

Surface Mount Superfast Recovery Rectifier

Reverse Voltage - 50V~1000V

Forward Current - 1 A

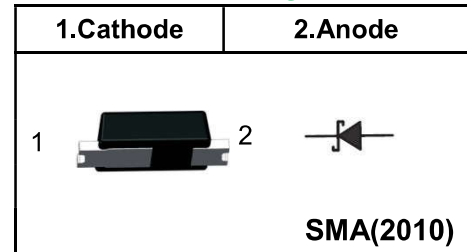
FEATURES

- ◆ For surface mounted applications
- ◆ Low profile package
- ◆ Glass Passivated Chip Junction
- ◆ Easy to pick and place
- ◆ Fast reverse recovery time
- ◆ Leadfree in comply with EU RoHS 2011/65/EU directives

MECHANICAL DATA

- ◆ Case: SMA(2010)
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Approx. Weight: 30mg / 0.0010oz

Pinning



Marking Code

| | |
|-------------|-------------|
| RS1A | RS1A |
| RS1B | RS1B |
| RS1D | RS1D |
| RS1G | RS1G |
| RS1J | RS1J |
| RS1K | RS1K |
| RS1M | RS1M |

Absolute Maximum Ratings and Electrical characteristics

Ratings at 25 ° ambient temperature unless otherwise specified. Single phase, half wave, 60Hz resistive or inductive load, for capacitive load, derate by 20 %

| Parameter | Symbols | RS1A | RS1B | RS1D | RS1G | RS1J | RS1K | RS1M | Units | |
|---|------------------------------------|------------|------|------|------|------|------|------|--------------|----|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V | |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V | |
| Maximum DC Blocking Voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V | |
| Maximum Average Forward Rectified Current at $T_C = 125^\circ C$ | $I_{F(AV)}$ | 1 | | | | | | | A | |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed On Rated Load | I_{FSM} | 30 | | | | | | | A | |
| Maximum Instantaneous Forward Voltage at 1 A | V_F | 1.3 | | | | | | | V | |
| Maximum DC Reverse Current $T_A = 25^\circ C$ at Rated DC Blocking Voltage $T_A = 125^\circ C$ | I_R | 5 100 | | | | | | | μA | |
| Typical Junction Capacitance at $V_R = 4V, f = 1MHz$ | C_j | 10 | | | | | | | pF | |
| Maximum Reverse Recovery Time ⁽¹⁾ | t_{rr} | 150 | | | | 250 | | 500 | | nS |
| Typical Thermal Resistance ⁽²⁾ | $R_{\theta ja}$ $R_{\theta jc}$ | 90 25 | | | | | | | $^\circ C/W$ | |
| Operating and Storage Temperature Range | T_j, T_{stg} | -55 ~ +150 | | | | | | | $^\circ C$ | |

(1) Measured with $I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 A$

(2) P.C.B. mounted with 2.0 X 2.0" (5 X 5cm) copper pad areas.

Fig.1 Forward Current Derating Curve

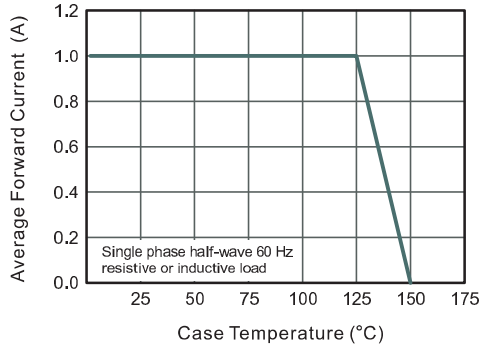


Fig.2 Typical Reverse Characteristics

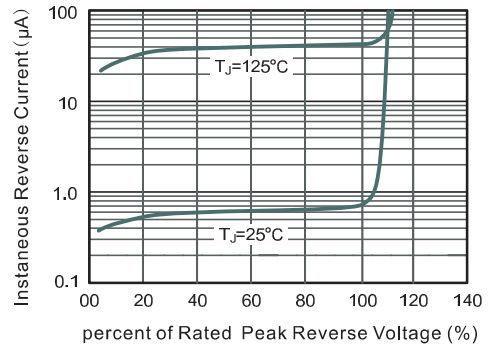


Fig.3 Typical Instantaneous Forward Characteristics

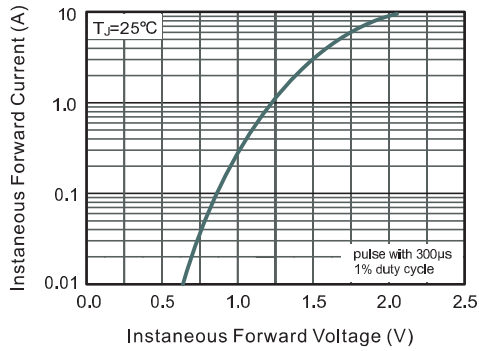


Fig.4 Typical Junction Capacitance

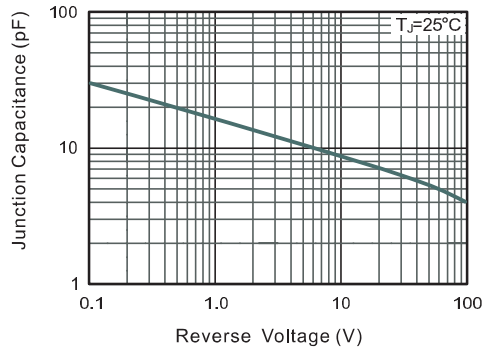


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

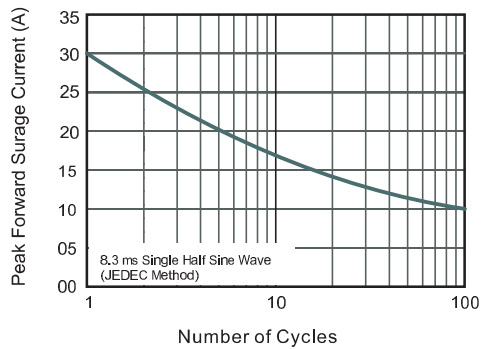
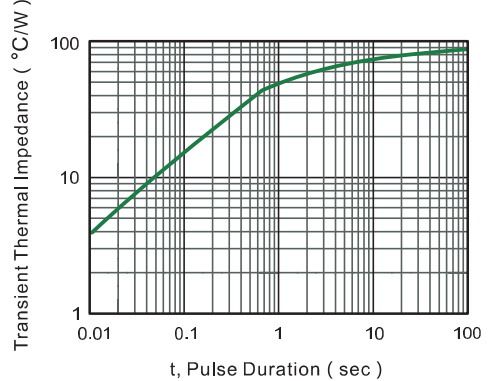
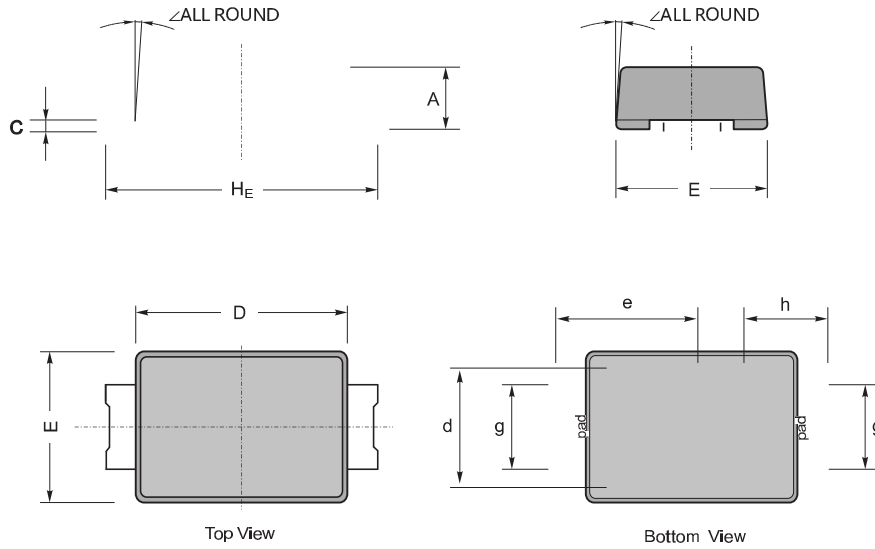


Fig.6- Typical Transient Thermal Impedance



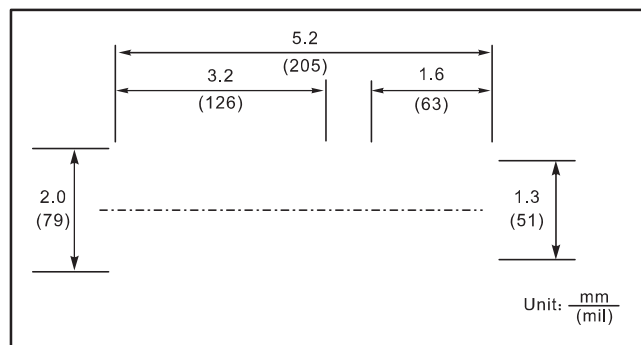
Package Outline SMA(2010)

Plastic surface mounted package; 2 leads



| UNIT | | A | C | D | E | H_E | d | e | g | h | \angle |
|------|-----|------|------|------|------|-------|------|------|------|-----|----------|
| mm | max | 1.20 | 0.35 | 4.10 | 2.70 | 5.20 | 1.90 | 3.05 | 1.50 | 1.2 | 12° |
| | min | 0.90 | 0.20 | 3.70 | 2.30 | 4.80 | 1.70 | 2.85 | 1.30 | 1.0 | |
| mil | max | 47 | 13.8 | 161 | 106 | 205 | 75 | 120 | 59 | 47 | |
| | min | 35 | 7.9 | 145 | 90 | 189 | 67 | 112 | 51 | 39 | |

The recommended mounting pad size



Summary of Packing Options

| Package | Package Description | Packing Quantity | Industry Standard |
|-----------|---------------------|------------------|-------------------|
| SMA(2010) | Tape/Reel, 7" reel | 3000 | EIA-481-1 |