

**SMA**

**Features**

High forward surge capability  
 Glass passivated junction  
 Low Zener Impedance  
 Power Dissipation of 1000mW  
 High Stability and High Reliability  
 Halogen free and RoHS compliant

**Mechanical Data**

CASE: SMAJ(DO-214AC) Molded Plastic  
 Polarity: Color band denotes cathode end  
 Mounting position: ANY  
 Weight: 0.0025 ounces, 0.071 gram

**Maximum Ratings & Electrical Characteristics**

(Ratings at 25°C ambient temperature unless otherwise specified.)

| Ratings at 25°C ambient temperature unless otherwise specified.                                                   |                |              |                               |
|-------------------------------------------------------------------------------------------------------------------|----------------|--------------|-------------------------------|
| MDD Catalog Number                                                                                                | SYMBOLS        | VALUE        | UNITS                         |
| Peak Power Dissipation at $T_A=50^\circ\text{C}$ ,<br>Derate above $50^\circ\text{C}$ (Note 1)                    | $P_D$          | 1.0<br>6.67  | Watts<br>mW/ $^\circ\text{C}$ |
| Peak Forward Surge Current, 8.3 ms Single Half<br>Sine-wave Superimposed on Rated Load<br>(JEDEC method) (Note 2) | $I_{FSM}$      | 10.0         | A                             |
| Operating and Storage Temperature Range                                                                           | $T_J, T_{STG}$ | -55 to + 150 | $^\circ\text{C}$              |

Notes: 1. Mounted on  $5.0\text{mm}^2$  (0.013mm thick) land areas.

2. Measured on 8.3ms Single Half Sine-wave or Equivalent Square Wave, Duty Cycle=4 Pulses Per Minute Maximum.

**Electrical Characteristics**

(Ratings at 25°C ambient temperature unless otherwise specified).

| Type      | Marking | Zener Voltage Range <sup>(1)</sup> |         |         | $I_{ZT}$<br>(mA) | Dynamic Impedance<br>$Z_{ZT}$ (at $I_{ZT}$ )<br>Max ( $\Omega$ ) | Reverse Current                |                 | Admissible Zener<br>Current<br>$I_{ZM}$ (mA) |
|-----------|---------|------------------------------------|---------|---------|------------------|------------------------------------------------------------------|--------------------------------|-----------------|----------------------------------------------|
|           |         | $V_{ZT}$ (at $I_{ZT}$ )            |         |         |                  |                                                                  | $I_R$<br>Max ( $\mu\text{A}$ ) | at $V_R$<br>(V) |                                              |
|           |         | Min (V)                            | Nom (V) | Max (V) |                  |                                                                  |                                |                 |                                              |
| 1SMA4728A | 728A    | 3.10                               | 3.3     | 3.50    | 75               | 10                                                               | 100                            | 1               | 285                                          |
| 1SMA4729A | 729A    | 3.40                               | 3.6     | 3.80    | 69               | 10                                                               | 100                            | 1               | 263                                          |
| 1SMA4730A | 730A    | 3.70                               | 3.9     | 4.10    | 64               | 9.0                                                              | 50                             | 1               | 243                                          |
| 1SMA4731A | 731A    | 4.06                               | 4.3     | 4.56    | 58               | 9.0                                                              | 25                             | 1               | 219                                          |
| 1SMA4732A | 732A    | 4.50                               | 4.7     | 4.93    | 53               | 8.0                                                              | 10                             | 1               | 203                                          |
| 1SMA4733A | 733A    | 4.84                               | 5.1     | 5.36    | 49               | 7.0                                                              | 10                             | 1               | 186                                          |
| 1SMA4734A | 734A    | 5.32                               | 5.6     | 5.92    | 45               | 5.0                                                              | 10                             | 2               | 170                                          |
| 1SMA4735A | 735A    | 5.86                               | 6.2     | 6.51    | 41               | 2.0                                                              | 10                             | 3               | 154                                          |
| 1SMA4736A | 736A    | 6.46                               | 6.8     | 7.18    | 37               | 3.5                                                              | 10                             | 4               | 140                                          |
| 1SMA4737A | 737A    | 7.12                               | 7.5     | 7.88    | 34               | 4.0                                                              | 10                             | 5               | 127                                          |
| 1SMA4738A | 738A    | 7.79                               | 8.2     | 8.67    | 31               | 4.5                                                              | 10                             | 6               | 116                                          |
| 1SMA4739A | 739A    | 8.60                               | 9.1     | 9.59    | 28               | 5.0                                                              | 10                             | 7               | 104                                          |
| 1SMA4740A | 740A    | 9.50                               | 10      | 10.5    | 25               | 7.0                                                              | 10                             | 7               | 95                                           |
| 1SMA4741A | 741A    | 10.4                               | 11      | 11.6    | 23               | 8.0                                                              | 5                              | 8               | 86                                           |
| 1SMA4742A | 742A    | 11.4                               | 12      | 12.6    | 21               | 9.0                                                              | 5                              | 9               | 79                                           |
| 1SMA4743A | 743A    | 12.4                               | 13      | 14.1    | 19               | 10                                                               | 5                              | 10              | 71                                           |
| 1SMA4744A | 744A    | 13.8                               | 15      | 15.8    | 17               | 14                                                               | 5                              | 11              | 63                                           |

| Type      | Marking | Zener Voltage Range <sup>(1)</sup> |         |         | $I_{ZT}$ | Dynamic Impedance | Reverse Current         |       | Admissible Zener Current |          |
|-----------|---------|------------------------------------|---------|---------|----------|-------------------|-------------------------|-------|--------------------------|----------|
|           |         | $V_{ZT}$ (at $I_{ZT}$ )            |         |         |          |                   | $Z_{ZT}$ (at $I_{ZT}$ ) | $I_R$ |                          | at $V_R$ |
|           |         | Min (V)                            | Nom (V) | Max (V) |          |                   |                         |       |                          |          |
| 1SMA4745A | 745A    | 15.2                               | 16      | 17.1    | 16       | 16                | 5                       | 12    | 58                       |          |
| 1SMA4746A | 746A    | 16.8                               | 18      | 19.2    | 14       | 20                | 5                       | 13    | 52                       |          |
| 1SMA4747A | 747A    | 19.0                               | 20      | 21.2    | 13       | 22                | 5                       | 15    | 47                       |          |
| 1SMA4748A | 748A    | 20.8                               | 22      | 23.3    | 12       | 23                | 5                       | 17    | 43                       |          |
| 1SMA4749A | 749A    | 22.8                               | 24      | 26.0    | 11       | 25                | 5                       | 18    | 38                       |          |
| 1SMA4750A | 750A    | 25.3                               | 27      | 28.9    | 9.5      | 35                | 5                       | 21    | 35                       |          |
| 1SMA4751A | 751A    | 28.2                               | 30      | 32.0    | 8.5      | 40                | 5                       | 23    | 31                       |          |
| 1SMA4752A | 752A    | 31.3                               | 33      | 34.9    | 7.5      | 45                | 5                       | 25    | 28                       |          |
| 1SMA4753A | 753A    | 34.2                               | 36      | 37.9    | 7.0      | 50                | 5                       | 27    | 26                       |          |
| 1SMA4754A | 754A    | 37.2                               | 39      | 41.5    | 6.5      | 60                | 5                       | 30    | 24                       |          |
| 1SMA4755A | 755A    | 40.9                               | 43      | 45.6    | 6.0      | 70                | 1                       | 32    | 22                       |          |
| 1SMA4756A | 756A    | 44.9                               | 47      | 49.8    | 5.5      | 80                | 1                       | 35    | 20                       |          |
| 1SMA4757A | 757A    | 48.6                               | 51      | 54.0    | 5.0      | 95                | 1                       | 38    | 18                       |          |
| 1SMA4758A | 758A    | 53.6                               | 56      | 58.8    | 4.5      | 110               | 1                       | 42    | 17                       |          |
| 1SMA4759A | 759A    | 58.9                               | 62      | 65.6    | 4.0      | 125               | 1                       | 47    | 15                       |          |
| 1SMA4760A | 760A    | 64.6                               | 68      | 71.7    | 3.7      | 150               | 1                       | 52    | 14                       |          |
| 1SMA4761A | 761A    | 71.2                               | 75      | 78.8    | 3.3      | 175               | 1                       | 56    | 12                       |          |
| 1SMA4762A | 762A    | 77.9                               | 82      | 87.0    | 3.0      | 200               | 1                       | 62    | 11                       |          |
| 1SMA4763A | 763A    | 86.0                               | 91      | 96.0    | 2.8      | 250               | 1                       | 69    | 10                       |          |
| 1SMA4764A | 764A    | 95.0                               | 100     | 105     | 2.5      | 350               | 1                       | 76    | 9.5                      |          |
| 1SMA4765A | 765A    | 104                                | 110     | 116     | 2.3      | 450               | 1                       | 84    | 8.6                      |          |
| 1SMA4766A | 766A    | 114                                | 120     | 127     | 2.0      | 550               | 1                       | 91    | 7.8                      |          |
| 1SMA4767A | 767A    | 125                                | 135     | 142     | 1.9      | 700               | 1                       | 100   | 7.0                      |          |
| 1SMA4768A | 768A    | 140                                | 150     | 157     | 1.7      | 900               | 1                       | 110   | 6.3                      |          |
| 1SMA4769A | 769A    | 155                                | 165     | 172     | 1.6      | 1100              | 1                       | 120   | 5.8                      |          |
| 1SMA4770A | 770A    | 170                                | 180     | 191     | 1.4      | 1200              | 1                       | 135   | 5.2                      |          |
| 1SMA4771A | 771A    | 189                                | 200     | 211     | 1.2      | 1400              | 1                       | 150   | 4.7                      |          |
| 1SMA4772A | 772A    | 209                                | 220     | 231     | 1.0      | 1600              | 1                       | 165   | 4.3                      |          |
| 1SMA4773A | 773A    | 229                                | 240     | 251     | 1.0      | 1800              | 1                       | 180   | 3.9                      |          |
| 1SMA4774A | 774A    | 249                                | 260     | 271     | 1.0      | 2000              | 1                       | 190   | 3.7                      |          |
| 1SMA4775A | 775A    | 269                                | 280     | 291     | 1.0      | 2100              | 1                       | 205   | 3.4                      |          |
| 1SMA4776A | 776A    | 289                                | 300     | 315     | 1.0      | 2300              | 1                       | 230   | 3.1                      |          |
| 1SMA4777A | 777A    | 313                                | 330     | 346     | 1.0      | 2500              | 1                       | 250   | 2.8                      |          |

(1)  $V_{ZT}$  is tested with pulses (20 ms)

## Ratings and Characteristic Curves

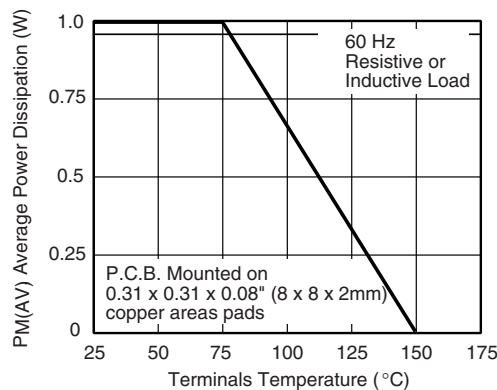


Fig. 1 - Maximum Continuous Power Dissipation

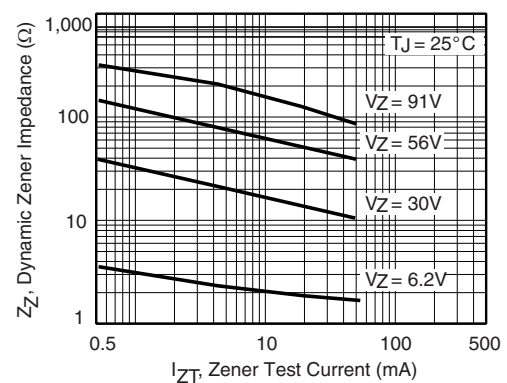


Fig. 2 - Typical Zener Impedance

## Ratings and Characteristic Curves

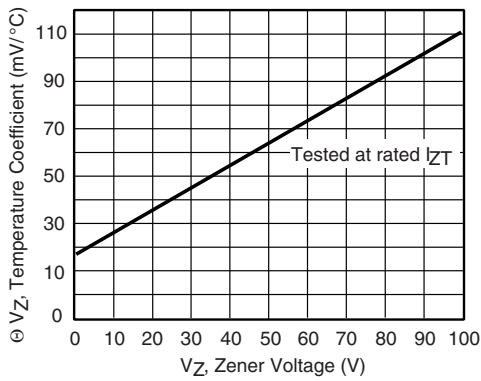


Fig. 3 - Typical Temperature Coefficients

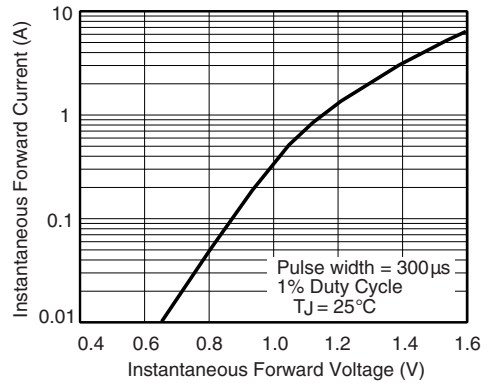


Fig. 4 - Typical Instantaneous Forward Characteristics for 1SMA4763A

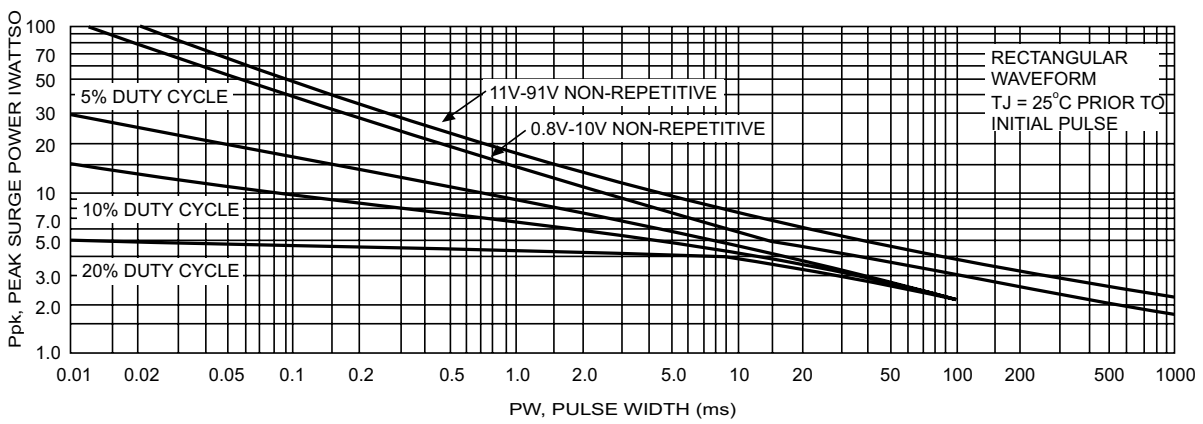


Fig. 5 - Maximum Surge Power

## Summary of Packing Options

| Package | Packing Description | Packing Quantity | Industry Standard |
|---------|---------------------|------------------|-------------------|
| SMA     | Tape/Reel, 7" reel  | 2000             | EIA-481-1         |

## Package Outline Dimensions: SMA(DO-214AC)

| Dim | Millimeters |      | Inches |       |
|-----|-------------|------|--------|-------|
|     | Min         | Max  | Min    | Max   |
| L   | 4.1         | 4.3  | 0.161  | 0.169 |
| D   | 2.5         | 2.7  | 0.098  | 0.106 |
| D1  | 1.3         | 1.5  | 0.051  | 0.059 |
| T   | 4.8         | 5.2  | 0.189  | 0.205 |
| T1  | 0.9         | 1.5  | 0.035  | 0.060 |
| d   | -           | 0.2  | -      | 0.008 |
| H   | 2.05        | 2.35 | 0.081  | 0.093 |
| H1  | 2.0         | 2.2  | 0.079  | 0.087 |

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