

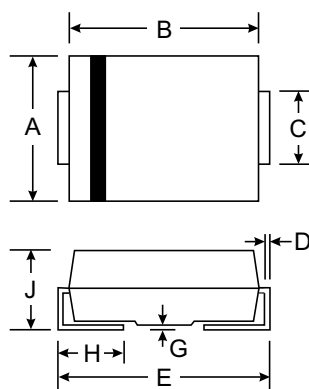
**VOLTAGE RANGE: 5.0 - 440 V**  
**POWER: 600Watts**

### 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: DO-214AC(SMA) Transfer Molded Epoxy
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity Indicator: Cathode Band (Note: Bi-directional devices have no polarity indicator.)
- Marking: Date Code and Marking Code See Page 2
- 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)          | $P_{PK}$       | 600         | W                |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)<br>(Notes 1, 2, & 3)      | $I_{FSM}$      | 100         | A                |
| Instantaneous Forward Voltage @ $I_{PP} = 35\text{A}$ $V_{BR} < 100\text{V}$<br>(Notes 1, 2, & 3) $V_{BR} \geq 100\text{V}$ | $V_F$          | 3.5<br>5.0  | V<br>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</sub> MIN(V)                 | V <sub>BR</sub> MAX(V)                  | I <sub>T</sub> (mA) | V <sub>C</sub> (V)                        | I <sub>PP</sub> (A) | I <sub>R</sub> (uA)               |
| SMA6J5.0  | SMA6J5.0C  | 5.0                       | 6.40                                   | 7.55                                    | 10                  | 9.6                                       | 62.5                | 800.0                             |
| SMA6J5.0A | SMA6J5.0CA | 5.0                       | 6.40                                   | 7.25                                    | 10                  | 9.2                                       | 65.2                | 800.0                             |
| SMA6J6.0  | SMA6J6.0C  | 6.0                       | 6.67                                   | 8.45                                    | 10                  | 11.4                                      | 52.6                | 800.0                             |
| SMA6J6.0A | SMA6J6.0CA | 6.0                       | 6.67                                   | 7.67                                    | 10                  | 10.3                                      | 58.3                | 800.0                             |
| SMA6J6.5  | SMA6J6.5C  | 6.5                       | 7.22                                   | 9.14                                    | 10                  | 12.3                                      | 48.8                | 500.0                             |
| SMA6J6.5A | SMA6J6.5CA | 6.5                       | 7.22                                   | 8.30                                    | 10                  | 11.2                                      | 53.6                | 500.0                             |
| SMA6J7.0  | SMA6J7.0C  | 7.0                       | 7.78                                   | 9.86                                    | 10                  | 13.3                                      | 45.1                | 200.0                             |
| SMA6J7.0A | SMA6J7.0CA | 7.0                       | 7.78                                   | 8.95                                    | 10                  | 12.0                                      | 50.0                | 200.0                             |
| SMA6J7.5  | SMA6J7.5C  | 7.5                       | 8.33                                   | 10.67                                   | 1.0                 | 14.3                                      | 42.0                | 100.0                             |
| SMA6J7.5A | SMA6J7.5CA | 7.5                       | 8.33                                   | 9.58                                    | 1.0                 | 12.9                                      | 46.5                | 100.0                             |
| SMA6J8.0  | SMA6J8.0C  | 8.0                       | 8.89                                   | 11.3                                    | 1.0                 | 15.0                                      | 40.0                | 50.0                              |
| SMA6J8.0A | SMA6J8.0CA | 8.0                       | 8.89                                   | 10.23                                   | 1.0                 | 13.6                                      | 44.1                | 50.0                              |
| SMA6J8.5  | SMA6J8.5C  | 8.5                       | 9.44                                   | 11.92                                   | 1.0                 | 15.9                                      | 37.7                | 20.0                              |
| SMA6J8.5A | SMA6J8.5CA | 8.5                       | 9.44                                   | 10.82                                   | 1.0                 | 14.4                                      | 41.7                | 20.0                              |
| SMA6J9.0  | SMA6J9.0C  | 9.0                       | 10.0                                   | 12.6                                    | 1.0                 | 16.9                                      | 35.5                | 10.0                              |
| SMA6J9.0A | SMA6J9.0CA | 9.0                       | 10.0                                   | 11.5                                    | 1.0                 | 15.4                                      | 39.0                | 10.0                              |
| SMA6J10   | SMA6J10C   | 10                        | 11.1                                   | 14.1                                    | 1.0                 | 18.8                                      | 31.9                | 5.0                               |
| SMA6J10A  | SMA6J10CA  | 10                        | 11.1                                   | 12.8                                    | 1.0                 | 17.0                                      | 35.3                | 5.0                               |
| SMA6J11   | SMA6J11C   | 11                        | 12.2                                   | 15.4                                    | 1.0                 | 20.1                                      | 29.9                | 5.0                               |
| SMA6J11A  | SMA6J11CA  | 11                        | 12.2                                   | 14.0                                    | 1.0                 | 18.2                                      | 33.0                | 5.0                               |
| SMA6J12   | SMA6J12C   | 12                        | 13.3                                   | 16.9                                    | 1.0                 | 22.0                                      | 27.3                | 5.0                               |
| SMA6J12A  | SMA6J12CA  | 12                        | 13.3                                   | 15.3                                    | 1.0                 | 19.9                                      | 30.2                | 5.0                               |
| SMA6J13   | SMA6J13C   | 13                        | 14.4                                   | 18.2                                    | 1.0                 | 23.8                                      | 25.2                | 5.0                               |
| SMA6J13A  | SMA6J13CA  | 13                        | 14.4                                   | 16.5                                    | 1.0                 | 21.5                                      | 27.9                | 5.0                               |
| SMA6J14   | SMA6J14C   | 14                        | 15.6                                   | 19.8                                    | 1.0                 | 25.8                                      | 23.3                | 5.0                               |
| SMA6J14A  | SMA6J14CA  | 14                        | 15.6                                   | 17.9                                    | 1.0                 | 23.2                                      | 25.9                | 5.0                               |
| SMA6J15   | SMA6J15C   | 15                        | 16.7                                   | 21.1                                    | 1.0                 | 26.9                                      | 22.3                | 5.0                               |
| SMA6J15A  | SMA6J15CA  | 15                        | 16.7                                   | 19.2                                    | 1.0                 | 24.4                                      | 24.6                | 5.0                               |
| SMA6J16   | SMA6J16C   | 16                        | 17.8                                   | 22.6                                    | 1.0                 | 28.8                                      | 20.8                | 5.0                               |
| SMA6J16A  | SMA6J16CA  | 16                        | 17.8                                   | 20.5                                    | 1.0                 | 26.0                                      | 23.1                | 5.0                               |
| SMA6J17   | SMA6J17C   | 17                        | 18.9                                   | 23.9                                    | 1.0                 | 30.5                                      | 19.7                | 5.0                               |
| SMA6J17A  | SMA6J17CA  | 17                        | 18.9                                   | 21.7                                    | 1.0                 | 27.6                                      | 21.7                | 5.0                               |
| SMA6J18   | SMA6J18C   | 18                        | 20.0                                   | 25.3                                    | 1.0                 | 32.2                                      | 18.6                | 5.0                               |
| SMA6J18A  | SMA6J18CA  | 18                        | 20.0                                   | 23.3                                    | 1.0                 | 29.2                                      | 20.5                | 5.0                               |
| SMA6J20   | SMA6J20C   | 20                        | 22.2                                   | 28.1                                    | 1.0                 | 35.8                                      | 16.8                | 5.0                               |
| SMA6J20A  | SMA6J20CA  | 20                        | 22.2                                   | 25.5                                    | 1.0                 | 32.4                                      | 18.5                | 5.0                               |
| SMA6J22   | SMA6J22C   | 22                        | 24.4                                   | 30.9                                    | 1.0                 | 39.4                                      | 15.2                | 5.0                               |
| SMA6J22A  | SMA6J22CA  | 22                        | 24.4                                   | 28.0                                    | 1.0                 | 35.5                                      | 16.9                | 5.0                               |
| SMA6J24   | SMA6J24C   | 24                        | 26.7                                   | 33.8                                    | 1.0                 | 43.0                                      | 14.0                | 5.0                               |
| SMA6J24A  | SMA6J24CA  | 24                        | 26.7                                   | 30.7                                    | 1.0                 | 38.9                                      | 15.4                | 5.0                               |
| SMA6J26   | SMA6J26C   | 26                        | 28.9                                   | 36.6                                    | 1.0                 | 46.6                                      | 12.9                | 5.0                               |
| SMA6J26A  | SMA6J26CA  | 26                        | 28.9                                   | 33.2                                    | 1.0                 | 42.1                                      | 14.3                | 5.0                               |
| SMA6J28   | SMA6J28C   | 28                        | 31.1                                   | 39.4                                    | 1.0                 | 50.0                                      | 12.0                | 5.0                               |
| SMA6J28A  | SMA6J28CA  | 28                        | 31.1                                   | 35.8                                    | 1.0                 | 45.4                                      | 13.2                | 5.0                               |

| TYPE      |            | Reverse<br>Stand-Off<br>Voltage | Breakdown<br>Voltage<br>Min. @I <sub>T</sub> | Breakdown<br>Voltage<br>Max. @ I <sub>T</sub> | Test<br>Current     | Maximum<br>Clamping<br>Voltage<br>@I <sub>PP</sub> | Peak<br>Pulse<br>Current | Reverse<br>Leakage<br>@V <sub>RWM</sub> |
|-----------|------------|---------------------------------|----------------------------------------------|-----------------------------------------------|---------------------|----------------------------------------------------|--------------------------|-----------------------------------------|
| (Uni)     | (Bi)       | V <sub>RWM</sub> (V)            | V <sub>BR</sub> MIN(V)                       | V <sub>BR</sub> MAX(V)                        | I <sub>T</sub> (mA) | V <sub>C</sub> (V)                                 | I <sub>PP</sub> (A)      | I <sub>R</sub> (uA)                     |
| SMA6J30   | SMA6J30C   | 30                              | 33.3                                         | 42.2                                          | 1.0                 | 53.5                                               | 11.2                     | 5.0                                     |
| SMA6J30A  | SMA6J30CA  | 30                              | 33.3                                         | 38.3                                          | 1.0                 | 48.4                                               | 12.4                     | 5.0                                     |
| SMA6J33   | SMA6J33C   | 33                              | 36.7                                         | 46.5                                          | 1.0                 | 59.0                                               | 10.2                     | 5.0                                     |
| SMA6J33A  | SMA6J33CA  | 33                              | 36.7                                         | 42.2                                          | 1.0                 | 53.3                                               | 11.3                     | 5.0                                     |
| SMA6J36   | SMA6J36C   | 36                              | 40.0                                         | 50.7                                          | 1.0                 | 64.3                                               | 9.3                      | 5.0                                     |
| SMA6J36A  | SMA6J36CA  | 36                              | 40.0                                         | 46.0                                          | 1.0                 | 58.1                                               | 10.3                     | 5.0                                     |
| SMA6J40   | SMA6J40C   | 40                              | 44.4                                         | 56.3                                          | 1.0                 | 71.4                                               | 8.4                      | 5.0                                     |
| SMA6J40A  | SMA6J40CA  | 40                              | 44.4                                         | 51.1                                          | 1.0                 | 64.5                                               | 9.3                      | 5.0                                     |
| SMA6J43   | SMA6J43C   | 43                              | 47.8                                         | 60.5                                          | 1.0                 | 76.7                                               | 7.8                      | 5.0                                     |
| SMA6J43A  | SMA6J43CA  | 43                              | 47.8                                         | 54.9                                          | 1.0                 | 69.4                                               | 8.6                      | 5.0                                     |
| SMA6J45   | SMA6J45C   | 45                              | 50.0                                         | 63.3                                          | 1.0                 | 80.3                                               | 7.5                      | 5.0                                     |
| SMA6J45A  | SMA6J45CA  | 45                              | 50.0                                         | 57.5                                          | 1.0                 | 72.7                                               | 8.3                      | 5.0                                     |
| SMA6J48   | SMA6J48C   | 48                              | 53.3                                         | 67.5                                          | 1.0                 | 85.5                                               | 7.0                      | 5.0                                     |
| SMA6J48A  | SMA6J48CA  | 48                              | 53.3                                         | 61.3                                          | 1.0                 | 77.4                                               | 7.8                      | 5.0                                     |
| SMA6J51   | SMA6J51C   | 51                              | 56.7                                         | 71.8                                          | 1.0                 | 91.1                                               | 6.6                      | 5.0                                     |
| SMA6J51A  | SMA6J51CA  | 51                              | 56.7                                         | 65.2                                          | 1.0                 | 82.4                                               | 7.3                      | 5.0                                     |
| SMA6J54   | SMA6J54C   | 54                              | 60.0                                         | 76.0                                          | 1.0                 | 96.3                                               | 6.2                      | 5.0                                     |
| SMA6J54A  | SMA6J54CA  | 54                              | 60.0                                         | 69.0                                          | 1.0                 | 87.1                                               | 6.9                      | 5.0                                     |
| SMA6J58   | SMA6J58C   | 58                              | 64.4                                         | 81.6                                          | 1.0                 | 103                                                | 5.8                      | 5.0                                     |
| SMA6J58A  | SMA6J58CA  | 58                              | 64.4                                         | 74.1                                          | 1.0                 | 93.6                                               | 6.4                      | 5.0                                     |
| SMA6J60   | SMA6J60C   | 60                              | 66.7                                         | 84.5                                          | 1.0                 | 107                                                | 5.6                      | 5.0                                     |
| SMA6J60A  | SMA6J60CA  | 60                              | 66.7                                         | 76.7                                          | 1.0                 | 96.8                                               | 6.2                      | 5.0                                     |
| SMA6J64   | SMA6J64C   | 64                              | 71.1                                         | 90.1                                          | 1.0                 | 114                                                | 5.3                      | 5.0                                     |
| SMA6J64A  | SMA6J64CA  | 64                              | 71.1                                         | 81.8                                          | 1.0                 | 103                                                | 5.8                      | 5.0                                     |
| SMA6J70   | SMA6J70C   | 70                              | 77.8                                         | 98.6                                          | 1.0                 | 125                                                | 4.8                      | 5.0                                     |
| SMA6J70A  | SMA6J70CA  | 70                              | 77.8                                         | 89.5                                          | 1.0                 | 113                                                | 5.3                      | 5.0                                     |
| SMA6J75   | SMA6J75C   | 75                              | 83.0                                         | 105.7                                         | 1.0                 | 134                                                | 4.5                      | 5.0                                     |
| SMA6J75A  | SMA6J75CA  | 75                              | 83.0                                         | 95.8                                          | 1.0                 | 121                                                | 5.0                      | 5.0                                     |
| SMA6J78   | SMA6J78C   | 78                              | 86.0                                         | 109.8                                         | 1.0                 | 139                                                | 4.3                      | 5.0                                     |
| SMA6J78A  | SMA6J78CA  | 78                              | 86.0                                         | 99.7                                          | 1.0                 | 126                                                | 4.8                      | 5.0                                     |
| SMA6J85   | SMA6J85C   | 85                              | 94.0                                         | 119.2                                         | 1.0                 | 151                                                | 4.0                      | 5.0                                     |
| SMA6J85A  | SMA6J85CA  | 85                              | 94.0                                         | 108.2                                         | 1.0                 | 137                                                | 4.4                      | 5.0                                     |
| SMA6J90   | SMA6J90C   | 90                              | 100                                          | 126.5                                         | 1.0                 | 160                                                | 3.8                      | 5.0                                     |
| SMA6J90A  | SMA6J90CA  | 90                              | 100                                          | 115.5                                         | 1.0                 | 146                                                | 4.1                      | 5.0                                     |
| SMA6J100  | SMA6J100C  | 100                             | 111                                          | 141.0                                         | 1.0                 | 179                                                | 3.4                      | 5.0                                     |
| SMA6J100A | SMA6J100CA | 100                             | 111                                          | 128.0                                         | 1.0                 | 162                                                | 3.7                      | 5.0                                     |
| SMA6J110  | SMA6J110C  | 110                             | 122                                          | 154.5                                         | 1.0                 | 196                                                | 3.1                      | 5.0                                     |
| SMA6J110A | SMA6J110CA | 110                             | 122                                          | 140.5                                         | 1.0                 | 177                                                | 3.4                      | 5.0                                     |
| SMA6J120  | SMA6J120C  | 120                             | 133                                          | 169.0                                         | 1.0                 | 214                                                | 2.8                      | 5.0                                     |
| SMA6J120A | SMA6J120CA | 120                             | 133                                          | 153.0                                         | 1.0                 | 193                                                | 3.1                      | 5.0                                     |
| SMA6J130  | SMA6J130C  | 130                             | 144                                          | 182.5                                         | 1.0                 | 231                                                | 2.6                      | 5.0                                     |
| SMA6J130A | SMA6J130CA | 130                             | 144                                          | 165.5                                         | 1.0                 | 209                                                | 2.9                      | 5.0                                     |
| SMA6J150  | SMA6J150C  | 150                             | 167                                          | 211.5                                         | 1.0                 | 268                                                | 2.2                      | 5.0                                     |
| SMA6J150A | SMA6J150CA | 150                             | 167                                          | 192.5                                         | 1.0                 | 243                                                | 2.5                      | 5.0                                     |
| SMA6J160  | SMA6J160C  | 160                             | 178                                          | 226.0                                         | 1.0                 | 287                                                | 2.1                      | 5.0                                     |
| SMA6J160A | SMA6J160CA | 160                             | 178                                          | 205.0                                         | 1.0                 | 259                                                | 2.3                      | 5.0                                     |

| TYPE      |            | Reverse Stand-Off Voltage | Breakdown Voltage Min. @ $I_T$ | Breakdown Voltage Max. @ $I_T$ | Test Current | Maximum Clamping Voltage @ $I_{PP}$ | Peak Pulse Current | Reverse Leakage @ $V_{RWM}$ |
|-----------|------------|---------------------------|--------------------------------|--------------------------------|--------------|-------------------------------------|--------------------|-----------------------------|
| (Uni)     | (Bi)       | $V_{RWM}(V)$              | $V_{BR MIN}(V)$                | $V_{BR MAX}(V)$                | $I_T (mA)$   | $V_C(V)$                            | $I_{PP}(A)$        | $I_R(\mu A)$                |
| SMA6J170  | SMA6J170C  | 170                       | 189                            | 239.5                          | 1.0          | 304                                 | 2.0                | 5.0                         |
| SMA6J170A | SMA6J170CA | 170                       | 189                            | 217.5                          | 1.0          | 275                                 | 2.2                | 5.0                         |
| SMA6J180  | SMA6J180C  | 180                       | 200                            | 253.8                          | 1.0          | 321                                 | 1.9                | 5.0                         |
| SMA6J180A | SMA6J180CA | 180                       | 200                            | 230.4                          | 1.0          | 290                                 | 2.1                | 5.0                         |
| SMA6J190  | SMA6J190C  | 190                       | 211                            | 267.9                          | 1.0          | 339                                 | 1.8                | 5.0                         |
| SMA6J190A | SMA6J190CA | 190                       | 211                            | 243.2                          | 1.0          | 306                                 | 2.0                | 5.0                         |
| SMA6J200  | SMA6J200C  | 200                       | 222                            | 282.0                          | 1.0          | 356                                 | 1.7                | 5.0                         |
| SMA6J200A | SMA6J200CA | 200                       | 222                            | 256.0                          | 1.0          | 322                                 | 1.9                | 5.0                         |
| SMA6J220  | SMA6J220C  | 220                       | 244                            | 310.2                          | 1.0          | 392                                 | 1.5                | 5.0                         |
| SMA6J220A | SMA6J220CA | 220                       | 244                            | 281.6                          | 1.0          | 355                                 | 1.7                | 5.0                         |
| SMA6J250  | SMA6J250C  | 250                       | 278                            | 342.5                          | 1.0          | 447                                 | 1.3                | 5.0                         |
| SMA6J250A | SMA6J250CA | 250                       | 278                            | 309.0                          | 1.0          | 403                                 | 1.5                | 5.0                         |
| SMA6J300  | SMA6J300C  | 300                       | 333                            | 411.0                          | 1.0          | 535                                 | 1.1                | 5.0                         |
| SMA6J300A | SMA6J300CA | 300                       | 333                            | 371.0                          | 1.0          | 484                                 | 1.2                | 5.0                         |
| SMA6J350  | SMA6J350C  | 350                       | 389                            | 479.5                          | 1.0          | 624                                 | 1.0                | 5.0                         |
| SMA6J350A | SMA6J350CA | 350                       | 389                            | 432.0                          | 1.0          | 565                                 | 1.1                | 5.0                         |
| SMA6J400  | SMA6J400C  | 400                       | 444                            | 548.0                          | 1.0          | 687                                 | 0.9                | 5.0                         |
| SMA6J400A | SMA6J400CA | 400                       | 444                            | 494.0                          | 1.0          | 645                                 | 0.9                | 5.0                         |
| SMA6J440  | SMA6J440C  | 440                       | 489                            | 602.8                          | 1.0          | 786                                 | 0.8                | 5.0                         |
| SMA6J440A | SMA6J440CA | 440                       | 489                            | 543.0                          | 1.0          | 710                                 | 0.8                | 5.0                         |

**Note:**

- (1)  $V_{BR}$  measured after  $I_T$  applied for 300 = square wave pulse or equivalent.
- (2) Surge Current Waveform per Figure 5 and Derate per Figure 1
- (3) A Transient suppressor is normally selected according to the reverse " Stand-off Voltage " ( $V_{WM}$ ) which should be equal to or greater than the D.C. or continuous peak operating voltage level.

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

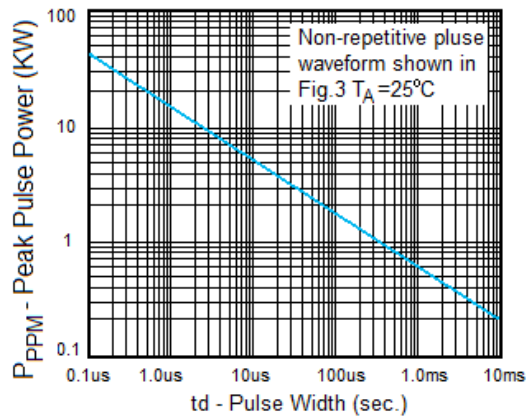


Fig. 1 Peak Pulse Power Rating

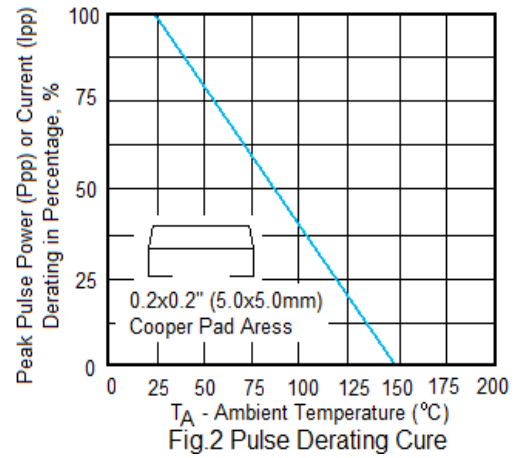


Fig. 2 Pulse Derating Curve

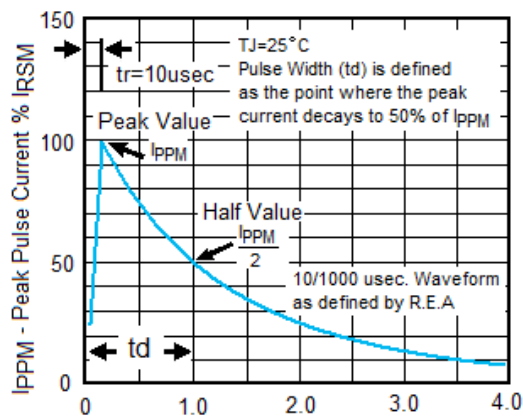


Fig. 3 Pulse Waveform

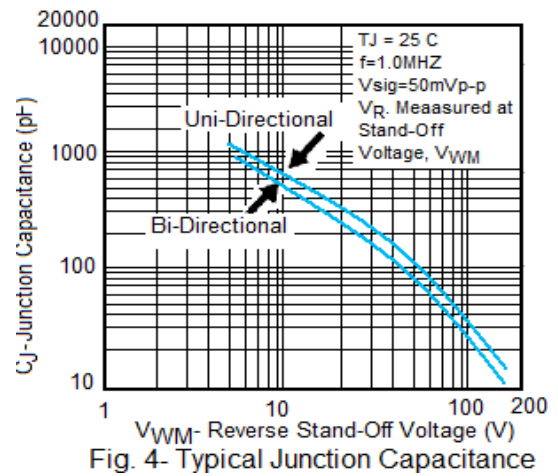


Fig. 4- Typical Junction Capacitance