## Electrical Characteristics (@ $T_A$ = 25 °C Unless Otherwise Noted)

| Unidirectional Device | | Bidirectional Device | | Breakdown Voltage $V_{BR}$ (Volts) | | | Working Peak Reverse Voltage | Maximum Reverse Leakage @ $V_{RWM}$ | Maximum Clamping Voltage @ $I_{pp}$ (10/1000 μs) | Maximum Peak Pulse Current (10/1000 μs) | Maximum Clamping Voltage @ $I_{pp}$ (8/20 μs) | Maximum Peak Pulse Current (8/20 μs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Part No. | Marking | Part No. | Marking | Min. | Max. | @ $I_T$ (mA) | $V_{RWM}$ (V) | $I_R$ (μA) | $V_C$ (V) | $I_{pp}$ (A) | $V_C$ (V) | $I_{pp}$ (A) |
| P4SMA6.8A | 6V8A | P4SMA6.8CA | 6V8C | 6.45 | 7.14 | 10 | 5.8 | 1000 | 10.5 | 39 | 14 | 195 |
| P4SMA7.5A | 7V5A | P4SMA7.5CA | 7V5C | 7.13 | 7.88 | 10 | 6.4 | 500 | 11.3 | 36.3 | 14.7 | 181.5 |
| P4SMA8.2A | 8V2A | P4SMA8.2CA | 8V2C | 7.79 | 8.61 | 10 | 7.02 | 200 | 12.1 | 33.9 | 15.7 | 169.5 |
| P4SMA9.1A | 9V1A | P4SMA9.1CA | 9V1C | 8.65 | 9.55 | 1 | 7.78 | 50 | 13.4 | 30.6 | 17.4 | 153.0 |
| P4SMA10A | 10A | P4SMA10CA | 10C | 9.5 | 10.5 | 1 | 8.55 | 10 | 14.5 | 28.3 | 18.9 | 141.5 |
| P4SMA11A | 11A | P4SMA11CA | 11C | 10.5 | 11.6 | 1 | 9.4 | 5 | 15.6 | 26.3 | 20.3 | 131.5 |
| P4SMA12A | 12A | P4SMA12CA | 12C | 11.4 | 12.6 | 1 | 10.2 | 5 | 16.7 | 24.6 | 21.7 | 123.0 |
| P4SMA13A | 13A | P4SMA13CA | 13C | 12.4 | 13.7 | 1 | 11.1 | 1 | 18.2 | 22.5 | 23.7 | 112.5 |
| P4SMA15A | 15A | P4SMA15CA | 15C | 14.3 | 15.8 | 1 | 12.8 | 1 | 21.2 | 19.3 | 27.6 | 96.5 |
| P4SMA16A | 16A | P4SMA16CA | 16C | 15.2 | 16.8 | 1 | 13.6 | 1 | 22.5 | 18.2 | 29.3 | 91.0 |
| P4SMA18A | 18A | P4SMA18CA | 18C | 17.1 | 18.9 | 1 | 15.3 | 1 | 25.5 | 16.1 | 33.2 | 80.5 |
| P4SMA20A | 20A | P4SMA20CA | 20C | 19 | 21 | 1 | 17.1 | 1 | 27.7 | 14.8 | 36.0 | 74.0 |
| P4SMA22A | 22A | P4SMA22CA | 22C | 20.9 | 23.1 | 1 | 18.8 | 1 | 30.6 | 13.4 | 39.8 | 67.0 |
| P4SMA24A | 24A | P4SMA24CA | 24C | 22.8 | 25.2 | 1 | 20.5 | 1 | 33.2 | 12.3 | 43.2 | 61.5 |
| P4SMA27A | 27A | P4SMA27CA | 27C | 25.7 | 28.4 | 1 | 23.1 | 1 | 37.5 | 10.9 | 48.8 | 54.5 |
| P4SMA30A | 30A | P4SMA30CA | 30C | 28.5 | 31.5 | 1 | 25.6 | 1 | 41.4 | 9.9 | 53.8 | 49.5 |
| P4SMA33A | 33A | P4SMA33CA | 33C | 31.4 | 34.7 | 1 | 28.2 | 1 | 45.7 | 9 | 59 | 45 |
| P4SMA36A | 36A | P4SMA36CA | 36C | 34.2 | 37.8 | 1 | 30.8 | 1 | 49.9 | 8.2 | 64.9 | 41.0 |
| P4SMA39A | 39A | P4SMA39CA | 39C | 37.1 | 41 | 1 | 33.3 | 1 | 53.9 | 7.6 | 70.1 | 38.0 |
| P4SMA43A | 43A | P4SMA43CA | 43C | 40.9 | 45.2 | 1 | 36.8 | 1 | 59.3 | 6.9 | 77.1 | 34.5 |
| P4SMA47A | 47A | P4SMA47CA | 47C | 44.7 | 49.4 | 1 | 40.2 | 1 | 64.8 | 6.3 | 84.2 | 31.5 |
| P4SMA51A | 51A | P4SMA51CA | 51C | 48.5 | 53.6 | 1 | 43.6 | 1 | 70.1 | 5.8 | 91.1 | 29.0 |
| P4SMA56A | 56A | P4SMA56CA | 56C | 53.2 | 58.8 | 1 | 47.8 | 1 | 77 | 5.3 | 100.1 | 26.5 |
| P4SMA62A | 62A | P4SMA62CA | 62C | 58.9 | 65.1 | 1 | 53 | 1 | 85 | 4.8 | 110.5 | 24.0 |
| P4SMA68A | 68A | P4SMA68CA | 68C | 64.6 | 71.4 | 1 | 58.1 | 1 | 92 | 4.5 | 119.6 | 22.5 |
| P4SMA75A | 75A | P4SMA75CA | 75C | 71.3 | 78.8 | 1 | 64.1 | 1 | 103 | 4 | 134 | 20 |
| P4SMA82A | 82A | P4SMA82CA | 82C | 77.9 | 86.1 | 1 | 70.1 | 1 | 113 | 3.6 | 146.9 | 18.0 |
| P4SMA91A | 91A | P4SMA91CA | 91C | 86.5 | 95.5 | 1 | 77.8 | 1 | 125 | 3.3 | 162.5 | 16.5 |
| P4SMA100A | 100A | P4SMA100CA | 100C | 95 | 105 | 1 | 85.5 | 1 | 137 | 3 | 178 | 15 |
| P4SMA110A | 110A | P4SMA110CA | 110C | 105 | 116 | 1 | 94 | 1 | 152 | 2.7 | 197.6 | 13.5 |
| P4SMA120A | 120A | P4SMA120CA | 120C | 114 | 126 | 1 | 102 | 1 | 165 | 2.5 | 214.5 | 12.5 |
| P4SMA130A | 130A | P4SMA130CA | 130C | 124 | 137 | 1 | 111 | 1 | 179 | 2.3 | 232.7 | 11.5 |
| P4SMA150A | 150A | P4SMA150CA | 150C | 143 | 158 | 1 | 128 | 1 | 207 | 2 | 269 | 10 |
| P4SMA160A | 160A | P4SMA160CA | 160C | 152 | 168 | 1 | 136 | 1 | 219 | 1.9 | 284.7 | 9.5 |
| P4SMA170A | 170A | P4SMA170CA | 170C | 162 | 179 | 1 | 145 | 1 | 234 | 1.8 | 304.2 | 9.0 |
| P4SMA180A | 180A | P4SMA180CA | 180C | 171 | 189 | 1 | 154 | 1 | 246 | 1.7 | 319.8 | 8.5 |
| P4SMA200A | 200A | P4SMA200CA | 200C | 190 | 210 | 1 | 171 | 1 | 274 | 1.5 | 356.2 | 7.5 |
| P4SMA220A | 220A | P4SMA220CA | 220C | 209 | 231 | 1 | 185 | 1 | 328 | 1.3 | 426.4 | 6.5 |
| P4SMA250A | 250A | P4SMA250CA | 250C | 237 | 263 | 1 | 214 | 1 | 344 | 1.2 | 447.2 | 6.0 |
| P4SMA300A | 300A | P4SMA300CA | 300C | 285 | 315 | 1 | 256 | 1 | 414 | 1 | 538 | 5 |
| P4SMA350A | 350A | P4SMA350CA | 350C | 332 | 368 | 1 | 300 | 1 | 482 | 0.9 | 626.6 | 4.3 |
| P4SMA400A | 400A | P4SMA400CA | 400C | 380 | 420 | 1 | 342 | 1 | 548 | 0.8 | 712.4 | 3.8 |
| P4SMA440A | 440A | P4SMA440CA | 440C | 418 | 462 | 1 | 376 | 1 | 602 | 0.7 | 782.6 | 3.4 |
| P4SMA480A | 480A | P4SMA480CA | 480C | 456 | 504 | 1 | 408 | 1 | 658 | 0.6 | 855.4 | 3.1 |
| P4SMA510A | 510A | P4SMA510CA | 510C | 485 | 535 | 1 | 434 | 1 | 698 | 0.6 | 907.4 | 2.9 |
| P4SMA530A | 530A | P4SMA530CA | 530C | 503.5 | 556.5 | 1 | 477 | 1 | 725 | 0.6 | 942.5 | 2.8 |
| P4SMA540A | 540A | P4SMA540CA | 540C | 513 | 567 | 1 | 486 | 1 | 740 | 0.5 | 962.0 | 2.7 |
| P4SMA550A | 550A | P4SMA550CA | 550C | 522.5 | 577.5 | 1 | 495 | 1 | 760 | 0.5 | 988.0 | 2.6 |

Notes: 1. Suffix 'A' denotes a 5 % tolerance unidirectional device.
2. Suffix 'CA' denotes a 5 % tolerance bidirectional device.
3. For bidirectional devices with a $V_R$ of 10 volts or less, the $I_R$ limit is double.

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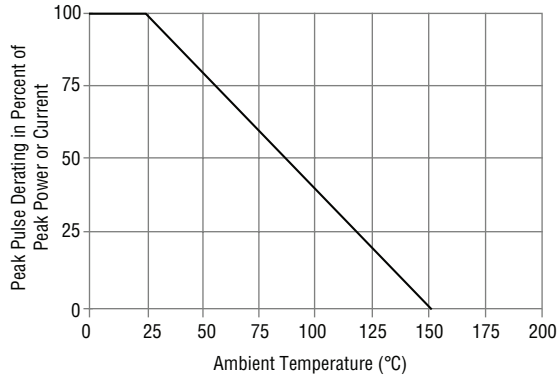
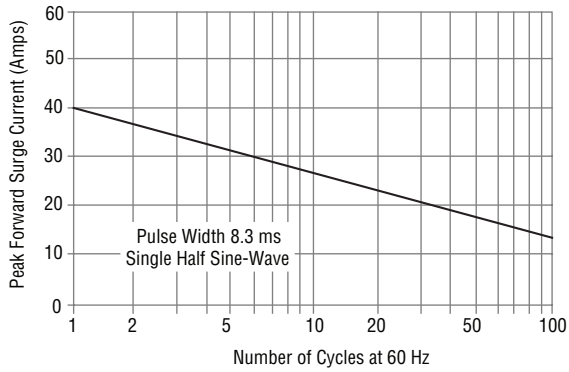
## Rating & Characteristic Curves

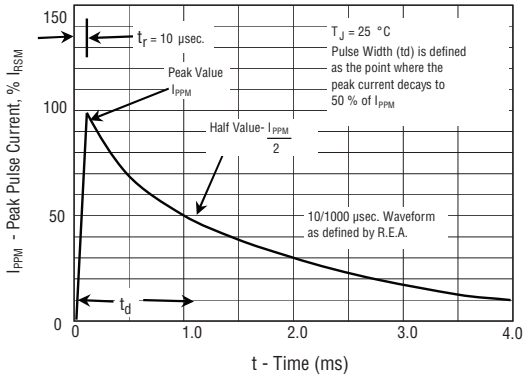
### Pulse Derating Curve



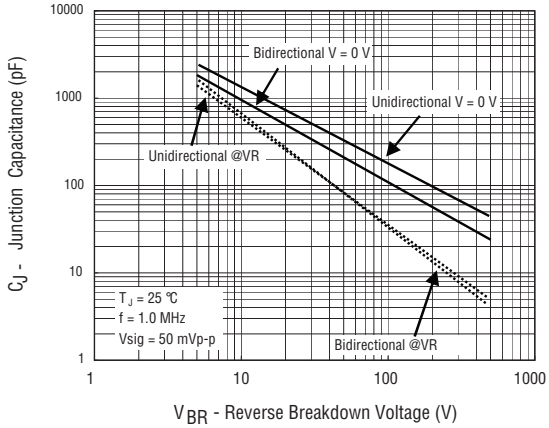

### Maximum Non-Repetitive Surge Current



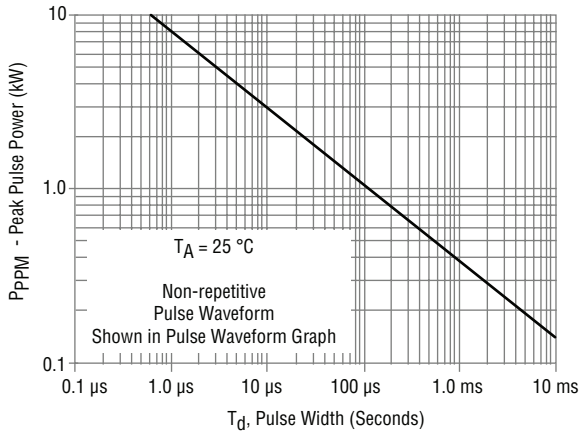

### Pulse Waveform



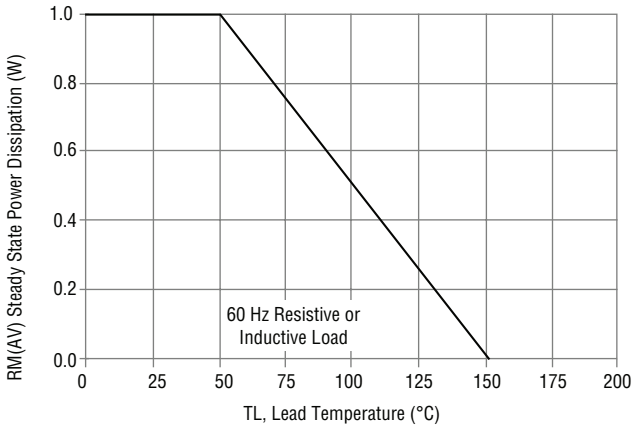

### Typical Junction Capacitance




### Pulse Rating Curve




### Steady State Power Derating Curve

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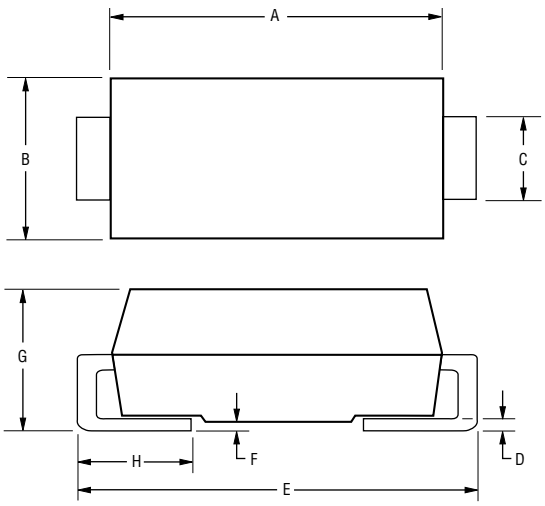
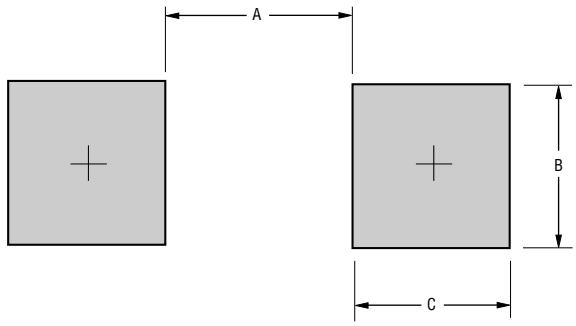
## Product Dimensions




| Dimension | SMA (DO-214AC) |
|---|---|
| A | 3.99 - 4.50 (0.157 - 0.177) |
| B | 2.54 - 2.79 (0.100 - 0.110) |
| C | 1.25 - 1.65 (0.049 - 0.065) |
| D | 0.15 - 0.31 (0.006 - 0.112) |
| E | 4.93 - 5.28 (0.194 - 0.208) |
| F | 0.203 (0.008) MAX. |
| G | 1.98 - 2.29 (0.078 - 0.090) |
| H | 0.76 - 1.52 (0.030 - 0.060) |

DIMENSIONS: MM (INCHES)

## Recommended Footprint




| Dimension | SMA (DO-214AC) |
|---|---|
| a (Max.) | 2.70 (0.106) |
| b (Min.) | 2.10 (0.083) |
| c (Min.) | 1.27 (0.050) |

DIMENSIONS: MM (INCHES)

## Physical Specifications

Case .....Molded plastic per UL Class 94V-0
Polarity..... Cathode band indicates unidirectional device
No cathode band indicates bidirectional device

## Environmental Specifications

Moisture Sensitivity Level .....1
ESD Classification (HBM)..... 3B

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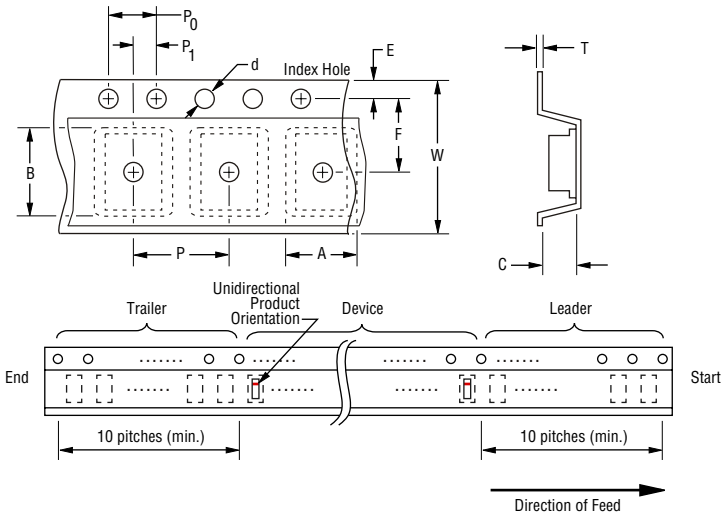
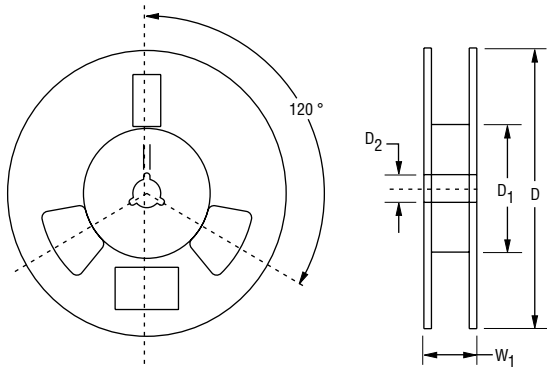
## Packaging Information

The product will be dispensed in tape and reel format (see diagram below).




DIMENSIONS: MM / (INCHES)

Devices are packed in accordance with EIA 481 standard specifications shown here.

| Item | Symbol | SMA (DO-214AC) | |
|---|---|---|---|
| | | 7 Inch Reel | 13 Inch Reel |
| Carrier Width | A | 2.90 ± 0.20 (0.114 ± 0.008) | |
| Carrier Length | B | 5.50 ± 0.20 (0.217 ± 0.008) | |
| Carrier Depth | C | 2.26 ± 0.20 (0.089 ± 0.008) | |
| Sprocket Hole | d | 1.50 ± 0.10 (0.061 ± 0.004) | |
| Reel Outside Diameter | D | 178 (7.008) | 330 (12.992) |
| Reel Inner Diameter | $D_1$ | 50.0 (1.969) MIN. | |
| Feed Hole Diameter | $D_2$ | 13.0 ± 0.20 (0.512 ± 0.008) | |
| Sprocket Hole Position | E | 1.75 ± 0.10 (0.069 ± 0.004) | |
| Punch Hole Position | F | 5.50 ± 0.05 (0.217 ± 0.002) | |
| Punch Hole Pitch | P | 4.00 ± 0.10 (0.157 ± 0.004) | |
| Sprocket Hole Pitch | $P_0$ | 4.00 ± 0.10 (0.157 ± 0.004) | |
| Embossment Center | $P_1$ | 2.00 ± 0.05 (0.079 ± 0.002) | |
| Overall Tape Thickness | T | 0.30 ± 0.10 (0.012 ± 0.004) | |
| Tape Width | W | 12.00 ± 0.30 (0.472 ± 0.012) | |
| Reel Width | $W_1$ | 18.4 (0.724) MAX. | |
| Quantity per Reel | -- | 1000 | 5,000 |

REV. 03/20

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