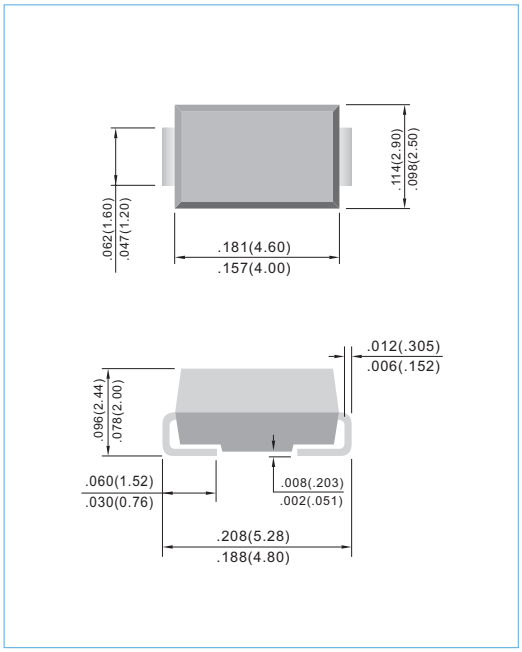
# 1SMA4741~1SMA4754

## SURFACE MOUNT SILICON ZENER DIODE

**VOLTAGE** 11 to 39 Volts **POWER** 1.0 Watts

**SMA/DO-214AC** Unit: inch (mm)




### FEATURES

- For surface mounted applications in order to optimize board space.
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Typical $I_R$ less than 5.0μA above 11V
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals
- Both normal and Pb free product are available :
  Normal : 80~95% Sn, 5~20% Pb
  Pb free: 98.5% Sn above

### MECHANICALDATA

Case: JEDEC DO-214AC,Molded plastic over passivated junction.
Terminals: Solder plated,solderable per MIL-STD-750, Method 2026
Polarity: Color band denotes positive end (cathode)
Standard Packaging:12mm tape (EIA-481)
Weight: 0.002 ounce, 0.064 gram

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Units |
|---|---|---|---|
| Pwak Pulse Power Dissipation on $T_L$= 7 5° C (NOTES A) | $P_D$ | 1.0 | W atts |
| Operating Junction and Storage Temperature Range | $T_J$,$T_{STG}$ | -55 to + 150 | °C |

NOTES:
A. Mounted on 5.0mm2 (.013mm thick) land areas.
B. Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of ± 5%.

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| Part Number | Nominal Zener Voltage | | | Maximum Zener Impedance | | | | Leakage Current | | Marking Code |
|---|---|---|---|---|---|---|---|---|---|---|
| | $V_Z$ @ $I_{ZT}$ | | | $Z_{ZT}$ @ $I_{ZT}$ | $I_{ZT}$ | $Z_{ZK}$ @ $I_{ZK}$ | $I_{ZK}$ | $I_R$ @$V_R$ | | |
| | Nom. V | Min. V | Max. V | Ohms | mA | Ohms | mA | uA | V | |
| 1.0 Watt ZENER | | | | | | | | | | |
| 1SMA4741 | 11 | 10.5 | 11.6 | 8.0 | 23.0 | 700 | 0.25 | 0.1 | 8.4 | 741B |
| 1SMA4742 | 12 | 11.4 | 12.6 | 9.0 | 21.0 | 700 | 0.25 | 0.1 | 9.1 | 742B |
| 1SMA4743 | 13 | 12.4 | 13.7 | 10.0 | 19.0 | 700 | 0.25 | 0.1 | 9.9 | 743B |
| 1SMA4744 | 15 | 14.3 | 15.8 | 14.0 | 17.0 | 700 | 0.25 | 0.1 | 11.4 | 744B |
| 1SMA4745 | 16 | 15.2 | 16.8 | 16.0 | 15.5 | 700 | 0.25 | 0.1 | 12.2 | 745B |
| 1SMA4746 | 18 | 17.1 | 18.9 | 20.0 | 14.0 | 750 | 0.25 | 0.1 | 13.7 | 746B |
| 1SMA4747 | 20 | 19.0 | 21.0 | 22.0 | 12.5 | 750 | 0.25 | 0.1 | 15.2 | 747B |
| 1SMA4748 | 22 | 20.9 | 23.1 | 23.0 | 11.5 | 750 | 0.25 | 0.1 | 16.7 | 748B |
| 1SMA4749 | 24 | 22.8 | 25.2 | 25.0 | 10.5 | 750 | 0.25 | 0.1 | 18.2 | 749B |
| 1SMA4750 | 27 | 25.7 | 28.4 | 35.0 | 9.5 | 750 | 0.25 | 0.1 | 20.6 | 750B |
| 1SMA4751 | 30 | 28.5 | 31.5 | 40.0 | 8.5 | 1000 | 0.25 | 0.1 | 22.8 | 751B |
| 1SMA4752 | 33 | 31.4 | 34.7 | 45.0 | 7.5 | 1000 | 0.25 | 0.1 | 25.1 | 752B |
| 1SMA4753 | 36 | 34.2 | 37.8 | 50.0 | 7.0 | 1000 | 0.25 | 0.1 | 27.4 | 753B |
| 1SMA4754 | 39 | 37.1 | 41.0 | 60.0 | 6.5 | 1000 | 0.25 | 0.1 | 29.7 | 754B |

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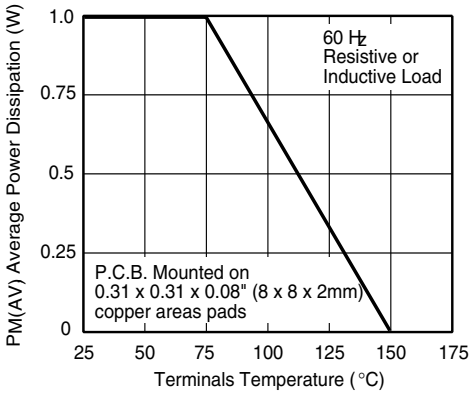


**FIGURE 1 -** Maximum Continuous Power Dissipation

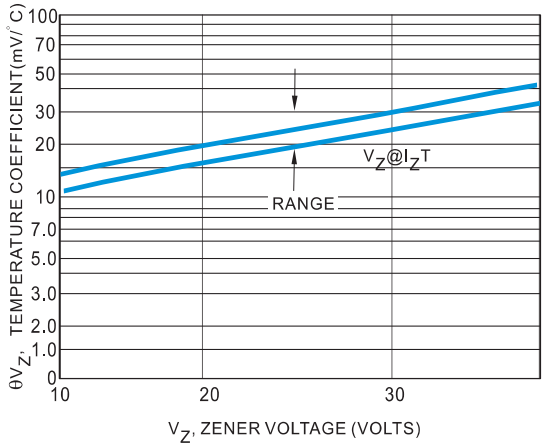


**FIGURE 2 - TEMPERATURE COEFICIENTS**

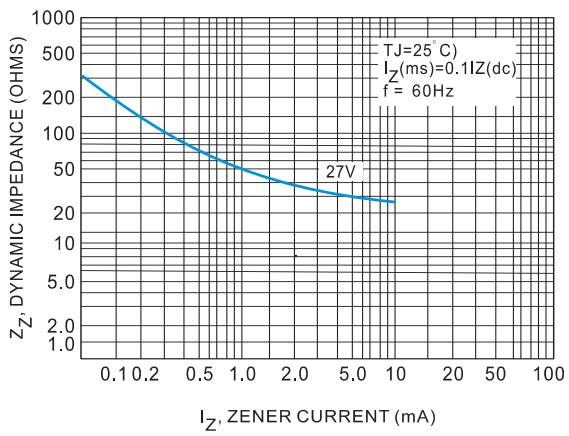


**FIGURE 3 -EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE**

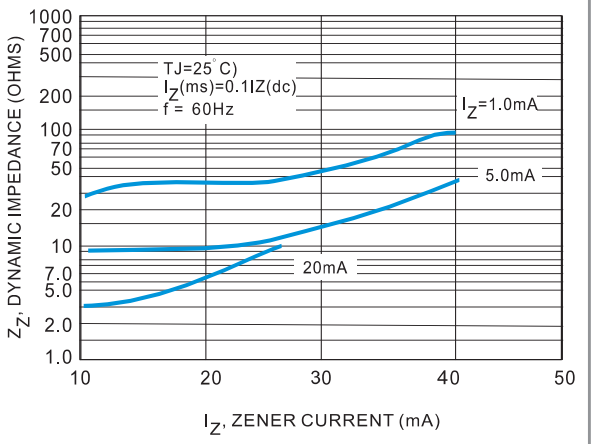


**FIGURE 4 -EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE**

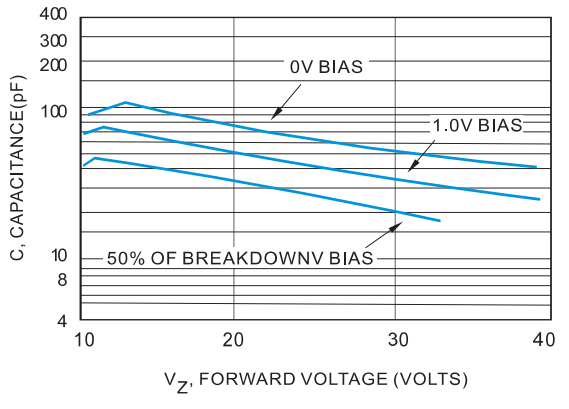


**FIGURE 5 - TYPICAL CAPACITANCE versus $V_z$**

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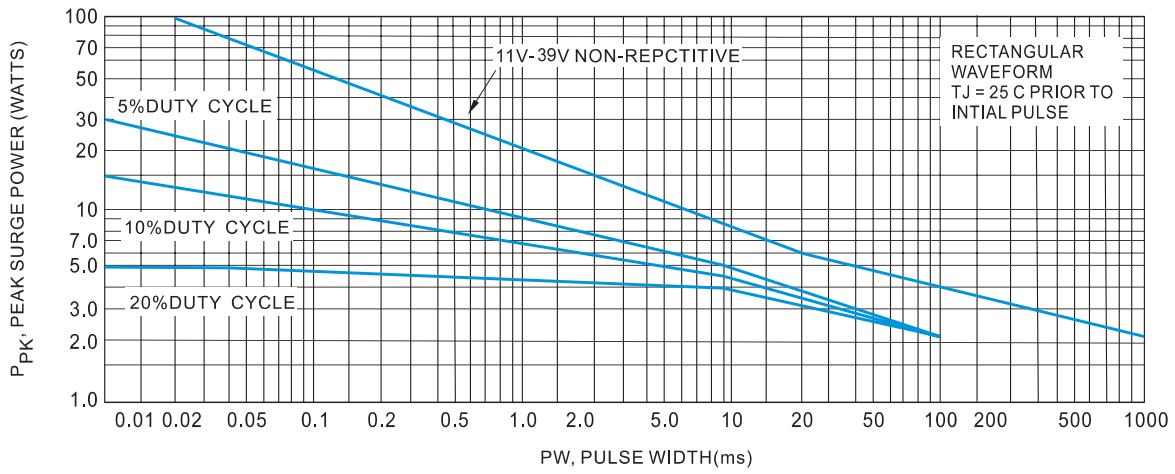


This graph represents 90 percentile data points.
FOR worst-case design characteristics, multiply surge power by 2/3

**FIGURE 6 - MAXIMUM SURGE POWER**