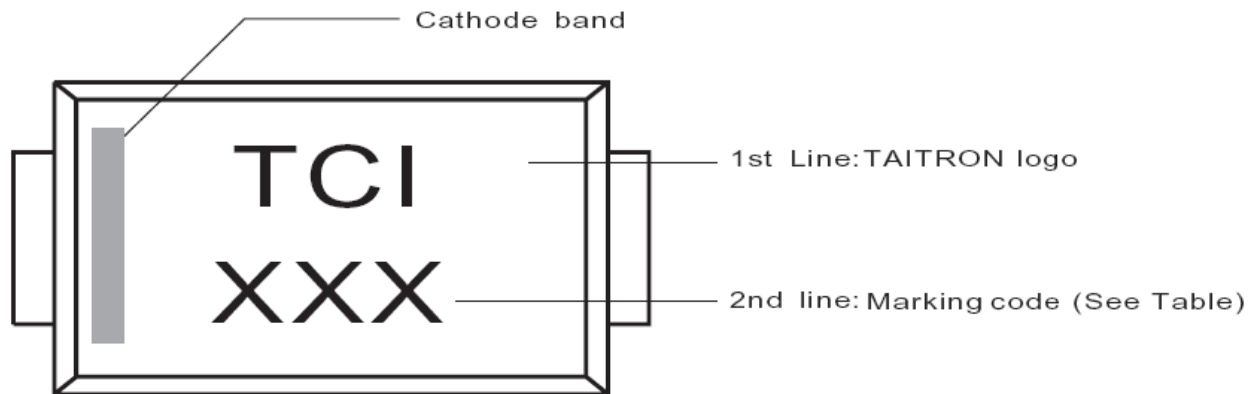


### SMA (DO-214AC)

# 1.0W Surface Mount Zener Diodes

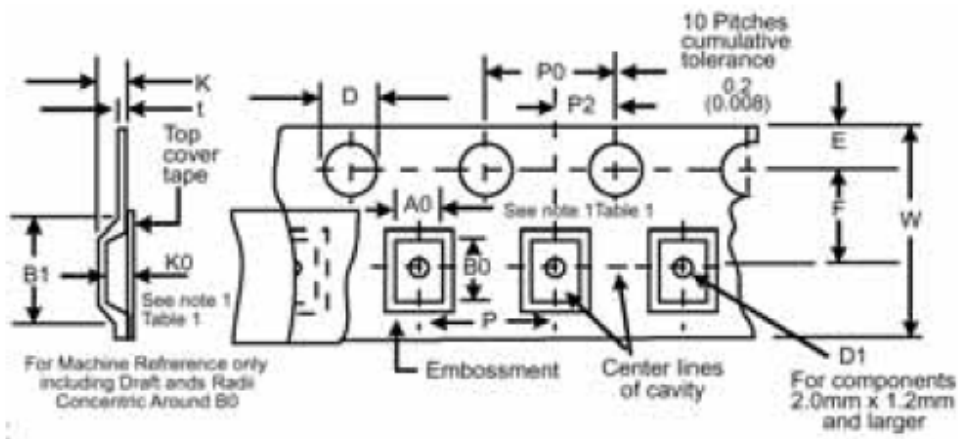
## Z1SMA3V3 - Z1SMA200

### Marking Information:



### Packing Information:

#### Carrier Tape Dimensions (in mm)

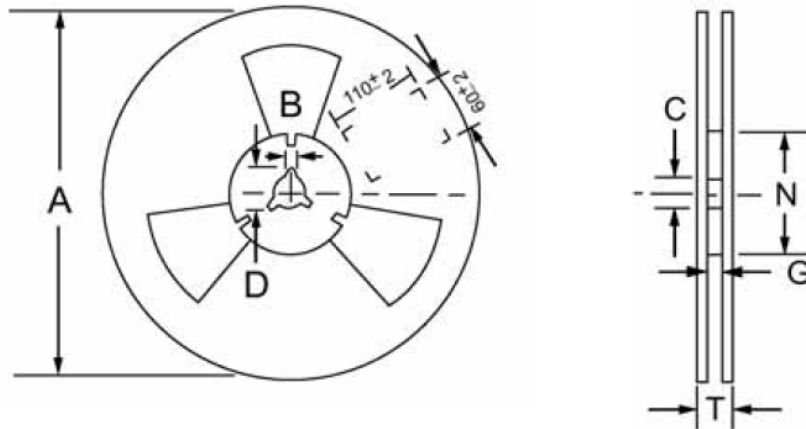


| Components Outline | D         | E         | F        | P0       | P        | W         |
|--------------------|-----------|-----------|----------|----------|----------|-----------|
| SMA                | 1.55±0.10 | 1.75±0.10 | 5.5±0.05 | 4.0±0.10 | 4.0±0.10 | 12.0±0.30 |

# 1.0W Surface Mount Zener Diodes

## Z1SMA3V3 - Z1SMA200

### Reel Dimensions (in mm)



| A        | B   | C        | D         | G         | N       | T         |
|----------|-----|----------|-----------|-----------|---------|-----------|
| 330 max. | 1.5 | 13.0±0.5 | 20.2 min. | 14.4 max. | 75 min. | 18.4 max. |

### Packing Quantity Information:

| Quantity           | PCS per Inner Box | PCS per Carton |
|--------------------|-------------------|----------------|
| -TR70 Tape & Reel  | 1800/Reel         | 144000         |
| - TR30 Tape & Reel | 7500/Reel         | 120000         |

### Carton Size Information:

| Cartoon Size        |
|---------------------|
| 364X356X340( in mm) |

# 1.0W Surface Mount Zener Diodes

## Z1SMA3V3 - Z1SMA200

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