



SMAG Plastic-Encapsulate Diodes

1SMA47 SERIES Zener Diodes

Features

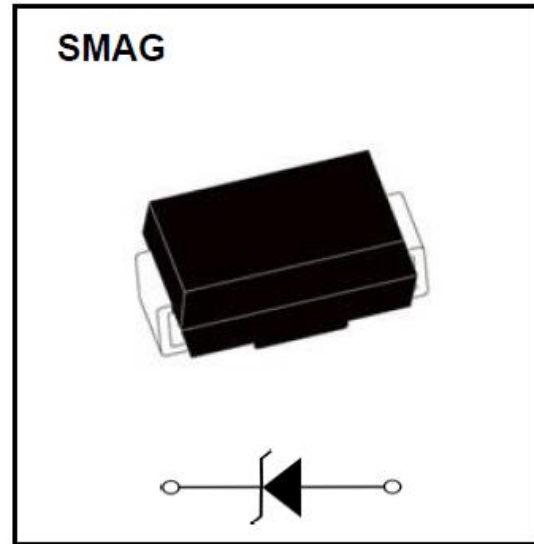
- Pd 1.0W.
- Vz 3.0V-300V.
- Range 5%.
- AEC Q101 Qualified.

Application

- Stabilizing Voltage.

Marking

- 1SMA47XXA
- XX : From 27 To 64 (Vz<100V)
- 1SZ1XXXXA
- XXX : From 110 To 300 (Vz>100V)



ABSOLUTE MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

| Item | Symbol | Unit | Conditions | Max |
|------------------------------|------------------|------|-----------------------|--------------------------------|
| Power dissipation | P _d | W | T _L =75°C | 1.0 |
| Zener current | I _z | mA | | P _V /V _Z |
| Maximum junction temperature | T _j | °C | | -65 to +150 |
| Storage temperature range | T _{stg} | °C | | -65 to +150 |
| Forward voltage | V _F | V | I _F =200mA | 1.2 |

ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise noted)

| Part Number | Nominal Zener Voltage | | Maximum Zener Impedance | | | Maximum Reverse Leakage Current | | Maximum DC Zener Current | Maximum Surge Current |
|-------------|----------------------------------|-----------------|-----------------------------------|-----------------------------------|-----------------|---------------------------------|-------|--------------------------|-----------------------|
| | V _Z @ I _{ZT} | I _{ZT} | Z _{ZT} @ I _{ZT} | Z _{ZK} @ I _{ZK} | I _{ZK} | I _R @ V _R | | I _{ZM} | I _{RM} |
| | (V) | (mA) | (Ω) | (Ω) | (mA) | (uA) | (V) | (mA) | (mApk) |
| 1SMA4727A | 3.0 | 83.0 | 10.0 | 400 | 1.00 | 150.0 | 1.0 | 274.0 | 1370 |
| 1SMA4728A | 3.3 | 76.0 | 10.0 | 400 | 1.00 | 100.0 | 1.0 | 274.0 | 1370 |
| 1SMA4729A | 3.6 | 69.0 | 10.0 | 400 | 1.00 | 100.0 | 1.0 | 251.0 | 1255 |
| 1SMA4730A | 3.9 | 64.0 | 9.0 | 400 | 1.00 | 50.0 | 1.0 | 232.0 | 1160 |
| 1SMA4731A | 4.3 | 58.0 | 9.0 | 400 | 1.00 | 20.0 | 1.0 | 210.0 | 1050 |
| 1SMA4732A | 4.7 | 53.0 | 8.0 | 500 | 1.00 | 10.0 | 1.0 | 192.0 | 960 |
| 1SMA4733A | 5.1 | 49.0 | 7.0 | 550 | 1.00 | 10.0 | 1.0 | 177.0 | 885 |
| 1SMA4734A | 5.6 | 45.0 | 5.0 | 600 | 1.00 | 10.0 | 2.0 | 161.0 | 805 |
| 1SMA4735A | 6.2 | 41.0 | 2.0 | 700 | 1.00 | 10.0 | 3.0 | 146.0 | 730 |
| 1SMA4736A | 6.8 | 37.0 | 3.5 | 700 | 1.00 | 5.0 | 4.0 | 133.0 | 660 |
| 1SMA4737A | 7.5 | 34.0 | 4.0 | 700 | 0.50 | 5.0 | 5.0 | 121.0 | 605 |
| 1SMA4738A | 8.2 | 31.0 | 4.5 | 700 | 0.50 | 5.0 | 6.0 | 110.0 | 550 |
| 1SMA4739A | 9.1 | 28.0 | 5.0 | 700 | 0.50 | 0.5 | 7.0 | 100.0 | 500 |
| 1SMA4740A | 10.0 | 25.0 | 7.0 | 700 | 0.25 | 0.5 | 7.6 | 91.0 | 454 |
| 1SMA4741A | 11.0 | 23.0 | 8.0 | 700 | 0.25 | 0.1 | 8.4 | 83.0 | 414 |
| 1SMA4742A | 12.0 | 21.0 | 9.0 | 700 | 0.25 | 0.1 | 9.1 | 76.0 | 380 |
| 1SMA4743A | 13.0 | 19.0 | 10.0 | 700 | 0.25 | 0.1 | 9.9 | 69.0 | 344 |
| 1SMA4744A | 15.0 | 17.0 | 14.0 | 700 | 0.25 | 0.1 | 11.4 | 61.0 | 305 |
| 1SMA4745A | 16.0 | 15.5 | 16.0 | 700 | 0.25 | 0.1 | 12.2 | 57.0 | 285 |
| 1SMA4746A | 18.0 | 14.0 | 20.0 | 750 | 0.25 | 0.1 | 13.7 | 50.0 | 250 |
| 1SMA4747A | 20.0 | 12.5 | 22.0 | 750 | 0.25 | 0.1 | 15.2 | 45.0 | 225 |
| 1SMA4748A | 22.0 | 11.5 | 23.0 | 750 | 0.25 | 0.1 | 16.7 | 41.0 | 205 |
| 1SMA4749A | 24.0 | 10.5 | 25.0 | 750 | 0.25 | 0.1 | 18.2 | 38.0 | 190 |
| 1SMA4750A | 27.0 | 9.5 | 35.0 | 750 | 0.25 | 0.1 | 20.6 | 34.0 | 170 |
| 1SMA4751A | 30.0 | 8.5 | 40.0 | 1000 | 0.25 | 0.1 | 22.8 | 30.0 | 150 |
| 1SMA4752A | 33.0 | 7.5 | 45.0 | 1000 | 0.25 | 0.1 | 25.1 | 27.0 | 135 |
| 1SMA4753A | 36.0 | 7.0 | 50.0 | 1000 | 0.25 | 0.1 | 27.4 | 25.0 | 125 |
| 1SMA4754A | 39.0 | 6.5 | 60.0 | 1000 | 0.25 | 0.1 | 29.7 | 23.0 | 115 |
| 1SMA4755A | 43.0 | 6.0 | 70.0 | 1500 | 0.25 | 0.1 | 32.7 | 22.0 | 110 |
| 1SMA4756A | 47.0 | 5.5 | 80.0 | 1500 | 0.25 | 0.1 | 35.8 | 19.0 | 95 |
| 1SMA4757A | 51.0 | 5.0 | 95.0 | 1500 | 0.25 | 0.1 | 38.8 | 18.0 | 90 |
| 1SMA4758A | 56.0 | 4.5 | 110.0 | 2000 | 0.25 | 0.1 | 42.6 | 16.0 | 80 |
| 1SMA4759A | 62.0 | 4.0 | 125.0 | 2000 | 0.25 | 0.1 | 47.1 | 14.0 | 70 |
| 1SMA4760A | 68.0 | 3.7 | 150.0 | 2000 | 0.25 | 0.1 | 51.7 | 13.0 | 65 |
| 1SMA4761A | 75.0 | 3.3 | 175.0 | 2000 | 0.25 | 0.1 | 56.0 | 12.0 | 60 |
| 1SMA4762A | 82.0 | 3.0 | 200.0 | 3000 | 0.25 | 0.1 | 62.2 | 11.0 | 55 |
| 1SMA4763A | 91.0 | 2.8 | 250.0 | 3000 | 0.25 | 0.1 | 69.2 | 10.0 | 50 |
| 1SMA4764A | 100.0 | 2.5 | 350.0 | 3000 | 0.25 | 0.1 | 76.0 | 9.0 | 45 |
| 1SZ1110A | 110.0 | 2.3 | 450.0 | 4000 | 0.25 | 0.1 | 83.6 | 8.6 | 40 |
| 1SZ1120A | 120.0 | 2.0 | 550.0 | 4500 | 0.25 | 0.1 | 91.2 | 7.8 | 37 |
| 1SZ1130A | 130.0 | 1.9 | 700.0 | 5000 | 0.25 | 0.1 | 98.8 | 7.0 | 34 |
| 1SZ1150A | 150.0 | 1.7 | 1000.0 | 6000 | 0.25 | 0.1 | 114.0 | 6.4 | 30 |
| 1SZ1160A | 160.0 | 1.6 | 1100.0 | 6500 | 0.25 | 0.1 | 121.6 | 5.8 | 28 |
| 1SZ1180A | 180.0 | 1.4 | 1200.0 | 7000 | 0.25 | 0.1 | 136.8 | 5.2 | 25 |
| 1SZ1200A | 200.0 | 1.2 | 1900.0 | 9990 | 0.25 | 0.1 | 152.0 | 4.7 | 22 |
| 1SZ1220A | 220.0 | 1.0 | 1600.0 | 8000 | 0.25 | 0.1 | 167.2 | 4.0 | 20 |
| 1SZ1240A | 240.0 | 0.9 | 1800.0 | 8500 | 0.25 | 0.1 | 182.4 | 3.8 | 19 |
| 1SZ1250A | 250.0 | 0.9 | 2000.0 | 9000 | 0.25 | 0.1 | 190.0 | 3.6 | 18 |
| 1SZ1270A | 270.0 | 0.8 | 2100.0 | 9000 | 0.25 | 0.1 | 205.0 | 3.3 | 16 |
| 1SZ1300A | 300.0 | 0.8 | 2300.0 | 9500 | 0.25 | 0.1 | 228.0 | 3.0 | 15 |

Typical Characteristics

FIG1: Maximum Continuous Power Dissipation

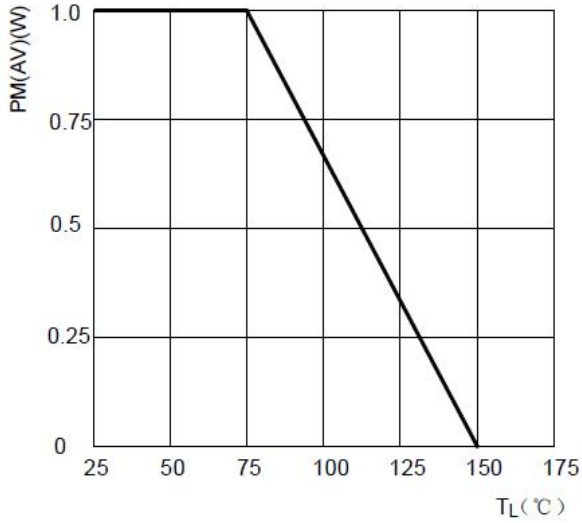


FIG2: Typical Zener Impedance

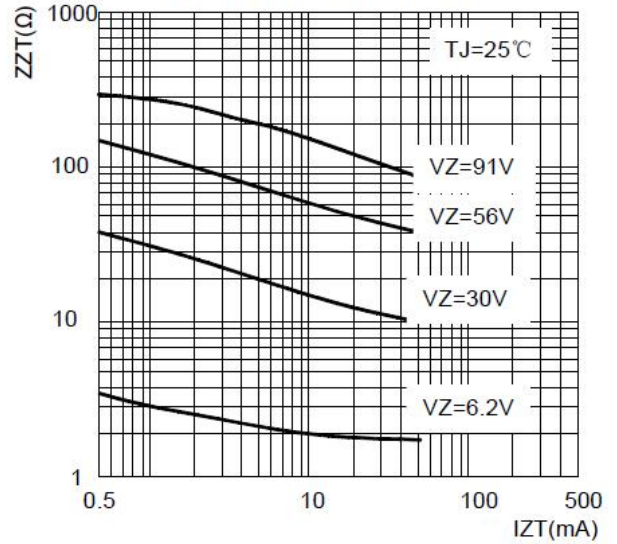


FIG3: Typical Temperature Coefficients

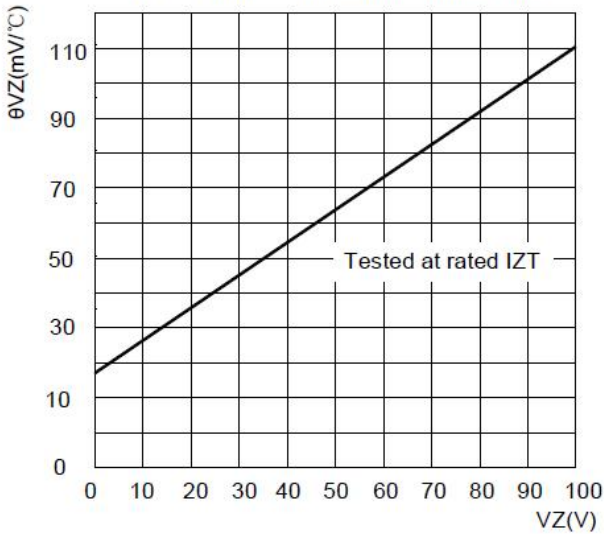


FIG4: Typical Instantaneous Forward Characteristics for SMA4763A

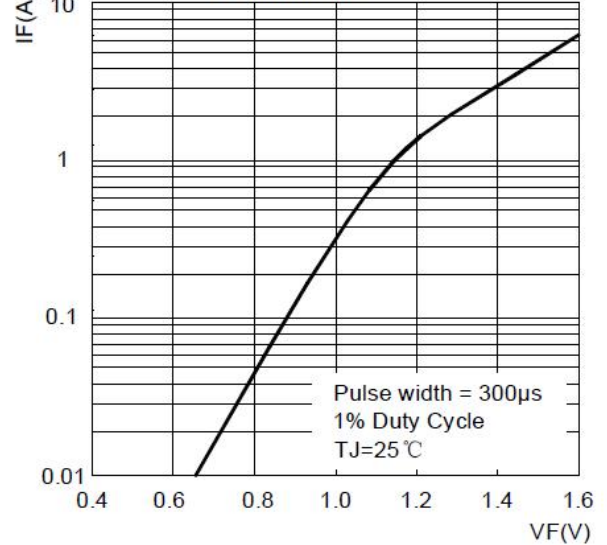
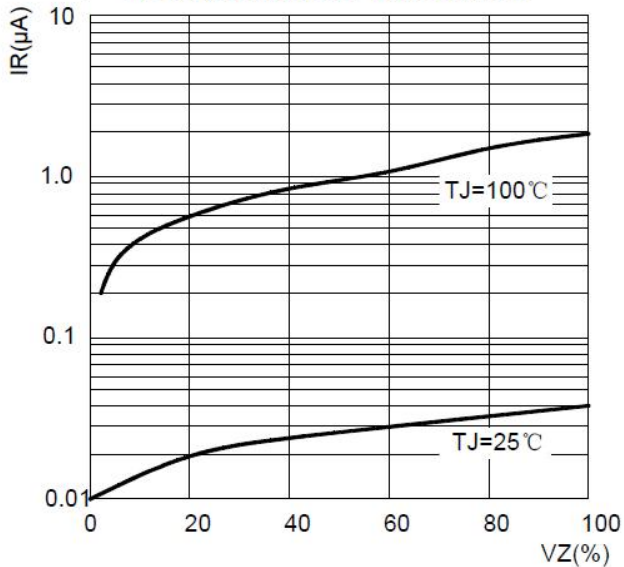
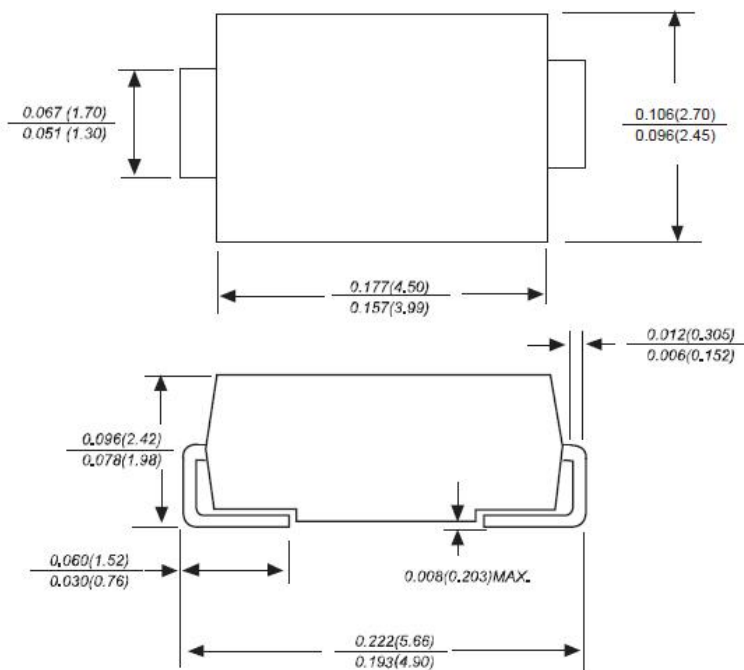


FIG5: Typical Reverse Characteristics

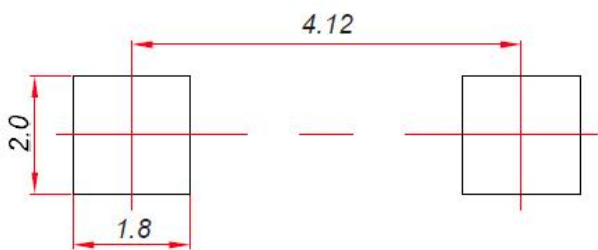


SMAG Package Outline Dimensions



Dimensions in inches and (millimeters)

SMAG Suggested Pad Layout



Note:

1. Controlling dimension: In millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.

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Reel Taping Specifications For Surface Mount Devices- SMAG

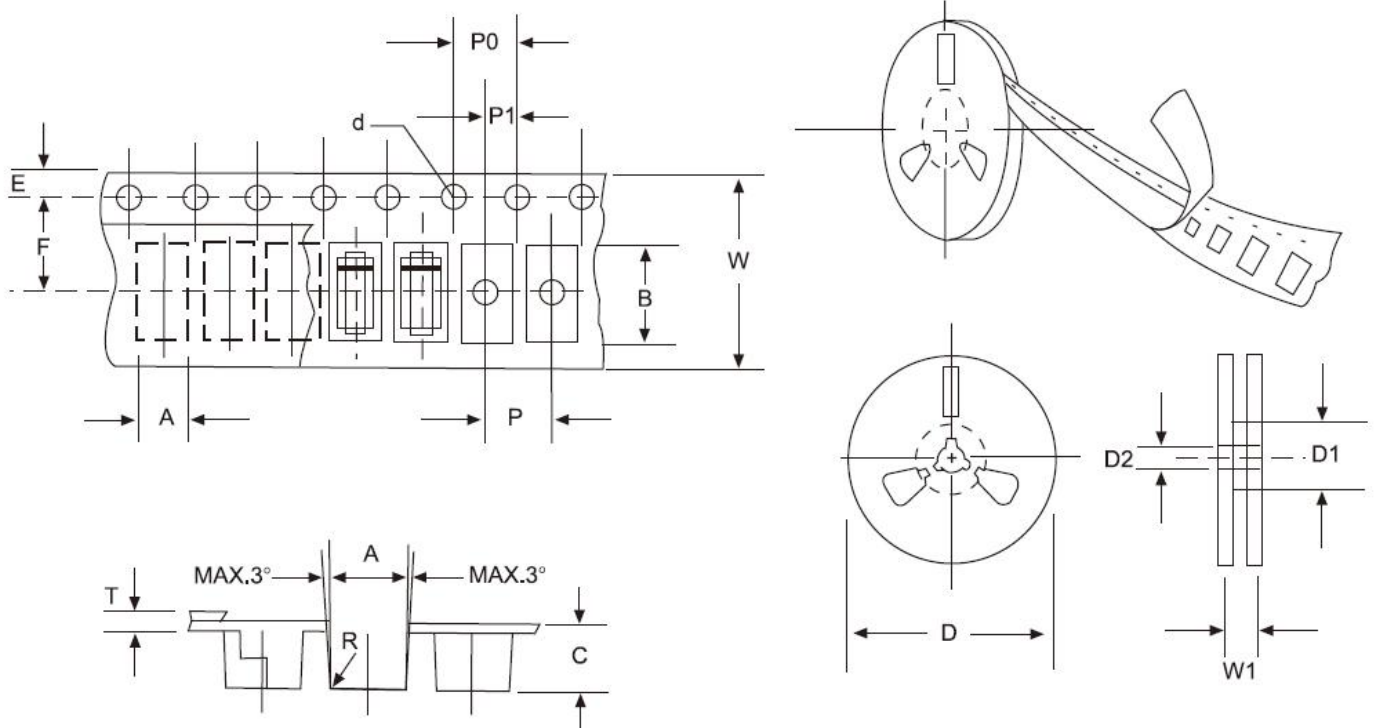


FIG : CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

| ITEM | SYMBOL | SMAG mm(inch) |
|------------------------|--------|-------------------------|
| Carrier width | A | 2.79±0.1(0.110±0.004) |
| Carrier length | B | 5.33±0.1(0.210±0.004) |
| Carrier depth | C | 2.36±0.1(0.093±0.004) |
| Sprocket hole | d | 1.55±0.05(0.061±0.002) |
| Reel outside diameter | D | 279±2.0 (11± 0.079) |
| Reel inner diameter | D1 | 75 ±1.0 (2.95 ±0.039) |
| Feed hole diameter | D2 | 13±0.5(0.512±0.020) |
| Sprocket hole position | E | 1.75±0.1(0.069±0.004) |
| Punch hole position | F | 5.5±0.05(0.217±0.002) |
| Punch hole pitch | P | 4.0±0.1(0.157±0.004) |
| Sprocket hole pitch | P0 | 4.0±0.1(0.157±0.004) |
| Embossment center | P1 | 2.0±0.1(0.079±0.004) |
| Total tape thickness | T | 0.28±0.02(0.011±0.0008) |
| Tape width | W | 12.0±0.2(0.472±0.008) |
| Reel width | W1 | 16.8±2.0(0.661±0.079) |

NOTE: Devices are packed in accordance with EIA standard RS-481-A and specification given above.

| Date of change | Rev # | revise content |
|----------------|-------|----------------|
| 2023/2/23 | A/0 | / |
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