

## Silicon Planar Zener Diodes

### FEATURES

- ◆ Total power dissipation: Max. 1 W.
- ◆ Wide zener reverse voltage range 3.3V to 330V.
- ◆ Small plastic package suitable for surface mounted design.
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

### MECHANICAL DATA

- ◆ Case: DO-214AC/SMA
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Approx. Weight: 0.055g / 0.002oz

### Pinning

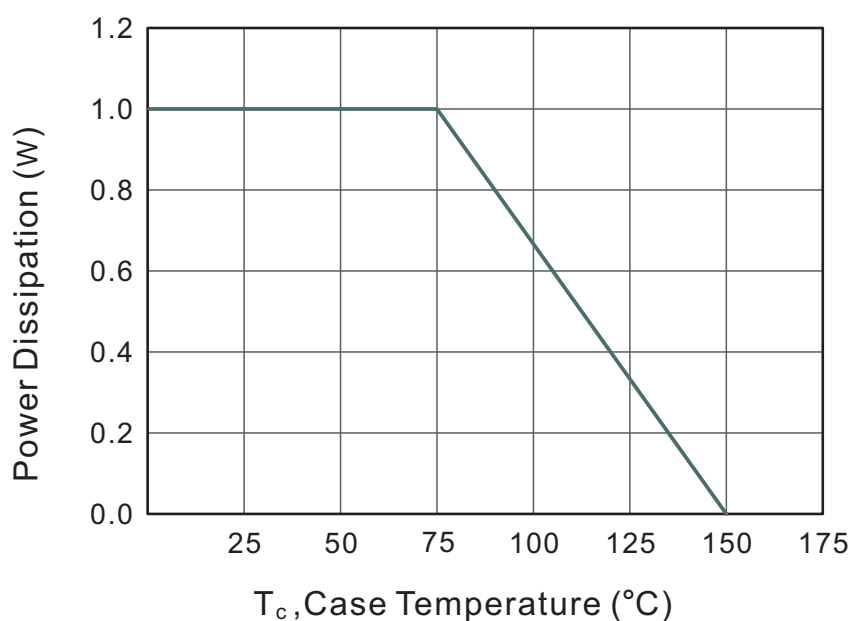
| 1.Cathode                                                                           | 2.Anode |
|-------------------------------------------------------------------------------------|---------|
|  |         |
| DO-214AC/SMA                                                                        |         |

### Absolute Maximum Ratings And Characteristics (Ta = 25 °C)

| Parameter                      | Symbol         | Value      | Unit |
|--------------------------------|----------------|------------|------|
| Power Dissipation at TL=75°C   | P <sub>D</sub> | 1          | W    |
| Forward Voltage at IF = 200 mA | V <sub>F</sub> | 1.2        | V    |
| Junction Temperature Range     | T <sub>J</sub> | 55 ~ +150  | °C   |
| Storage Temperature Range      | T <sub>s</sub> | -55 ~ +150 | °C   |

(1) Thermal resistance from junction to ambient at P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper areas pads.

Fig.1 Maximum Continuous Power Derating



**Characteristics at Ta = 25°C**

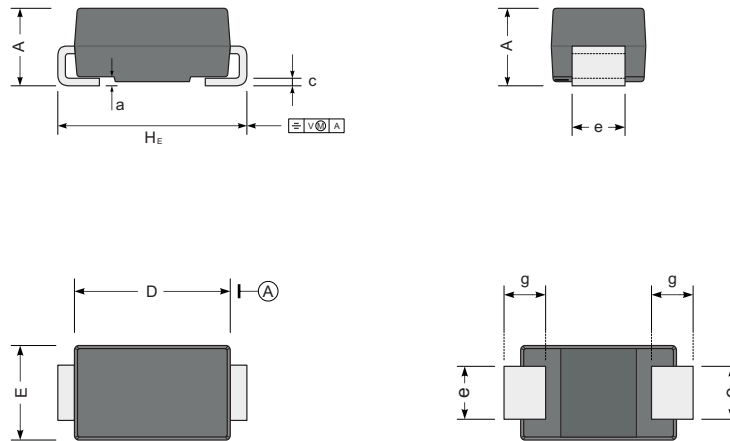
| Type      | Marking | Zener Voltage Range <sup>(1)</sup>     |           |           |                 |         | Dynamic Impedance                      | Reverse Current |                      | Admissible Zener Current |
|-----------|---------|----------------------------------------|-----------|-----------|-----------------|---------|----------------------------------------|-----------------|----------------------|--------------------------|
|           |         | V <sub>ZT</sub> ( at I <sub>ZT</sub> ) |           |           | I <sub>ZT</sub> |         | Z <sub>ZT</sub> ( at I <sub>ZT</sub> ) | I <sub>R</sub>  | at V <sub>R</sub>    |                          |
|           |         | Min ( V )                              | Nom ( V ) | Max ( V ) | (mA)            | Max (Ω) | Max ( μA )                             | ( V )           | I <sub>ZM</sub> (mA) |                          |
| 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                   |                          |
| 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<sub>ZT</sub> is tested with pulses (20 ms)

## Package Outline

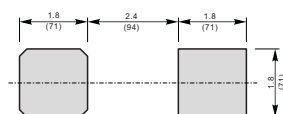
## DO-214AC SMA

Plastic surface mounted package; 2 leads



| UNIT |     | A    | D   | E    | H <sub>E</sub> | c    | e   | g   | a   |
|------|-----|------|-----|------|----------------|------|-----|-----|-----|
| mm   | max | 2.42 | 4.5 | 2.80 | 5.2            | 0.31 | 1.6 | 1.5 | 0.3 |
|      | min | 1.98 | 4.0 | 2.54 | 4.7            | 0.15 | 1.3 | 0.9 |     |
| mil  | max | 96   | 181 | 110  | 205            | 12   | 63  | 59  | 12  |
|      | min | 78   | 157 | 100  | 185            | 6    | 51  | 35  |     |

## The recommended mounting pad size



Unit :  $\frac{\text{mm}}{(\text{mil})}$

## Summary of Packing Options

| Package      | Packing Description | Packing Quantity | Industry Standard |
|--------------|---------------------|------------------|-------------------|
| DO-214AC SMA | Tape/Reel, 11" reel | 5000             | EIA-481-1         |
|              | Tape/Reel, 7" reel  | 2000             | EIA-481-1         |

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