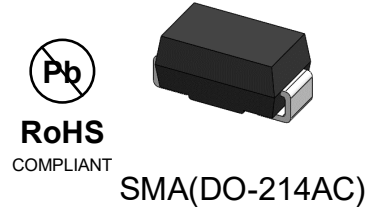


## 400W, 11 - 250V Transient Voltage Suppressors

### Features

- Very fast response time
- Glass passivated junction
- Moisture sensitivity: level 1, per J-STD-020
- Available in unidirectional and bidirectional
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21 definition
- 400 W peak pulse power capability with a 10/1000  $\mu$ s waveform



### Applications

- SMPS
- Adapters
- Monitor

| <b>Absolute Maximum Ratings</b> (TA=25°C unless otherwise noted) |                                   |                |      |
|--|-----------------------------------|----------------|------|
| Parameter  | Symbol                            | Ratings        | Unit |
| Peak power dissipation with a 10/1000us waveform                 | P <sub>PPM</sub>                  | 400            | W    |
| Peak pulse current with a 10/1000us waveform                     | I <sub>PPM</sub>                  | See Next Table | A    |
| Power dissipation, on infinite heat sink at T <sub>L</sub> =75°C | P <sub>D</sub>                    | 3              | W    |
| Peak forward surge current, 8.3ms single half-sine wave          | I <sub>FSM</sub>                  | 40             | A    |
| Typical Thermal Resistance , Junction to Ambient                 | R <sub>θJA</sub>                  | 90             | °C/W |
| Typical Thermal Resistance , Junction to Case                    | R <sub>θJC</sub>                  | 20             | °C/W |
| Typical Thermal Resistance , Junction to Lead                    | R <sub>θJL</sub>                  | 25             | °C/W |
| Operating junction and storage temperature range                 | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150    | °C   |

Note:

1. Mounted on copper pad area of 0.2x0.2" (5.0 x 5.0mm) to each terminal.

## Electrical Characteristics (TA = 25 °C unless otherwise noted)

| Part Number<br>(Uni) | Part Number<br>(Bi) | Marking |      | Breakdown<br>Voltage VBR<br>(Volts) |      | Test<br>Current<br>I <sub>r</sub><br>(mA) | Stand<br>off<br>Voltage<br>V <sub>WM</sub><br>(Volts) | Maximum<br>reverse<br>leakage<br>at V <sub>WM</sub><br>I <sub>D</sub><br>(μA) | Maximum<br>Peak<br>Pulse<br>Current<br>I <sub>ppM</sub><br>(A) | Maximum<br>Clamping<br>Voltage<br>at<br>I <sub>ppM</sub><br>V <sub>C</sub> (Volts) |
|----------------------|---------------------|---------|------|-------------------------------------|------|---|---|---|--|--|
|                      |                     | UNI     | BI   | Min                                 | Max  |   |   |   |  |  |
|                      |                     |         |      |                                     |      |   |   |   |  |  |
| P4SMA12A             | P4SMA12CA           | 12A     | 12C  | 11.4                                | 12.6 | 1.0                                       | 10.2  | 1.0   | 24.0   | 16.7   |
| P4SMA13A             | P4SMA13CA           | 13A     | 13C  | 12.4                                | 13.7 | 1.0                                       | 11.1  | 1.0   | 22.0   | 18.2   |
| P4SMA15A             | P4SMA15CA           | 15A     | 15C  | 14.3                                | 15.8 | 1.0                                       | 12.8  | 1.0   | 18.9   | 21.2   |
| P4SMA16A             | P4SMA16CA           | 16A     | 16C  | 15.2                                | 16.8 | 1.0                                       | 13.6  | 1.0   | 17.8   | 22.5   |
| P4SMA18A             | P4SMA18CA           | 18A     | 18C  | 17.1                                | 18.9 | 1.0                                       | 15.3  | 1.0   | 15.9   | 25.2   |
| P4SMA20A             | P4SMA20CA           | 20A     | 20C  | 19.0                                | 21.0 | 1.0                                       | 17.1  | 1.0   | 14.4   | 27.7   |
| P4SMA22A             | P4SMA22CA           | 22A     | 22C  | 20.9                                | 23.1 | 1.0                                       | 18.8  | 1.0   | 13.1   | 30.6   |
| P4SMA24A             | P4SMA24CA           | 24A     | 24C  | 22.8                                | 25.2 | 1.0                                       | 20.5  | 1.0   | 12.0   | 33.2   |
| P4SMA27A             | P4SMA27CA           | 27A     | 27C  | 25.7                                | 28.4 | 1.0                                       | 23.1  | 1.0   | 10.7   | 37.5   |
| P4SMA30A             | P4SMA30CA           | 30A     | 30C  | 28.5                                | 31.5 | 1.0                                       | 25.6  | 1.0   | 9.7  | 41.4   |
| P4SMA33A             | P4SMA33CA           | 33A     | 33C  | 31.4                                | 34.7 | 1.0                                       | 28.2  | 1.0   | 8.8  | 45.7   |
| P4SMA36A             | P4SMA36CA           | 36A     | 36C  | 34.2                                | 37.8 | 1.0                                       | 30.8  | 1.0   | 8.0  | 49.9   |
| P4SMA39A             | P4SMA39CA           | 39A     | 39C  | 37.1                                | 41.0 | 1.0                                       | 33.3  | 1.0   | 7.4  | 53.9   |
| P4SMA43A             | P4SMA43CA           | 43A     | 43C  | 40.9                                | 45.2 | 1.0                                       | 36.8  | 1.0   | 6.7  | 59.3   |
| P4SMA47A             | P4SMA47CA           | 47A     | 47C  | 44.7                                | 49.4 | 1.0                                       | 40.2  | 1.0   | 6.2  | 64.8   |
| P4SMA51A             | P4SMA51CA           | 51A     | 51C  | 48.5                                | 53.6 | 1.0                                       | 43.6  | 1.0   | 5.7  | 70.1   |
| P4SMA56A             | P4SMA56CA           | 56A     | 56C  | 53.2                                | 58.8 | 1.0                                       | 47.8  | 1.0   | 5.2  | 77.0   |
| P4SMA62A             | P4SMA62CA           | 62A     | 62C  | 58.9                                | 65.1 | 1.0                                       | 53.0  | 1.0   | 4.7  | 85.0   |
| P4SMA68A             | P4SMA68CA           | 68A     | 68C  | 64.6                                | 71.4 | 1.0                                       | 58.1  | 1.0   | 4.3  | 92.0   |
| P4SMA75A             | P4SMA75CA           | 75A     | 75C  | 71.3                                | 78.8 | 1.0                                       | 64.1  | 1.0   | 3.9  | 103  |
| P4SMA82A             | P4SMA82CA           | 82A     | 82C  | 77.9                                | 86.1 | 1.0                                       | 70.1  | 1.0   | 3.5  | 113  |
| P4SMA91A             | P4SMA91CA           | 91A     | 91C  | 86.5                                | 95.5 | 1.0                                       | 77.8  | 1.0   | 3.2  | 125  |
| P4SMA100A            | P4SMA100CA          | 100A    | 100C | 95                                  | 105  | 1.0                                       | 85.5  | 1.0   | 3.0  | 137  |
| P4SMA110A            | P4SMA110CA          | 110A    | 110C | 105                                 | 116  | 1.0                                       | 94.0  | 1.0   | 2.7  | 152  |
| P4SMA120A            | P4SMA120CA          | 120A    | 120C | 114                                 | 126  | 1.0                                       | 102   | 1.0   | 2.5  | 165  |
| P4SMA130A            | P4SMA130CA          | 130A    | 130C | 124                                 | 137  | 1.0                                       | 111   | 1.0   | 2.3  | 179  |
| P4SMA150A            | P4SMA150CA          | 150A    | 150C | 143                                 | 158  | 1.0                                       | 128   | 1.0   | 2.0  | 207  |
| P4SMA160A            | P4SMA160CA          | 160A    | 160C | 152                                 | 168  | 1.0                                       | 136   | 1.0   | 1.9  | 219  |
| P4SMA170A            | P4SMA170CA          | 170A    | 170C | 162                                 | 179  | 1.0                                       | 145   | 1.0   | 1.8  | 234  |
| P4SMA180A            | P4SMA180CA          | 180A    | 180C | 171                                 | 189  | 1.0                                       | 154   | 1.0   | 1.7  | 246  |
| P4SMA200A            | P4SMA200CA          | 200A    | 200C | 190                                 | 210  | 1.0                                       | 171   | 1.0   | 1.5  | 274  |
| P4SMA220A            | P4SMA220CA          | 220A    | 220C | 209                                 | 231  | 1.0                                       | 185   | 1.0   | 1.3  | 328  |
| P4SMA250A            | P4SMA250CA          | 250A    | 250C | 237                                 | 263  | 1.0                                       | 214   | 1.0   | 1.2  | 344  |

## Ratings and Characteristics Curves

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

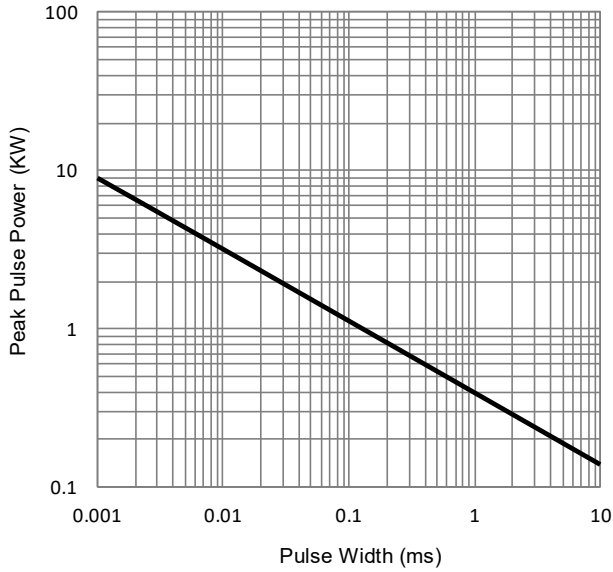


Fig.1 - Peak Pulse Power Derating Curve

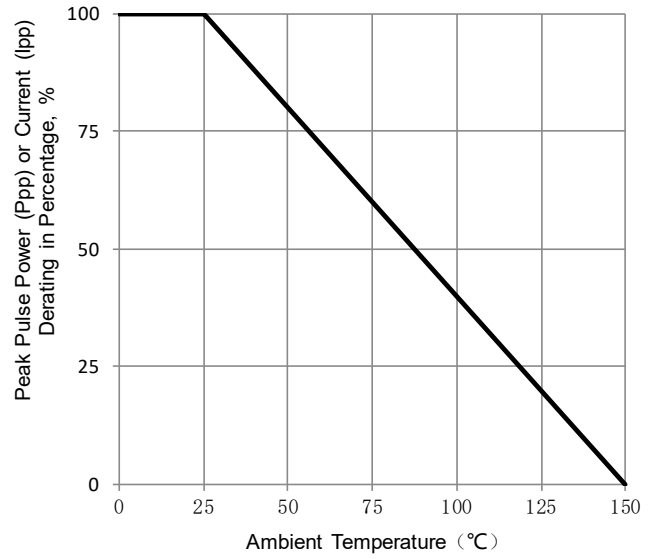


Fig.2 - Maximum Non-Repetitive Surge Current

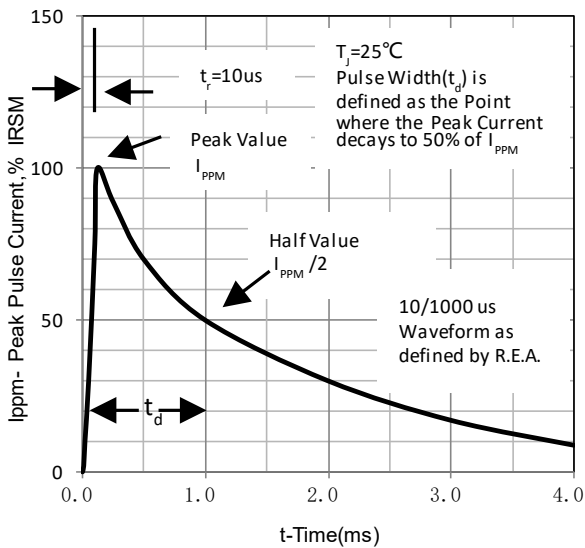


Fig.3 - Typical Forward Voltage Characteristics

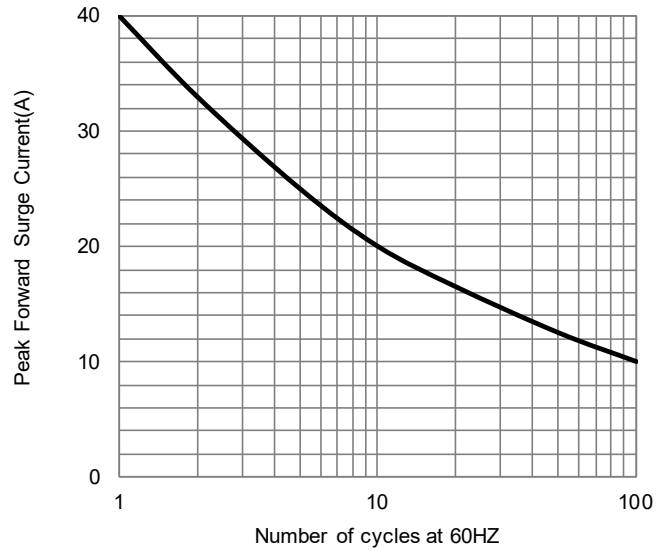
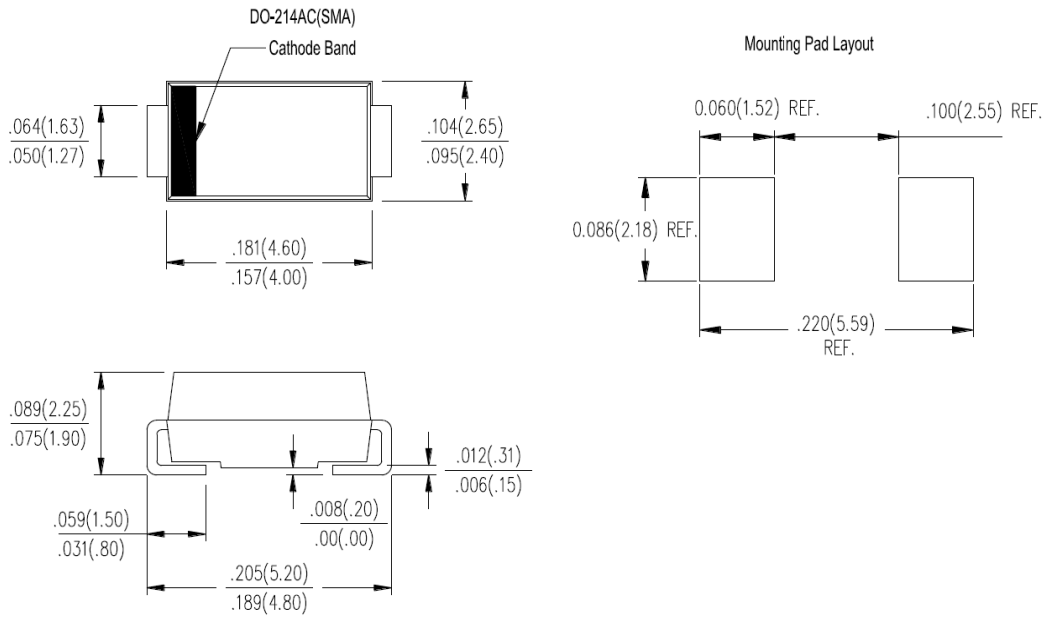


Fig.4 - Typical Reverse Current Characteristics

## Package Outline Dimensions

in inches (millimeters)

### SMA (DO-214AC)



## Revision History

| Document Version | Date of release | Description of changes |
|------------------|-----------------|------------------------|
| Rev.A            | 2021.06.15      | Released Datasheet     |
| Rev.B            | 2023.10.13      | Modify document format |
| Rev.C            | 2023.12.18      | Update product range   |



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