

Super-Fast Rectifiers

ES3ABF--ES3DBF

Features

- For surface mounted applications
- Low profile package
- Low forward voltage drop
- High surge current capability
- RoHS Compliant



Mechanical Data

- Case: SMBF 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 | ES3ABF | ES3BBF | ES3CBF | ES3DBF | Units |
|------------------------------------------------------------|--------------------|--------|--------|--------|--------|-------|
| Peak repetitive reverse voltage | V _{RRM} | 50 | 100 | 150 | 200 | V |
| RMS reverse voltage | V _{RMS} | 35 | 70 | 105 | 140 | V |
| DC blocking voltage | V _{DC} | 50 | 100 | 150 | 200 | 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 | ES3ABF | ES3BBF | ES3CBF | ES3DBF | Units |
|----------------------------------------|------------------|------------------|--------|--------|--------|-------|
| Typical thermal resistance (Note 1) | R _{θJA} | 65 | | | | °C/W |
| | R _{θJC} | 16 | | | | |
| | R _{θJL} | 15 | | | | |
| 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 | -- | 0.95 | V |
| Maximum Reverse current | I _R | Rated V _R | @T _A =25°C | -- | 10 | μA |
| | | | @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

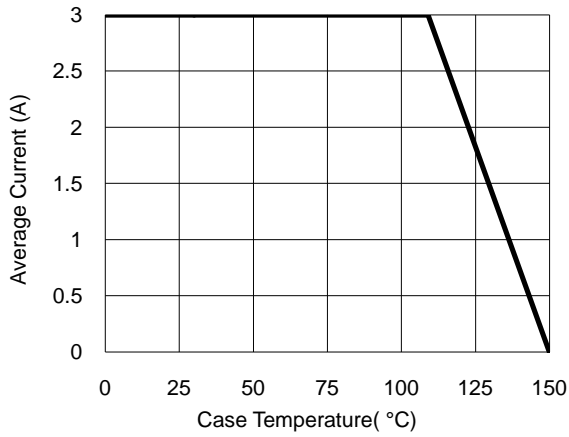


Fig.2- Surge Current Derating Curve

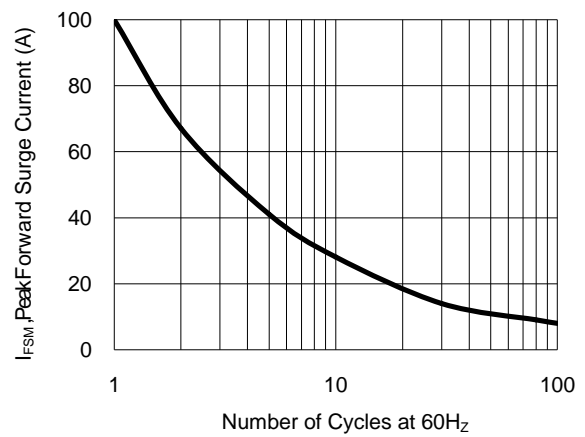


Fig.3- Typical Forward Voltage Characteristic

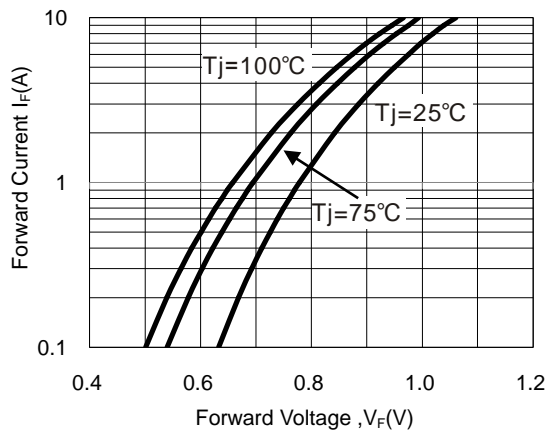
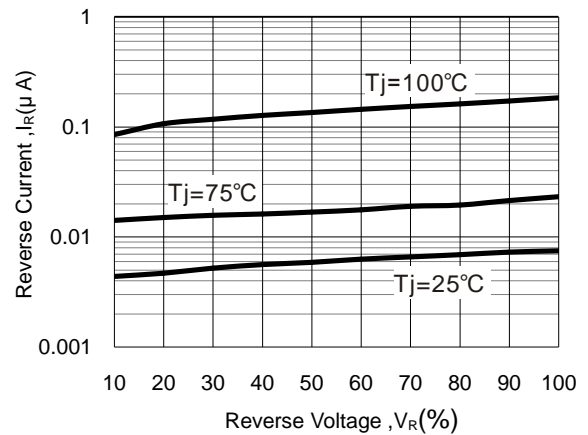


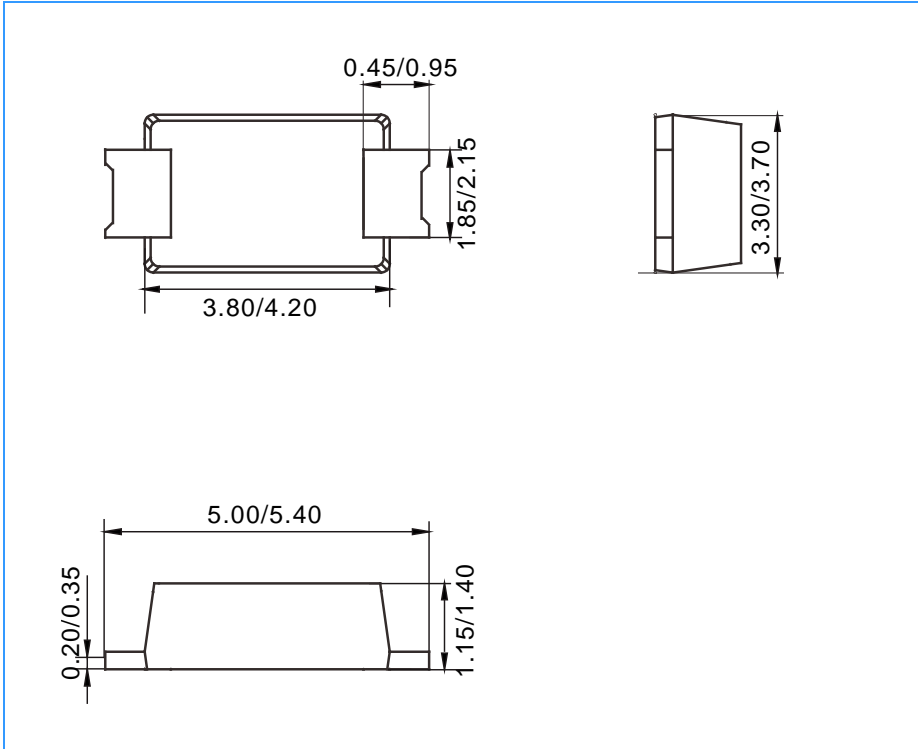
Fig.4- Typical Reverse Characteristic



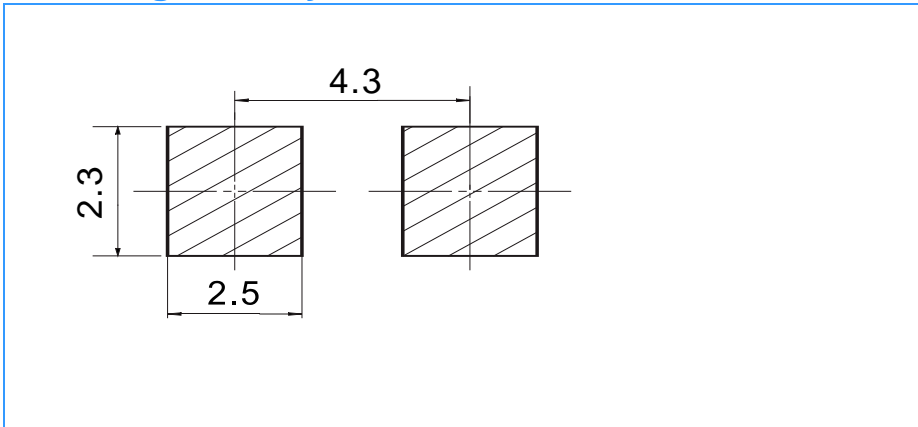
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Package Outline Dimensions(unit:mm)



Mounting Pad Layout(unit:mm)



Ordering Information

| Part No. | Marking | Package | Shipping |
|----------|---------|---------|------------------|
| ES3ABF | ES3ABF | SMBF | 4000 / Tape&Reel |
| ES3BBF | ES3BBF | SMBF | 4000 / Tape&Reel |
| ES3CBF | ES3CBF | SMBF | 4000 / Tape&Reel |
| ES3DBF | ES3DBF | SMBF | 4000 / Tape&Reel |