

Surface Mount Ultrafast Recovery Rectifier

Reverse Voltage – 50~1000 V Forward Current – 5 A

FEATURES

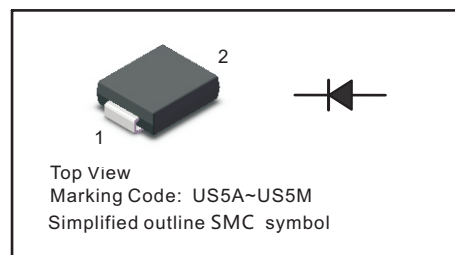
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Superfast reverse recovery time
- Lead free in comply with EU RoHS 2011/65/EU directives

MECHANICAL DATA

- Case: SMC
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 217mg / 0.0077oz

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | Cathode |
| 2 | Anode |



Maximum Ratings and Electrical characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Single phase half-wave 60 Hz, resistive or inductive load, for capacitive load current derate by 20 %.

| Parameter | Symbols | US5ACG | US5BCG | US5DCG | US5GCG | US5JCG | US5KCG | US5MCG | 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 $T_c = 100\text{ }^\circ\text{C}$ | $I_{F(AV)}$ | 5 | | | | | | | A |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load | I_{FSM} | 120 | | | | | | | A |
| Maximum Instantaneous Forward Voltage at 5 A | V_F | 1.0 | | 1.3 | | 1.65 | | | V |
| Maximum DC Reverse Current at Rated DC Blocking Voltage $T_a = 25\text{ }^\circ\text{C}$ $T_a = 125\text{ }^\circ\text{C}$ | I_R | 5 100 | | | | | | | μA |
| Typical Junction Capacitance at $V_R=4\text{V}$, $f=1\text{MHz}$ | C_j | 50 | | | | | | | pF |
| Maximum Reverse Recovery Time ⁽¹⁾ | t_{rr} | 50 | | | | 75 | | | ns |
| Typical Thermal Resistance ⁽²⁾ | $R_{\theta JA}$ | 35 | | | | | | | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range | T_j, T_{stg} | -55 ~ +150 | | | | | | | $^\circ\text{C}$ |

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

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

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram

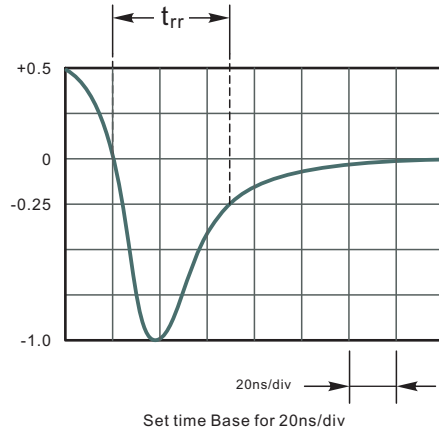
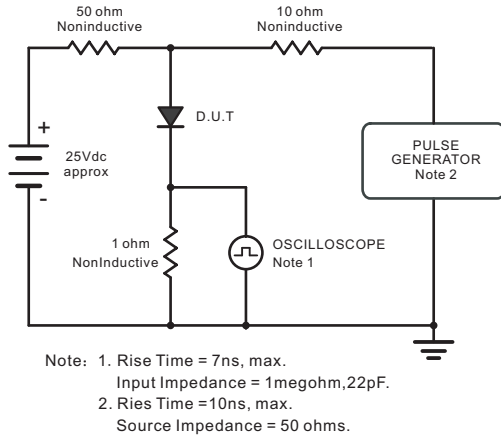


Fig.2 Maximum Average Forward Current Rating

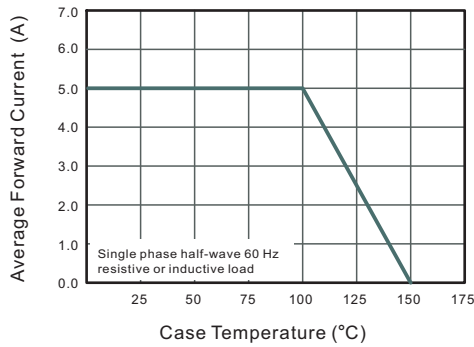


Fig.3 Typical Reverse Characteristics

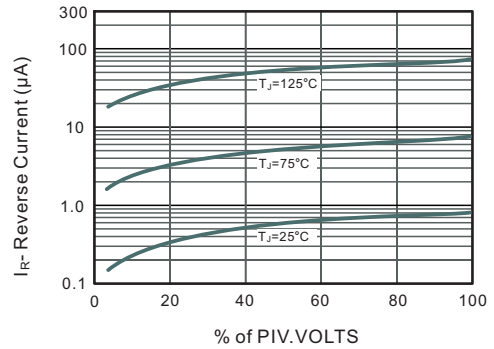


Fig.4 Typical Forward Characteristics

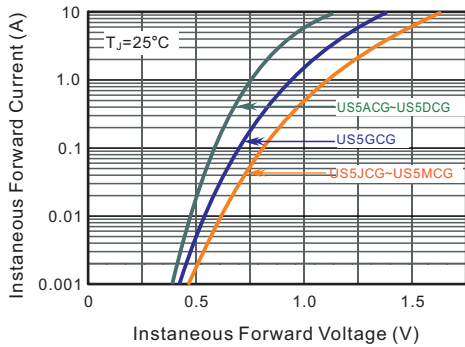


Fig.5 Typical Junction Capacitance

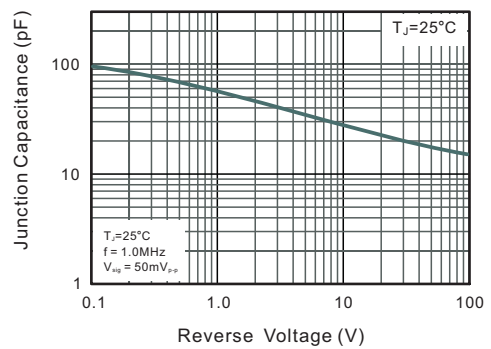
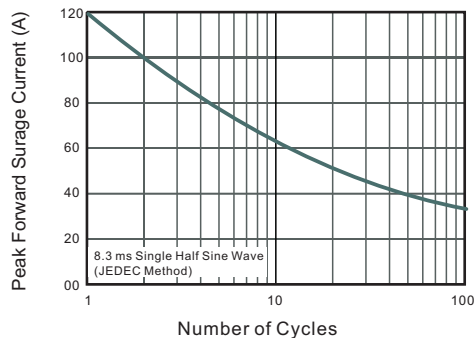


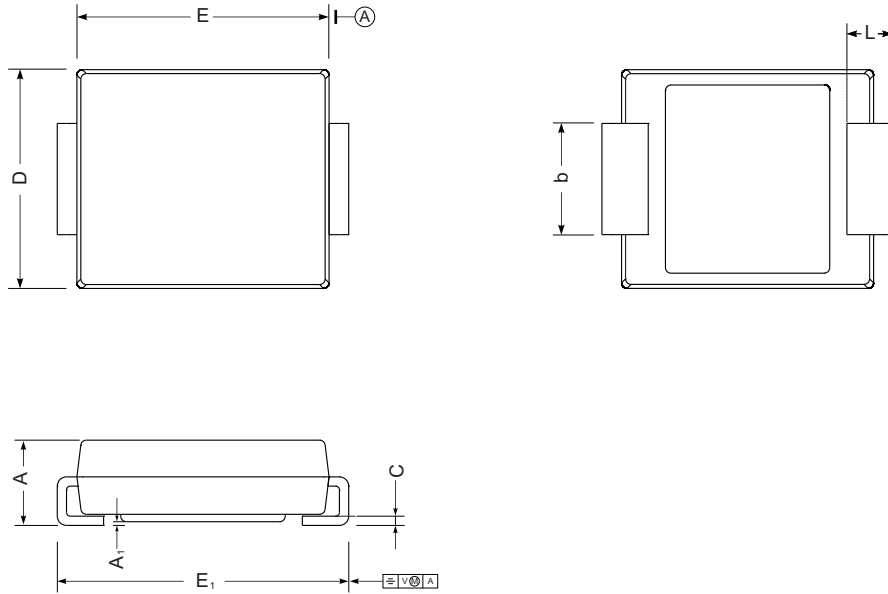
Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

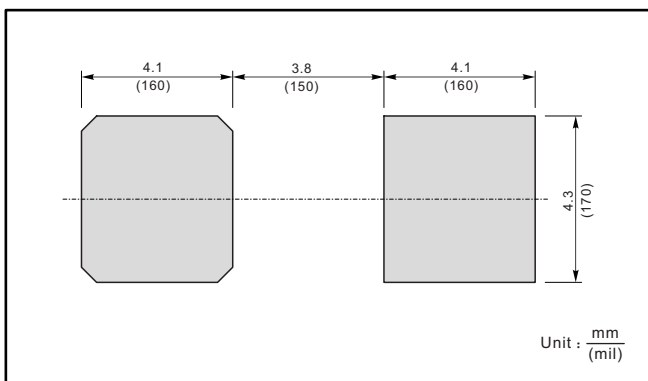
SMC



SMC mechanical data

| UNIT | | A | E | D | E ₁ | A ₁ | C | L | b |
|------|-----|------|-----|-----|----------------|----------------|------|-----|------|
| mm | max | 2.62 | 7.0 | 6.2 | 8.0 | 0.21 | 0.31 | 1.6 | 3.25 |
| | min | 2.00 | 6.5 | 5.6 | 7.6 | 0.05 | 0.15 | 0.9 | 2.75 |
| mil | max | 103 | 276 | 244 | 315 | 8.3 | 12 | 63 | 128 |
| | min | 79 | 256 | 220 | 299 | 2.0 | 5.9 | 35 | 108 |

The recommended mounting pad size



Marking

| Type number | Marking code |
|-------------|--------------|
| US5ACG | US5A |
| US5BCG | US5B |
| US5DCG | US5D |
| US5GCG | US5G |
| US5JCG | US5J |
| US5KCG | US5K |
| US5MCG | US5M |