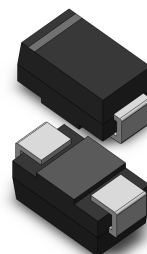


**VOLTAGE RANGE: 6.8 - 440 V**

**POWER: 400Watts**

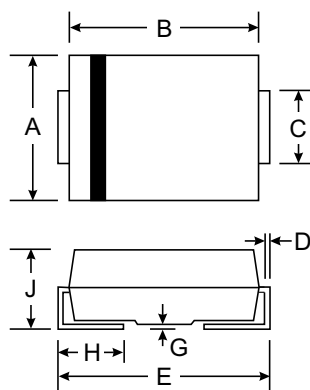
### Features

- Glass Passivated Die Construction
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Material: UL Flammability Classification Rating 94V-0



### Mechanical Data

- Case: SMA/DO-214AC, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.064 grams (approx.)



| SMA(DO-214AC)        |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 2.29 | 2.92 |
| B                    | 4.00 | 4.60 |
| C                    | 1.27 | 1.63 |
| D                    | 0.15 | 0.31 |
| E                    | 4.80 | 5.59 |
| G                    | 0.10 | 0.20 |
| H                    | 0.76 | 1.52 |
| J                    | 2.01 | 2.62 |
| All Dimensions in mm |      |      |

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                                                                                                         | Symbol         | Value       | Unit             |
|------------------------------------------------------------------------------------------------------------------------|----------------|-------------|------------------|
| Peak Pulse Power Dissipation<br>(Non repetitive current pulse derated above $T_A = 25^\circ\text{C}$ )<br>(Note 1)     | $P_{PK}$       | 400         | W                |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)<br>(Notes 1, 2, & 3) | $I_{FSM}$      | 40          | A                |
| Instantaneous Forward Voltage @ $I_{PP} = 35\text{A}$<br>(Notes 1, 2, & 3)                                             | $V_F$          | 3.5         | V                |
| Operating and Storage Temperature Range                                                                                | $T_j, T_{STG}$ | -55 to +150 | $^\circ\text{C}$ |

- Notes:
1. Valid provided that terminals are kept at ambient temperature.
  2. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
  3. Unidirectional units only.

| TYPE      |            | Reverse Stand-Off Voltage | Breakdown Voltage Min. @I <sub>T</sub> | Breakdown Voltage Max. @ I <sub>T</sub> | Test Current        | Maximum Clamping Voltage @I <sub>PP</sub> | Peak Pulse Current  | Reverse Leakage @V <sub>RWM</sub> |
|-----------|------------|---------------------------|----------------------------------------|-----------------------------------------|---------------------|-------------------------------------------|---------------------|-----------------------------------|
| (UNI)     | (BI)       | V <sub>RWM</sub> (V)      | V <sub>BR MIN</sub> (V)                | V <sub>BR MAX</sub> (V)                 | I <sub>T</sub> (mA) | V <sub>C</sub> (V)                        | I <sub>PP</sub> (A) | I <sub>R</sub> (uA)               |
| P4SMA6.8  | P4SMA6.8C  | 5.50                      | 6.12                                   | 7.48                                    | 10                  | 10.8                                      | 38.0                | 1000.0                            |
| P4SMA6.8A | P4SMA6.8CA | 5.80                      | 6.45                                   | 7.14                                    | 10                  | 10.5                                      | 40.0                | 1000.0                            |
| P4SMA7.5  | P4SMA7.5C  | 6.05                      | 6.75                                   | 8.25                                    | 10                  | 11.7                                      | 36.0                | 500.0                             |
| P4SMA7.5A | P4SMA7.5CA | 6.40                      | 7.13                                   | 7.88                                    | 10                  | 11.3                                      | 37.0                | 500.0                             |
| P4SMA8.2  | P4SMA8.2C  | 6.63                      | 7.38                                   | 9.02                                    | 10                  | 12.5                                      | 33.0                | 200.0                             |
| P4SMA8.2A | P4SMA8.2CA | 7.02                      | 7.79                                   | 8.61                                    | 10                  | 12.1                                      | 35.0                | 200.0                             |
| P4SMA9.1  | P4SMA9.1C  | 7.37                      | 8.19                                   | 10.0                                    | 1.0                 | 13.8                                      | 30.0                | 50.0                              |
| P4SMA9.1A | P4SMA9.1CA | 7.78                      | 8.65                                   | 9.55                                    | 1.0                 | 13.4                                      | 31.0                | 50.0                              |
| P4SMA10   | P4SMA10C   | 8.10                      | 9.00                                   | 11.0                                    | 1.0                 | 15.0                                      | 28.0                | 10.0                              |
| P4SMA10A  | P4SMA10CA  | 8.55                      | 9.50                                   | 10.5                                    | 1.0                 | 14.5                                      | 29.0                | 10.0                              |
| P4SMA11   | P4SMA11C   | 8.92                      | 9.90                                   | 12.1                                    | 1.0                 | 16.2                                      | 26.0                | 5.0                               |
| P4SMA11A  | P4SMA11CA  | 9.40                      | 10.5                                   | 11.6                                    | 1.0                 | 15.6                                      | 27.0                | 5.0                               |
| P4SMA12   | P4SMA12C   | 9.72                      | 10.8                                   | 13.2                                    | 1.0                 | 17.3                                      | 24.0                | 5.0                               |
| P4SMA12A  | P4SMA12CA  | 10.2                      | 11.4                                   | 12.6                                    | 1.0                 | 16.7                                      | 25.0                | 5.0                               |
| P4SMA13   | P4SMA13C   | 10.5                      | 11.7                                   | 14.3                                    | 1.0                 | 19.0                                      | 22.0                | 5.0                               |
| P4SMA13A  | P4SMA13CA  | 11.1                      | 12.4                                   | 13.7                                    | 1.0                 | 18.2                                      | 23.0                | 5.0                               |
| P4SMA15   | P4SMA15C   | 12.1                      | 13.5                                   | 16.5                                    | 1.0                 | 22.0                                      | 19.0                | 5.0                               |
| P4SMA15A  | P4SMA15CA  | 12.8                      | 14.3                                   | 15.8                                    | 1.0                 | 21.2                                      | 20.0                | 5.0                               |
| P4SMA16   | P4SMA16C   | 12.9                      | 14.4                                   | 17.6                                    | 1.0                 | 23.5                                      | 18.0                | 5.0                               |
| P4SMA16A  | P4SMA16CA  | 13.6                      | 15.2                                   | 16.8                                    | 1.0                 | 22.5                                      | 19.0                | 5.0                               |
| P4SMA18   | P4SMA18C   | 14.5                      | 16.2                                   | 19.8                                    | 1.0                 | 26.5                                      | 16.0                | 5.0                               |
| P4SMA18A  | P4SMA18CA  | 15.3                      | 17.1                                   | 18.9                                    | 1.0                 | 25.2                                      | 17.0                | 5.0                               |
| P4SMA20   | P4SMA20C   | 16.2                      | 18.0                                   | 22.0                                    | 1.0                 | 29.1                                      | 14.0                | 5.0                               |
| P4SMA20A  | P4SMA20CA  | 17.1                      | 19.0                                   | 21.0                                    | 1.0                 | 27.7                                      | 15.0                | 5.0                               |
| P4SMA22   | P4SMA22C   | 17.8                      | 19.8                                   | 24.2                                    | 1.0                 | 31.9                                      | 13.0                | 5.0                               |
| P4SMA22A  | P4SMA22CA  | 18.8                      | 20.9                                   | 23.1                                    | 1.0                 | 30.6                                      | 14.0                | 5.0                               |
| P4SMA24   | P4SMA24C   | 19.4                      | 21.6                                   | 26.4                                    | 1.0                 | 34.7                                      | 12.0                | 5.0                               |
| P4SMA24A  | P4SMA24CA  | 20.5                      | 22.8                                   | 25.2                                    | 1.0                 | 33.2                                      | 13.0                | 5.0                               |
| P4SMA27   | P4SMA27C   | 21.8                      | 24.3                                   | 29.7                                    | 1.0                 | 39.1                                      | 11.0                | 5.0                               |
| P4SMA27A  | P4SMA27CA  | 23.1                      | 25.7                                   | 28.4                                    | 1.0                 | 37.5                                      | 11.2                | 5.0                               |
| P4SMA30   | P4SMA30C   | 24.3                      | 27.0                                   | 33.0                                    | 1.0                 | 43.5                                      | 10.0                | 5.0                               |
| P4SMA30A  | P4SMA30CA  | 25.6                      | 28.5                                   | 31.5                                    | 1.0                 | 41.4                                      | 10.0                | 5.0                               |
| P4SMA33   | P4SMA33C   | 26.8                      | 29.7                                   | 36.3                                    | 1.0                 | 47.7                                      | 9.0                 | 5.0                               |
| P4SMA33A  | P4SMA33CA  | 28.2                      | 31.4                                   | 34.7                                    | 1.0                 | 45.7                                      | 9.0                 | 5.0                               |
| P4SMA36   | P4SMA36C   | 29.1                      | 32.4                                   | 39.6                                    | 1.0                 | 52.0                                      | 8.0                 | 5.0                               |
| P4SMA36A  | P4SMA36CA  | 30.8                      | 34.2                                   | 37.8                                    | 1.0                 | 49.9                                      | 8.4                 | 5.0                               |
| P4SMA39   | P4SMA39C   | 31.6                      | 35.1                                   | 42.9                                    | 1.0                 | 56.4                                      | 7.4                 | 5.0                               |
| P4SMA39A  | P4SMA39CA  | 33.3                      | 37.1                                   | 41.0                                    | 1.0                 | 53.9                                      | 7.8                 | 5.0                               |
| P4SMA43   | P4SMA43C   | 34.8                      | 38.7                                   | 47.3                                    | 1.0                 | 61.9                                      | 6.8                 | 5.0                               |
| P4SMA43A  | P4SMA43CA  | 36.8                      | 40.9                                   | 45.2                                    | 1.0                 | 59.3                                      | 7.1                 | 5.0                               |
| P4SMA47   | P4SMA47C   | 38.1                      | 42.3                                   | 51.7                                    | 1.0                 | 67.8                                      | 6.2                 | 5.0                               |
| P4SMA47A  | P4SMA47CA  | 40.8                      | 44.7                                   | 49.4                                    | 1.0                 | 64.8                                      | 5.0                 | 5.0                               |
| P4SMA51   | P4SMA51C   | 41.3                      | 45.9                                   | 56.1                                    | 1.0                 | 73.5                                      | 5.7                 | 5.0                               |
| P4SMA51A  | P4SMA51CA  | 43.6                      | 48.5                                   | 53.6                                    | 1.0                 | 70.1                                      | 6.0                 | 5.0                               |

| TYPE      |            | Reverse Stand-Off Voltage | Breakdown Voltage Min. @ I <sub>T</sub> | Breakdown Voltage Max. @ I <sub>T</sub> | Test Current        | Maximum Clamping Voltage @ I <sub>PP</sub> | Peak Pulse Current  | Reverse Leakage @ V <sub>RWM</sub> |
|-----------|------------|---------------------------|-----------------------------------------|-----------------------------------------|---------------------|--------------------------------------------|---------------------|------------------------------------|
| (UNI)     | (BI)       | V <sub>RWM</sub> (V)      | V <sub>BR MIN</sub> (V)                 | V <sub>BR MAX</sub> (V)                 | I <sub>T</sub> (mA) | V <sub>C</sub> (V)                         | I <sub>PP</sub> (A) | I <sub>R</sub> (uA)                |
| P4SMA56   | P4SMA56C   | 45.4                      | 50.4                                    | 61.6                                    | 1.0                 | 80.5                                       | 5.2                 | 5.0                                |
| P4SMA56A  | P4SMA56CA  | 47.8                      | 53.2                                    | 58.8                                    | 1.0                 | 77.0                                       | 5.5                 | 5.0                                |
| P4SMA62   | P4SMA62C   | 50.2                      | 55.8                                    | 68.2                                    | 1.0                 | 89.0                                       | 4.7                 | 5.0                                |
| P4SMA62A  | P4SMA62CA  | 53.0                      | 58.9                                    | 65.1                                    | 1.0                 | 85.0                                       | 5.0                 | 5.0                                |
| P4SMA68   | P4SMA68C   | 55.1                      | 61.2                                    | 74.8                                    | 1.0                 | 98.0                                       | 4.3                 | 5.0                                |
| P4SMA68A  | P4SMA68CA  | 58.1                      | 64.6                                    | 71.4                                    | 1.0                 | 92.0                                       | 4.6                 | 5.0                                |
| P4SMA75   | P4SMA75C   | 60.7                      | 67.5                                    | 82.5                                    | 1.0                 | 108                                        | 3.9                 | 5.0                                |
| P4SMA75A  | P4SMA75CA  | 64.1                      | 71.3                                    | 78.8                                    | 1.0                 | 103                                        | 4.1                 | 5.0                                |
| P4SMA82   | P4SMA82C   | 66.4                      | 73.8                                    | 90.2                                    | 1.0                 | 118                                        | 3.6                 | 5.0                                |
| P4SMA82A  | P4SMA82CA  | 70.4                      | 77.9                                    | 86.1                                    | 1.0                 | 113                                        | 3.7                 | 5.0                                |
| P4SMA91   | P4SMA91C   | 73.7                      | 81.9                                    | 100                                     | 1.0                 | 131                                        | 3.2                 | 5.0                                |
| P4SMA91A  | P4SMA91CA  | 77.8                      | 86.5                                    | 95.5                                    | 1.0                 | 125                                        | 3.4                 | 5.0                                |
| P4SMA100  | P4SMA100C  | 81.0                      | 90.0                                    | 110                                     | 1.0                 | 144                                        | 2.9                 | 5.0                                |
| P4SMA100A | P4SMA100CA | 85.5                      | 95.0                                    | 105                                     | 1.0                 | 137                                        | 3.1                 | 5.0                                |
| P4SMA110  | P4SMA110C  | 89.2                      | 99.0                                    | 121                                     | 1.0                 | 158                                        | 2.7                 | 5.0                                |
| P4SMA110A | P4SMA110CA | 94.0                      | 105                                     | 116                                     | 1.0                 | 152                                        | 2.8                 | 5.0                                |
| P4SMA120  | P4SMA120C  | 97.2                      | 108                                     | 132                                     | 1.0                 | 173                                        | 2.4                 | 5.0                                |
| P4SMA120A | P4SMA120CA | 102                       | 114                                     | 126                                     | 1.0                 | 165                                        | 2.5                 | 5.0                                |
| P4SMA130  | P4SMA130C  | 105                       | 117                                     | 143                                     | 1.0                 | 187                                        | 2.2                 | 5.0                                |
| P4SMA130A | P4SMA130CA | 111                       | 124                                     | 137                                     | 1.0                 | 179                                        | 2.3                 | 5.0                                |
| P4SMA150  | P4SMA150C  | 121                       | 135                                     | 165                                     | 1.0                 | 215                                        | 2.0                 | 5.0                                |
| P4SMA150A | P4SMA150CA | 128                       | 143                                     | 158                                     | 1.0                 | 207                                        | 2.0                 | 5.0                                |
| P4SMA160  | P4SMA160C  | 130                       | 144                                     | 176                                     | 1.0                 | 230                                        | 1.8                 | 5.0                                |
| P4SMA160A | P4SMA160CA | 136                       | 152                                     | 168                                     | 1.0                 | 219                                        | 1.9                 | 5.0                                |
| P4SMA170  | P4SMA170C  | 138                       | 153                                     | 187                                     | 1.0                 | 244                                        | 1.7                 | 5.0                                |
| P4SMA170A | P4SMA170CA | 145                       | 162                                     | 179                                     | 1.0                 | 234                                        | 1.8                 | 5.0                                |
| P4SMA180  | P4SMA180C  | 146                       | 162                                     | 198                                     | 1.0                 | 258                                        | 1.6                 | 5.0                                |
| P4SMA180A | P4SMA180CA | 154                       | 171                                     | 189                                     | 1.0                 | 246                                        | 1.7                 | 5.0                                |
| P4SMA200  | P4SMA200C  | 162                       | 180                                     | 220                                     | 1.0                 | 287                                        | 1.5                 | 5.0                                |
| P4SMA200A | P4SMA200CA | 171                       | 190                                     | 210                                     | 1.0                 | 274                                        | 1.53                | 5.0                                |
| P4SMA220  | P4SMA220C  | 175                       | 198                                     | 242                                     | 1.0                 | 344                                        | 1.16                | 5.0                                |
| P4SMA220A | P4SMA220CA | 185                       | 209                                     | 231                                     | 1.0                 | 328                                        | 1.22                | 5.0                                |
| P4SMA250  | P4SMA250C  | 202                       | 225                                     | 275                                     | 1.0                 | 360                                        | 1.1                 | 5.0                                |
| P4SMA250A | P4SMA250CA | 214                       | 237                                     | 263                                     | 1.0                 | 344                                        | 1.16                | 5.0                                |
| P4SMA300  | P4SMA300C  | 243                       | 270                                     | 330                                     | 1.0                 | 430                                        | 0.93                | 5.0                                |
| P4SMA300A | P4SMA300CA | 256                       | 285                                     | 315                                     | 1.0                 | 414                                        | 0.97                | 5.0                                |
| P4SMA350  | P4SMA350C  | 284                       | 315                                     | 385                                     | 1.0                 | 504                                        | 0.79                | 5.0                                |
| P4SMA350A | P4SMA350CA | 300                       | 333                                     | 368                                     | 1.0                 | 482                                        | 0.83                | 5.0                                |
| P4SMA400  | P4SMA400C  | 324                       | 360                                     | 440                                     | 1.0                 | 574                                        | 0.70                | 5.0                                |
| P4SMA400A | P4SMA400CA | 342                       | 380                                     | 420                                     | 1.0                 | 548                                        | 0.73                | 5.0                                |
| P4SMA440  | P4SMA440C  | 356                       | 396                                     | 484                                     | 1.0                 | 631                                        | 0.63                | 5.0                                |
| P4SMA440A | P4SMA440CA | 376                       | 418                                     | 462                                     | 1.0                 | 602                                        | 0.65                | 5.0                                |

## Ratings and Characteristic Curves $T_A=25^\circ\text{C}$ unless otherwise noted

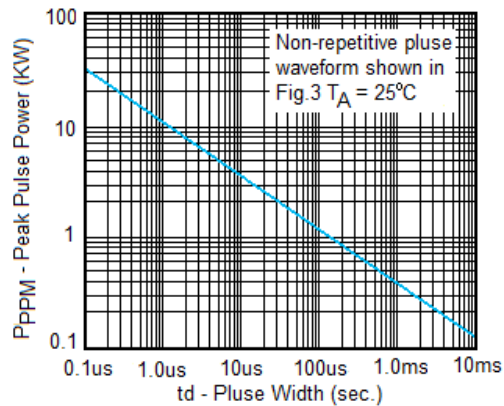


Fig. 1 Peak Pulse Power Rating

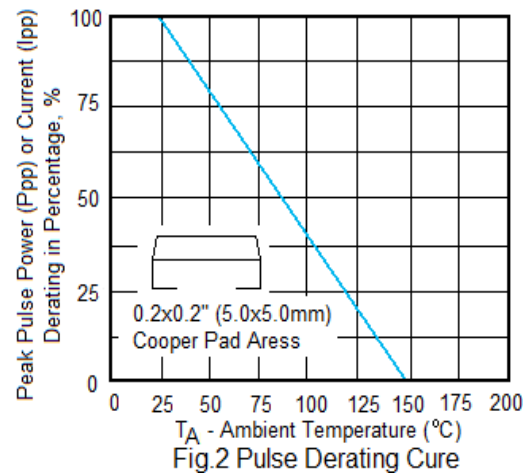


Fig. 2 Pulse Derating Curve

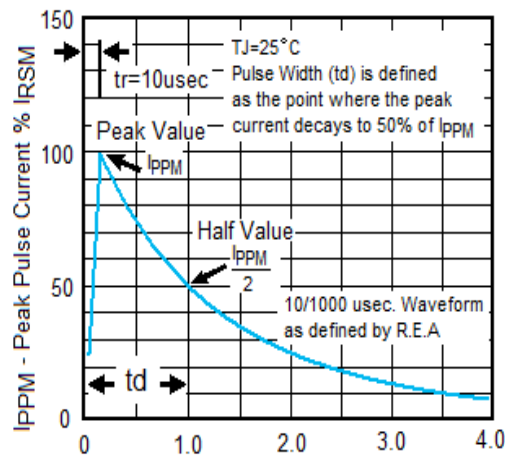


Fig. 3 Pulse Waveform

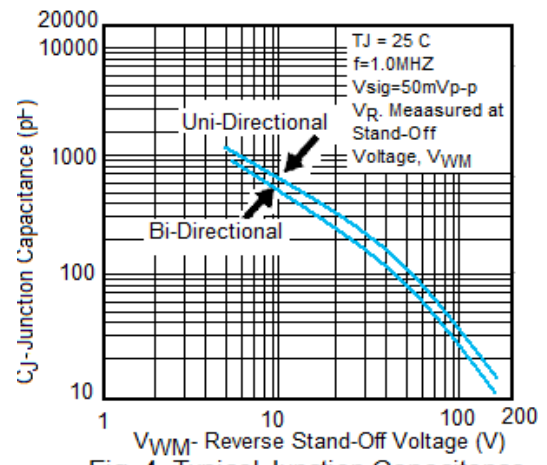


Fig. 4- Typical Junction Capacitance