

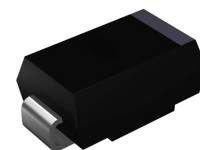
# 1SMA4728A thru 1SMA4764A

Surface Mount Zener Diodes

Vz Range: 3.3V to 100V Power Dissipation: 1W

## Features

- Photo glass passivated junction
- Ideal for automated placement
- Low inductance
- Typical IR less than 1μA above 11V
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



DO-214AC (SMA)

## Mechanical Data

- Case: DO-214AC (SMA)
- Molding compound meets UL 94V-0 flammability rating
- Moisture sensitivity level: Level 1, per J-STD-020
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked

## Applications

For general purpose regulation and protection applications

## Maximum Rating ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter                                                                                            | Symbol                | Value       | Unit                 |
|------------------------------------------------------------------------------------------------------|-----------------------|-------------|----------------------|
| Forward Voltage @ $I_F=200\text{mA}$                                                                 | $V_F$                 | 1.2         | V                    |
| Total Power Dissipation at $T_A=50^{\circ}\text{C}$ , Derate Above $50^{\circ}\text{C}$ <sup>1</sup> | $P_{\text{tot}}$      | 1.25        | W                    |
| Total Power Dissipation at $T_A=75^{\circ}\text{C}$                                                  | $P_{\text{tot}}$      | 1           | W                    |
| Thermal Resistance, Junction to Lead <sup>1</sup>                                                    | $R_{\theta\text{JL}}$ | 29          | $^{\circ}\text{C/W}$ |
| Thermal Resistance, Junction to Ambient <sup>1</sup>                                                 | $R_{\theta\text{JA}}$ | 120         | $^{\circ}\text{C/W}$ |
| Thermal Resistance, Junction to Case <sup>1</sup>                                                    | $R_{\theta\text{JC}}$ | 31          | $^{\circ}\text{C/W}$ |
| Junction Temperature                                                                                 | $T_J$                 | -55 to +150 | $^{\circ}\text{C}$   |
| Storage Temperature                                                                                  | $T_{\text{STG}}$      | -55 to +150 | $^{\circ}\text{C}$   |

Note:

1. Mounted on 5mm x 5mm Cu pad test board

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## Electrical Characteristics

| Part Number | Device Marking Code | V <sub>Z</sub> @ I <sub>ZT</sub> |          |          | Maximum Zener Impedance           |      |                                   |      | Maximum Leakage Current         |      |
|-------------|---------------------|----------------------------------|----------|----------|-----------------------------------|------|-----------------------------------|------|---------------------------------|------|
|             |                     |                                  |          |          | Z <sub>YT</sub> @ I <sub>ZT</sub> |      | Z <sub>ZK</sub> @ I <sub>ZK</sub> |      | I <sub>R</sub> @ V <sub>R</sub> |      |
|             |                     | Min. (V)                         | Nom. (V) | Max. (V) | Ω                                 | mA   | Ω                                 | mA   | uA                              | V    |
| 1SMA4728A   | 4728A               | 3.1                              | 3.3      | 3.5      | 10.0                              | 76.0 | 400                               | 1.00 | 100                             | 1.0  |
| 1SMA4729A   | 4729A               | 3.4                              | 3.6      | 3.8      | 10.0                              | 69.0 | 400                               | 1.00 | 100                             | 1.0  |
| 1SMA4730A   | 4730A               | 3.7                              | 3.9      | 4.1      | 9.0                               | 64.0 | 400                               | 1.00 | 50                              | 1.0  |
| 1SMA4731A   | 4731A               | 4.1                              | 4.3      | 4.5      | 9.0                               | 58.0 | 400                               | 1.00 | 10                              | 1.0  |
| 1SMA4732A   | 4732A               | 4.5                              | 4.7      | 4.9      | 8.0                               | 53.0 | 500                               | 1.00 | 10                              | 1.0  |
| 1SMA4733A   | 4733A               | 4.8                              | 5.1      | 5.4      | 7.0                               | 49.0 | 550                               | 1.00 | 10                              | 1.0  |
| 1SMA4734A   | 4734A               | 5.3                              | 5.6      | 5.9      | 5.0                               | 45.0 | 600                               | 1.00 | 10                              | 2.0  |
| 1SMA4735A   | 4735A               | 5.9                              | 6.2      | 6.5      | 2.0                               | 41.0 | 700                               | 1.00 | 10                              | 3.0  |
| 1SMA4736A   | 4736A               | 6.5                              | 6.8      | 7.1      | 3.5                               | 37.0 | 700                               | 1.00 | 10                              | 4.0  |
| 1SMA4737A   | 4737A               | 7.1                              | 7.5      | 7.9      | 4.0                               | 34.0 | 700                               | 0.50 | 10                              | 5.0  |
| 1SMA4738A   | 4738A               | 7.8                              | 8.2      | 8.6      | 4.5                               | 31.0 | 700                               | 0.50 | 10                              | 6.0  |
| 1SMA4739A   | 4739A               | 8.6                              | 9.1      | 9.6      | 5.0                               | 28.0 | 700                               | 0.50 | 10                              | 7.0  |
| 1SMA4740A   | 4740A               | 9.5                              | 10.0     | 10.5     | 7.0                               | 25.0 | 700                               | 0.25 | 10                              | 7.6  |
| 1SMA4741A   | 4741A               | 10.5                             | 11.0     | 11.6     | 8.0                               | 23.0 | 700                               | 0.25 | 0.1                             | 8.4  |
| 1SMA4742A   | 4742A               | 11.4                             | 12.0     | 12.6     | 9.0                               | 21.0 | 700                               | 0.25 | 0.1                             | 9.1  |
| 1SMA4743A   | 4743A               | 12.4                             | 13.0     | 13.7     | 10.0                              | 19.0 | 700                               | 0.25 | 0.1                             | 9.9  |
| 1SMA4744A   | 4744A               | 14.3                             | 15.0     | 15.8     | 14.0                              | 17.0 | 700                               | 0.25 | 0.1                             | 11.4 |
| 1SMA4745A   | 4745A               | 15.2                             | 16.0     | 16.8     | 16.0                              | 15.5 | 700                               | 0.25 | 0.1                             | 12.2 |
| 1SMA4746A   | 4746A               | 17.1                             | 18.0     | 18.9     | 20.0                              | 14.0 | 750                               | 0.25 | 0.1                             | 13.7 |
| 1SMA4747A   | 4747A               | 19.0                             | 20.0     | 21.0     | 22.0                              | 12.5 | 750                               | 0.25 | 0.1                             | 15.2 |
| 1SMA4748A   | 4748A               | 20.9                             | 22.0     | 23.1     | 23.0                              | 11.5 | 750                               | 0.25 | 0.1                             | 16.7 |
| 1SMA4749A   | 4749A               | 22.8                             | 24.0     | 25.2     | 25.0                              | 10.5 | 750                               | 0.25 | 0.1                             | 18.2 |
| 1SMA4750A   | 4750A               | 25.7                             | 27.0     | 28.4     | 35.0                              | 9.5  | 750                               | 0.25 | 0.1                             | 20.6 |
| 1SMA4751A   | 4751A               | 28.5                             | 30.0     | 31.5     | 40.0                              | 8.5  | 1000                              | 0.25 | 0.1                             | 22.8 |
| 1SMA4752A   | 4752A               | 31.4                             | 33.0     | 34.7     | 45.0                              | 7.5  | 1000                              | 0.25 | 0.1                             | 25.1 |
| 1SMA4753A   | 4753A               | 34.2                             | 36.0     | 37.8     | 50.0                              | 7.0  | 1000                              | 0.25 | 0.1                             | 27.4 |
| 1SMA4754A   | 4754A               | 37.1                             | 39.0     | 41       | 60.0                              | 6.5  | 1000                              | 0.25 | 0.1                             | 29.7 |
| 1SMA4755A   | 4755A               | 40.9                             | 43.0     | 45.2     | 70.0                              | 6.0  | 1500                              | 0.25 | 0.1                             | 32.7 |
| 1SMA4756A   | 4756A               | 44.7                             | 47.0     | 49.4     | 80.0                              | 5.5  | 1500                              | 0.25 | 0.1                             | 35.8 |
| 1SMA4757A   | 4757A               | 48.5                             | 51.0     | 53.6     | 95.0                              | 5.0  | 1500                              | 0.25 | 0.1                             | 38.8 |
| 1SMA4758A   | 4758A               | 53.2                             | 56.0     | 58.8     | 110                               | 4.5  | 2000                              | 0.25 | 0.1                             | 42.6 |
| 1SMA4759A   | 4759A               | 58.9                             | 62.0     | 65.1     | 125                               | 4.0  | 2000                              | 0.25 | 0.1                             | 47.1 |
| 1SMA4760A   | 4760A               | 64.6                             | 68.0     | 71.4     | 150                               | 3.7  | 2000                              | 0.25 | 0.1                             | 51.7 |
| 1SMA4761A   | 4761A               | 71.3                             | 75.0     | 78.8     | 175                               | 3.3  | 2000                              | 0.25 | 0.1                             | 56.0 |
| 1SMA4762A   | 4762A               | 77.9                             | 82.0     | 86.1     | 200                               | 3.0  | 3000                              | 0.25 | 0.1                             | 62.2 |
| 1SMA4763A   | 4763A               | 86.5                             | 91.0     | 95.6     | 250                               | 2.8  | 3000                              | 0.25 | 0.1                             | 69.2 |
| 1SMA4764A   | 4764A               | 95.0                             | 100      | 105      | 350                               | 2.5  | 3000                              | 0.25 | 0.1                             | 76.0 |

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## Ratings and Characteristic Curves (T<sub>A</sub>=25°C unless otherwise specified)

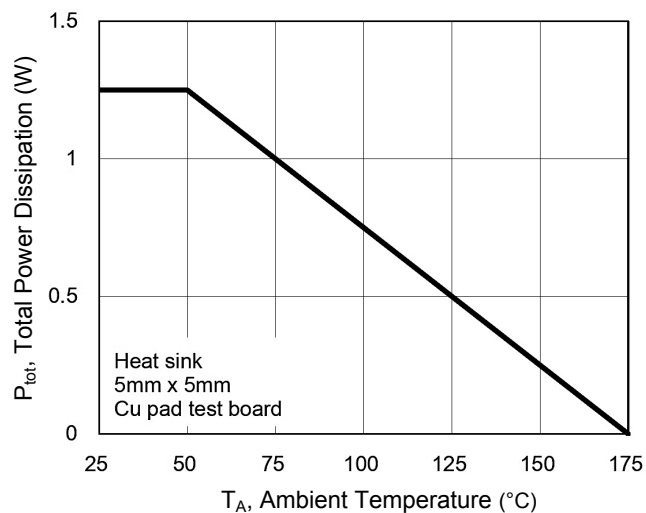


Figure 1. Steady State Power Derating

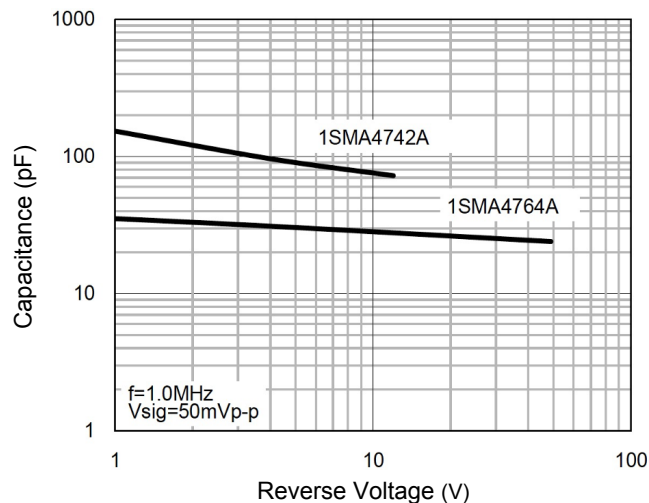


Figure 2. Typical Junction Capacitance

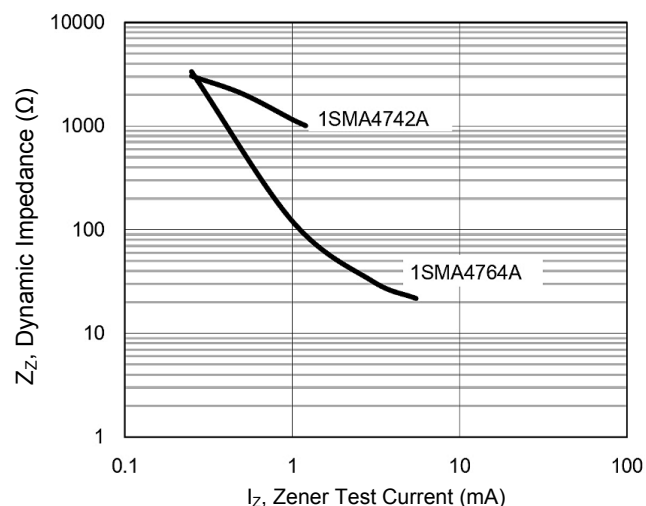


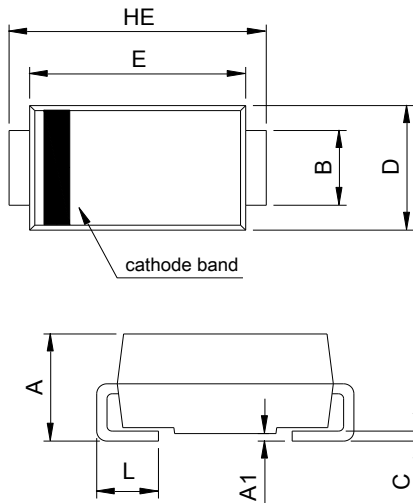
Figure 3. Typical Zener Impedance

# 1SMA4728A thru 1SMA4764A

Surface Mount Zener Diodes

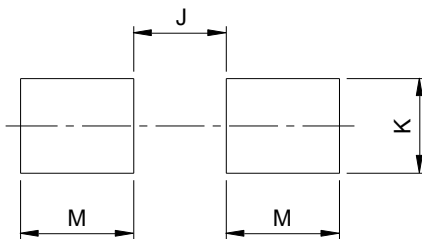
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## Package Outline Dimensions DO-214AC (SMA)



| SMA (DO-214AC) |             |      |        |       |
|----------------|-------------|------|--------|-------|
| DIM            | Millimeters |      | Inches |       |
|                | Min.        | Max. | Min.   | Max.  |
| A              | 1.90        | 2.30 | 0.075  | 0.091 |
| A1             | 0.00        | 0.20 | 0.000  | 0.008 |
| B              | 1.25        | 1.65 | 0.049  | 0.065 |
| C              | 0.15        | 0.31 | 0.006  | 0.012 |
| D              | 2.35        | 2.90 | 0.093  | 0.114 |
| E              | 3.99        | 4.60 | 0.157  | 0.181 |
| HE             | 4.80        | 5.30 | 0.189  | 0.209 |
| L              | 0.76        | 1.52 | 0.030  | 0.060 |

## Recommended Pad Layout



| Recommended Pad Layout (Reference ONLY) |             |      |        |       |
|-----------------------------------------|-------------|------|--------|-------|
| DIM                                     | Millimeters |      | Inches |       |
|                                         | Min.        | Max. | Min.   | Max.  |
| J                                       | -           | 2.20 | -      | 0.087 |
| K                                       | 1.72        | -    | 0.068  | -     |
| M                                       | 2.00        | -    | 0.079  | -     |

## Order Information

| Device    | Package        | Carrier     | Quantity         |
|-----------|----------------|-------------|------------------|
| 1SMA47xxA | DO-214AC (SMA) | Tape & Reel | 7,500 Pcs / Reel |

For more information, please contact us at: [inquiry@goodarksemi.com](mailto:inquiry@goodarksemi.com)