

Super-Fast Rectifiers

ES3K

Features

- For surface mounted applications
- Ideal for automated placement
- Low forward voltage drop
- High surge current capability
- RoHS Compliant



Mechanical Data

- Case: SMC molded plastic
- Molding compound, UL flammability classification rating 94V-0
- Terminals: Solder plated, solderable per MIL- STD-202, Method 208
- Polarity: Color band denotes cathode end

Maximum Ratings (@T_A = 25°C unless otherwise specified)

| Characteristic | Symbol | ES3K | Units |
|--|--------------------|------|-------|
| Peak repetitive reverse voltage | V _{RRM} | 800 | V |
| RMS reverse voltage | V _{RMS} | 560 | V |
| DC blocking voltage | V _{DC} | 800 | V |
| Maximum average forward output current | I _{F(AV)} | 3.0 | A |
| Peak forward surge current, 8.3ms single half-sine-wave | I _{FSM} | 100 | A |

Thermal Characteristics

| Parameter | Symbol | ES3K | Units |
|--|------------------|-----------------|-------|
| Typical thermal resistance (Note 1) | R _{θJA} | 52 | °C /W |
| | R _{θJC} | 15 | |
| | R _{θJL} | 16 | |
| Operating junction temperature range | T _J | - 55 ---- + 150 | °C |
| Storage temperature range | T _{STG} | - 55 ---- + 150 | °C |

Note:

1. Device mounted on PCB with 10 mm x 20 mm x 0.1mm copper pad areas

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Electrical Characteristics (@T_A = 25°C unless otherwise specified)

| Parameter | Symbol | Test conditions | | Typ. | Max. | Units |
|---------------------------------------|----------------|---|------------------------|------|------|-------|
| Maximum instantaneous forward voltage | V _F | I _F =3.0A | @T _A =25°C | -- | 2.3 | V |
| Maximum Reverse current | I _R | Rated V _R , | @T _A =25°C | -- | 10 | μ A |
| | | | @T _A =125°C | -- | 500 | |
| Maximum Reverse Recovery Time | trr | I _F =0.5A, I _{RM} =1A, I _{R(REC)} =0.25A | | -- | 35 | ns |

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

Fig.1-Forward Current Derating Curve

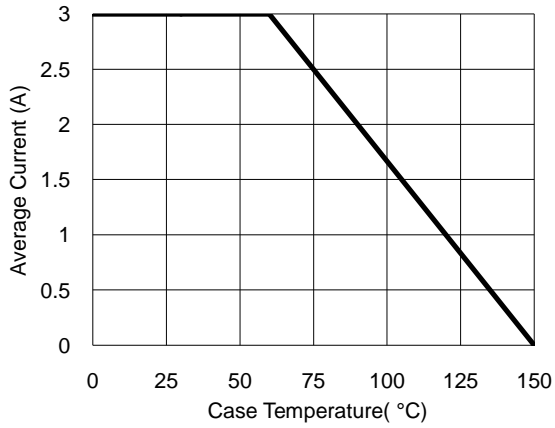


Fig.2- Surge Current Derating Curve

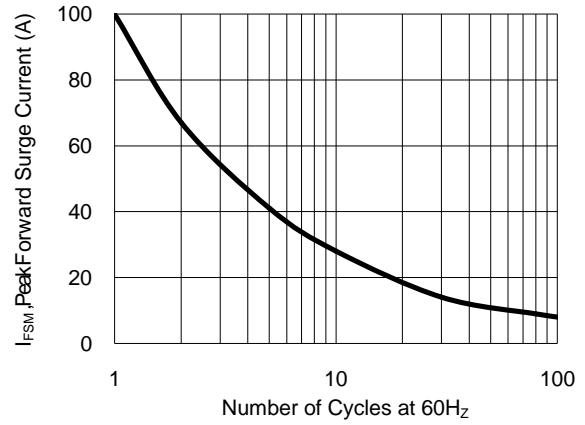


Fig.3- Typical Forward Voltage Characteristic

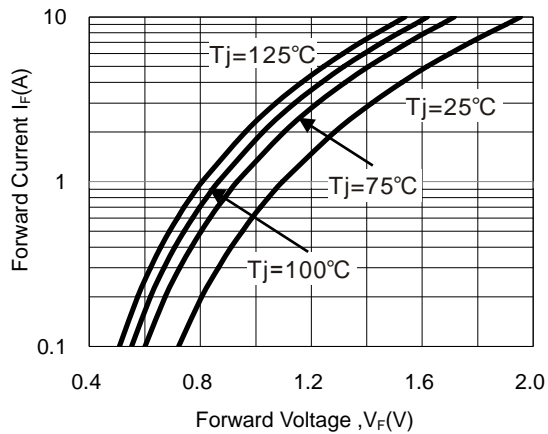
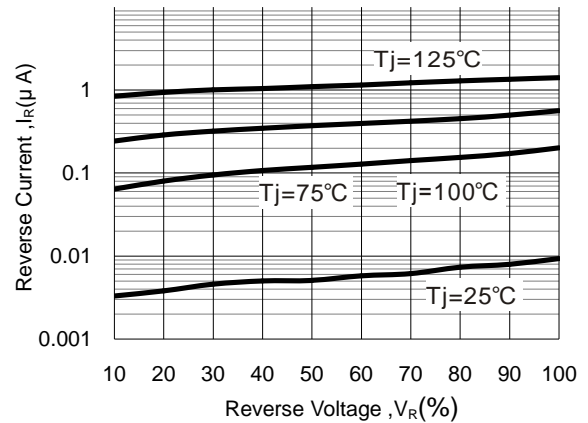


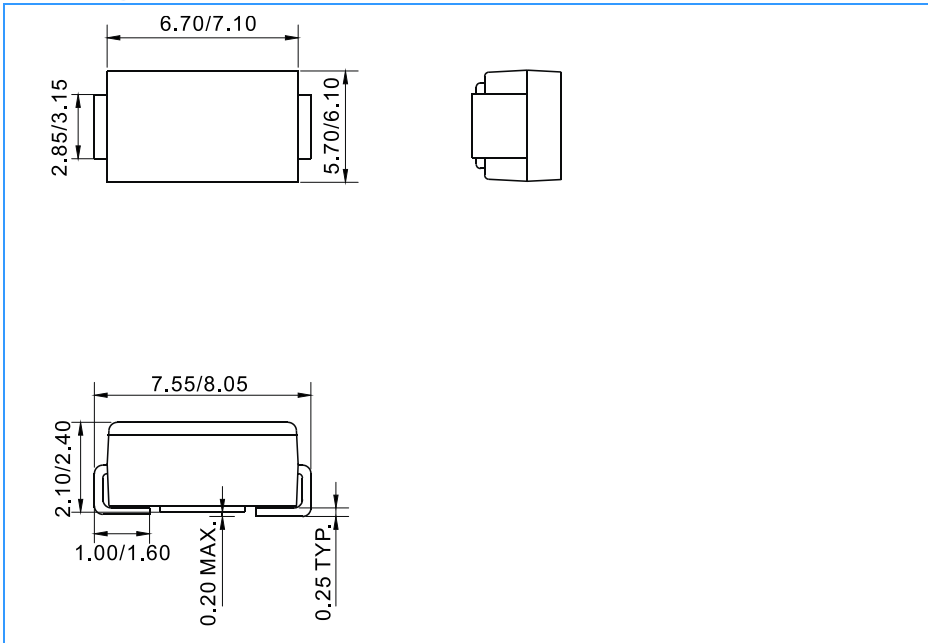
Fig.4- Typical Reverse Characteristic



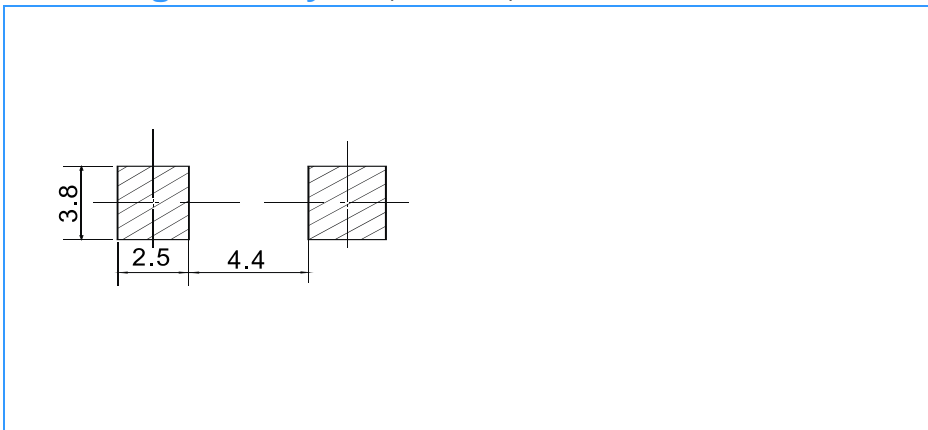
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Package Outline Dimensions(unit:mm)



Mounting Pad Layout(unit:mm)



Ordering Information

| Part No. | Marking | Package | Shipping |
|----------|---------|---------|------------------|
| ES3K | ES3K | SMC | 3000 / Tape&Reel |