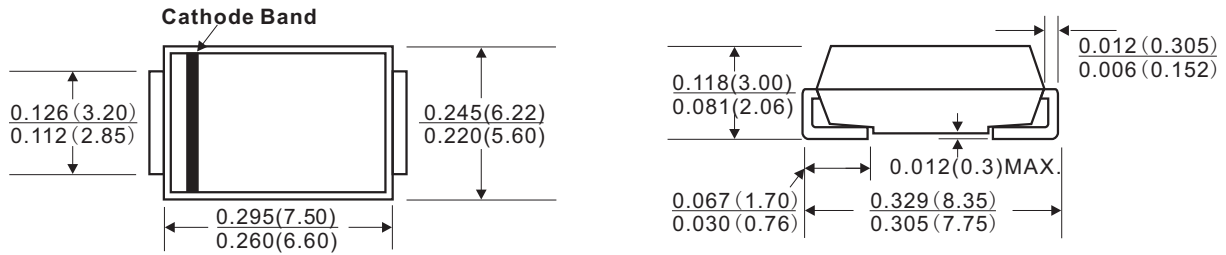


Dimensions (DO-214AB)

DO-214AB(SMC J-Bend)



Dimensions in inches and(millimeters)

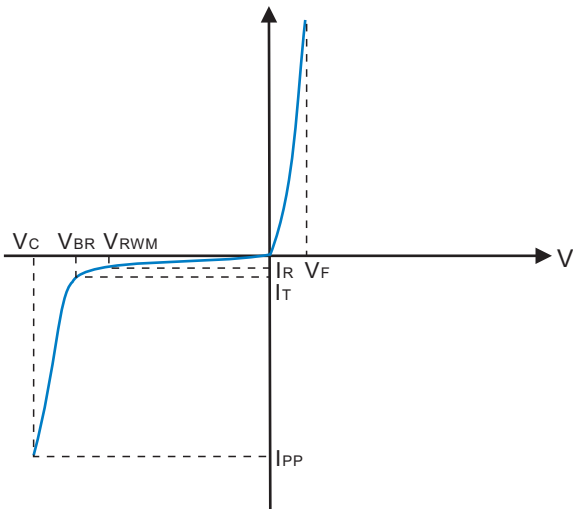
Electrical Characteristics

| TSD Part Number | | Device Marking Code | | Reverse Stand-Off Voltage | Breakdown Voltage @IT | | Test Current | Maximum Clamping Voltage @IPP | Peak Pulse Current | Reverse Leakage @VRWM |
|-----------------|----------|---------------------|-----|---------------------------|-----------------------|------------|--------------|-------------------------------|--------------------|-----------------------|
| UNI-Polar | BI-Polar | UNI | BI | VRWM(V) | VBR(V)Min. | VBR(V)Max. | IT(mA) | Vc(V) | IPP(A) | IR(μA) |
| TSD6.0U | TSD6.0B | GDG | BDG | 6.0 | 6.67 | 7.37 | 10 | 10.3 | 174.8 | 200 |
| TSD8.0U | TSD8.0B | GDR | BDR | 8.0 | 8.89 | 9.83 | 1 | 13.6 | 132.4 | 50 |
| TSD12U | TSD12B | GEE | BEE | 12.0 | 13.30 | 14.70 | 1 | 19.9 | 90.5 | 1 |
| TSD15U | TSD15B | GEM | BEM | 15.0 | 16.70 | 18.50 | 1 | 24.4 | 73.8 | 1 |
| TSD16U | TSD16B | GEP | BEP | 16.0 | 17.80 | 19.70 | 1 | 26.0 | 69.2 | 1 |
| TSD18U | TSD18B | GET | BET | 18.0 | 20.0 | 22.10 | 1 | 29.2 | 61.6 | 1 |
| TSD20U | TSD20B | GEV | BEV | 20.0 | 22.20 | 24.50 | 1 | 32.4 | 55.6 | 1 |
| TSD22U | TSD22B | GEX | BEX | 22.0 | 24.40 | 26.90 | 1 | 35.5 | 50.7 | 1 |
| TSD24U | TSD24B | GEZ | BEZ | 24.0 | 26.70 | 29.50 | 1 | 38.9 | 46.3 | 1 |
| TSD26U | TSD26B | GFE | BFE | 26.0 | 28.90 | 31.90 | 1 | 42.1 | 42.8 | 1 |
| TSD28U | TSD28B | GFG | BFG | 28.0 | 31.10 | 34.40 | 1 | 45.4 | 39.6 | 1 |
| TSD30U | TSD30B | GFK | BFK | 30.0 | 33.30 | 36.80 | 1 | 48.4 | 37.2 | 1 |
| TSD33U | TSD33B | GFM | BFM | 33.0 | 36.70 | 40.60 | 1 | 53.3 | 33.8 | 1 |
| TSD36U | TSD36B | GFP | BFP | 36.0 | 40.00 | 44.20 | 1 | 58.1 | 31.0 | 1 |
| TSD40U | TSD40B | GFR | BFR | 40.0 | 44.40 | 49.10 | 1 | 64.5 | 27.9 | 1 |
| TSD48U | TSD48B | GFX | BFX | 48.0 | 53.30 | 58.90 | 1 | 77.4 | 23.3 | 1 |
| TSD51U | TSD51B | GFZ | BFZ | 51.0 | 56.70 | 62.70 | 1 | 82.4 | 21.8 | 1 |
| TSD58U | TSD58B | GGG | BGG | 58.0 | 64.40 | 71.20 | 1 | 93.6 | 19.2 | 1 |
| TSD60U | TSD60B | GGK | BGK | 60.0 | 66.70 | 73.70 | 1 | 96.8 | 18.6 | 1 |
| TSD150U | TSD150B | GHM | BHM | 150.0 | 167.00 | 185.00 | 1 | 243.0 | 7.4 | 1 |
| TSD170U | TSD170B | GHR | BHR | 170.0 | 189.00 | 209.00 | 1 | 275.0 | 6.5 | 1 |

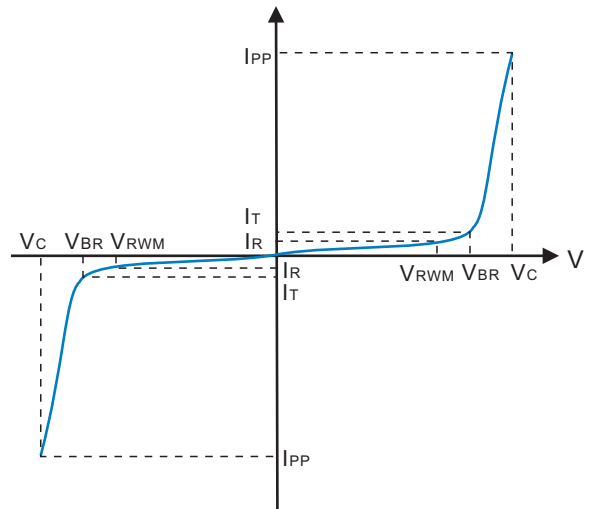
For bidirectional type having VRWM of 10 volts and less, the IR limit is double.

I-V Curve Characteristics

Uni-directional



Bi-directional



Ratings And Characteristic Curves ($T_A=25^\circ\text{C}$ Unless otherwise noted)

Fig.1 Peak Pulse Power Rating

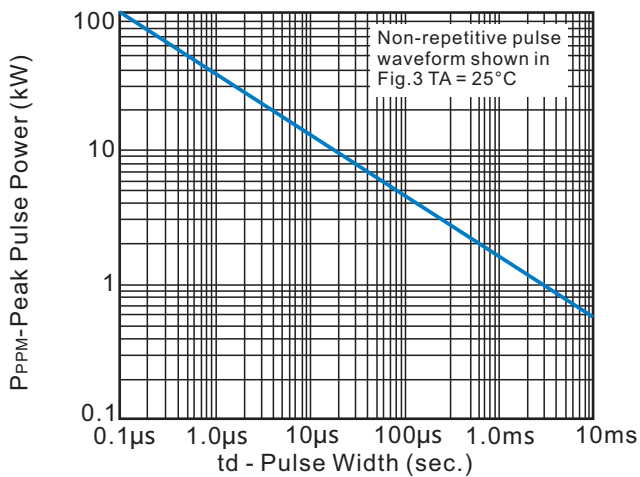


Fig.2 Pulse Derating Curve

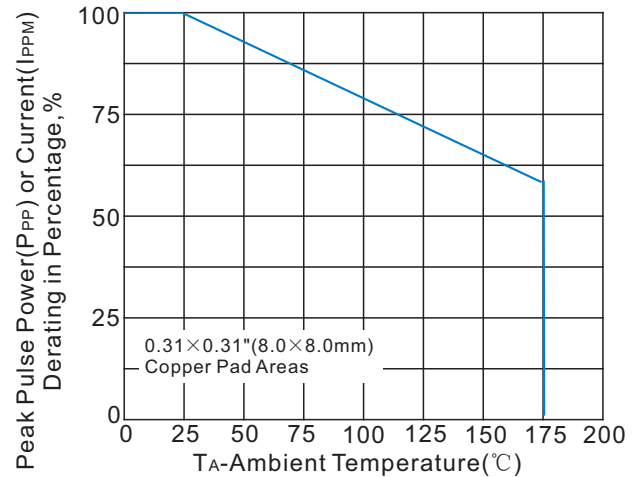


Fig.3 Pulse Waveform

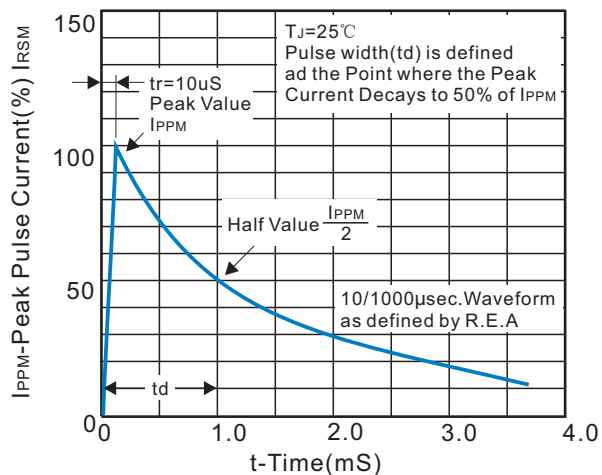
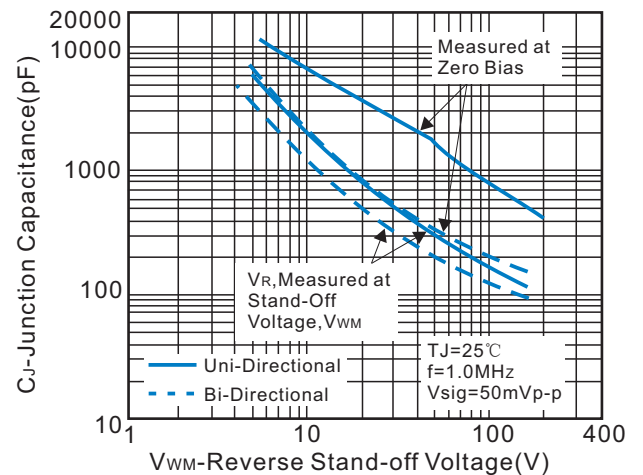


Fig.4 Typical Junction Capacitance



Ratings And Characteristic Curves($T_A=25^{\circ}\text{C}$ Unless otherwise noted)

Fig.5 Typ. Transient Thermal Impedance

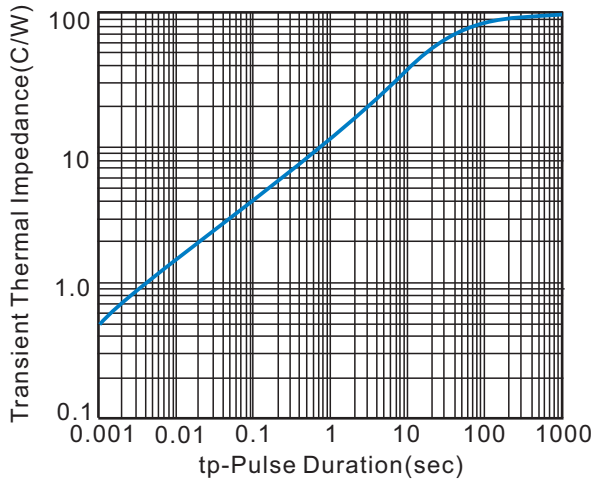
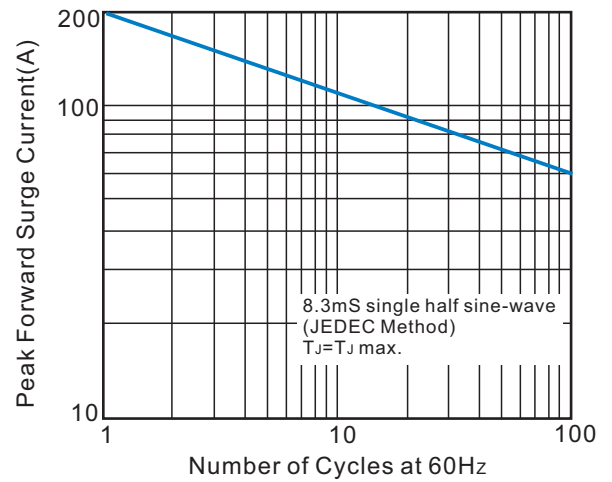


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only

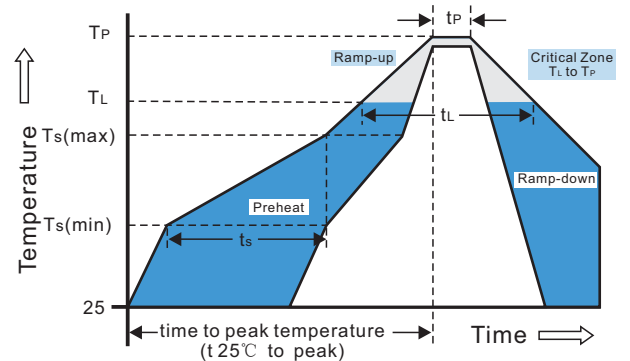


Recommended Soldering Conditions

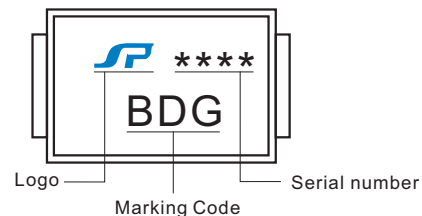
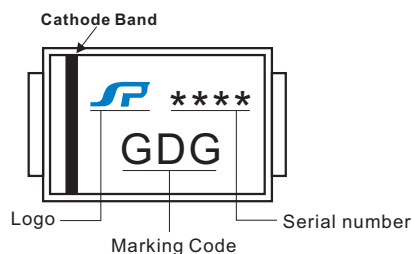
Recommended Conditions

| Reflow Condition | | Pb-Free assembly (see Fig.1) |
|---|----------------------------------|---------------------------------------|
| Pre Heat | -Temperature Min($T_{s(min)}$) | +150 $^{\circ}\text{C}$ |
| | -Temperature Max($T_{s(max)}$) | +200 $^{\circ}\text{C}$ |
| | -Time(Min to Max)(t_s) | 60-180secs |
| Average ramp up rate (Liquidus Temp(T_L) to peak) | | 3 $^{\circ}\text{C}/\text{sec. Max.}$ |
| $T_{s(max)}$ to T_L -Ramp-up Rate | | 3 $^{\circ}\text{C}/\text{sec. Max.}$ |
| Reflow | -Temperature(T_L)(Liquidus) | +217 $^{\circ}\text{C}$ |
| | -Temperature(t_L) | 60-150secs |
| Peak Temp(T_P) | | +260(+0/-5) $^{\circ}\text{C}$ |
| Time within 5 $^{\circ}\text{C}$ of actual Peak Temp(t_P) | | 30 secs. Max. |
| Ramp-down Rate | | 6 $^{\circ}\text{C}/\text{sec. Max.}$ |
| Time 25 $^{\circ}\text{C}$ to Peak Temp(T_P) | | 8 min. Max. |
| Do not exceed | | +260 $^{\circ}\text{C}$ |

Reflow Soldering



Marking Code



Packing Options And Reel Specification-DO-214AB

| Symbol | Ea Per Reel | REEL DIA (mm) | Industry Standard |
|--------|-------------|---------------|-------------------|
| TSD*** | 500/3000 | 178/330 | EIARS-481 |

