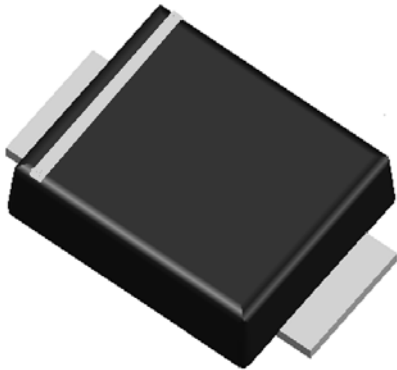


Surface Mount Fast Recovery Rectifier

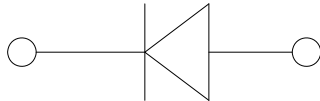


Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Fast reverse recovery time
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

Typical Applications

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication.



Mechanical Data

- **Package:** SMBF
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■ Maximum Ratings (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | GR3ABF | GR3BBF | GR3DBF | GR3GBF | GR3JBF | GR3KBF | GR3MBF | |
|---|------------------|------------------|------------|--------|--------|--------|--------|--------|--------|--|
| Device marking code | | | GR3ABF | GR3BBF | GR3DBF | GR3GBF | GR3JBF | GR3KBF | GR3MBF | |
| Maximum Repetitive Peak Reverse Voltage | VRRM | V | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | |
| Maximum RMS Voltage | VRMS | V | 35 | 70 | 140 | 280 | 420 | 560 | 700 | |
| Maximum DC blocking Voltage | VDC | V | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | |
| Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1) | I _O | A | 3.0 | | | | | | | |
| Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T _j =25°C | I _{FSM} | A | 100 | | | | | | | |
| Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T _j =25°C | | | 200 | | | | | | | |
| Current squared time @1ms≤t≤8.3ms T _j =25°C, Rating of per diode | I ² t | A ² s | 41.5 | | | | | | | |
| Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C | C _j | pF | 40 | | | | 30 | | | |
| Storage temperature | T _{stg} | °C | -55 ~ +150 | | | | | | | |
| Junction temperature | T _j | °C | -55 ~ +150 | | | | | | | |



GR3ABF THRU GR3MBF

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | GR3ABF | GR3BBF | GR3DBF | GR3GBF | GR3JBF | GR3KBF | GR3MBF |
|---|----------------|------|--|--------|--------|--------|--------|--------|--------|--------|
| Maximum instantaneous forward voltage drop per diode | V _F | V | I _{FM} =3.0A | 1.3 | | | | | | |
| Maximum reverse recovery time | t _r | ns | I _F =0.5A, I _R =1.0A, I _{rr} =0.25A | 150 | | | 250 | | 500 | |
| Maximum DC reverse current at rated DC blocking voltage per diode | I _R | μA | T _j =25°C | 5.0 | | | | | | |
| | | | T _j =125°C | 100 | | | | | | |

■ Thermal Characteristics (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | GR3ABF | GR3BBF | GR3DBF | GR3GBF | GR3JBF | GR3KBF | GR3MBF |
|----------------------------|-----------------------|------|--------|--------|--------|--------|--------|--------|--------|
| Typical Thermal Resistance | R _{θJ-A} (1) | °C/W | 60 | | | | | | |
| | R _{θJ-L} (1) | | 20 | | | | | | |
| | R _{θJ-C} (1) | | 18 | | | | | | |

Note:
 (1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas

■ Characteristics (Typical)

FIG.1: I_o-T_L Curve

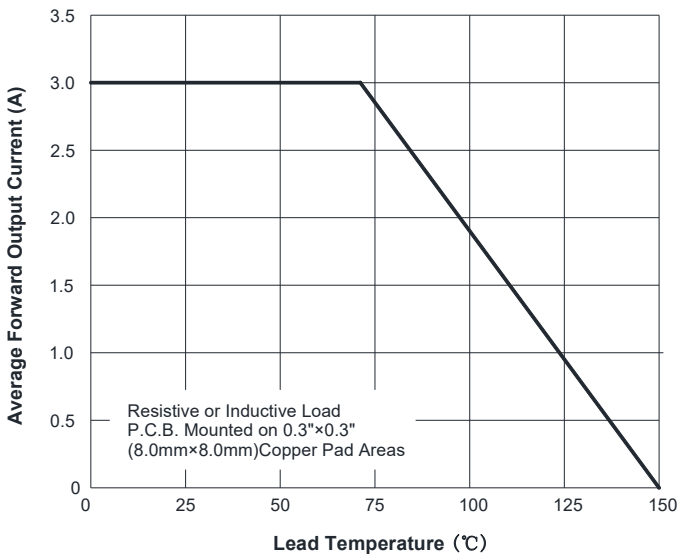
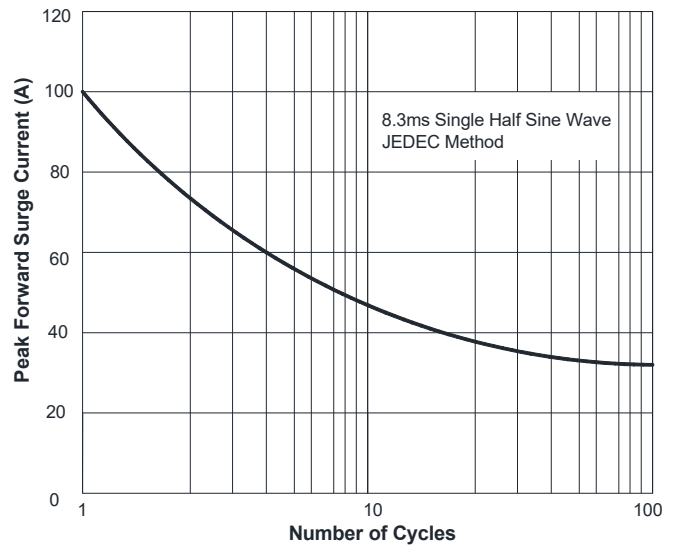


FIG.2: Forward Surge Current Capability





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FIG.3: Typical Forward Voltage

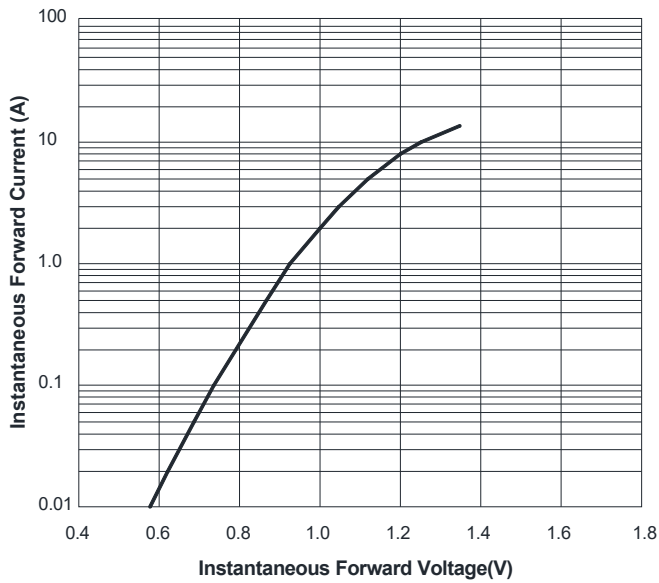


FIG.4: Typical Reverse Characteristics

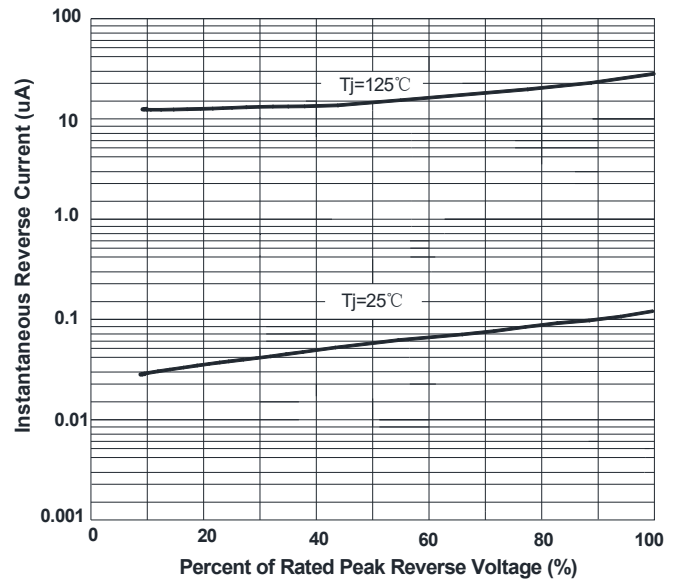
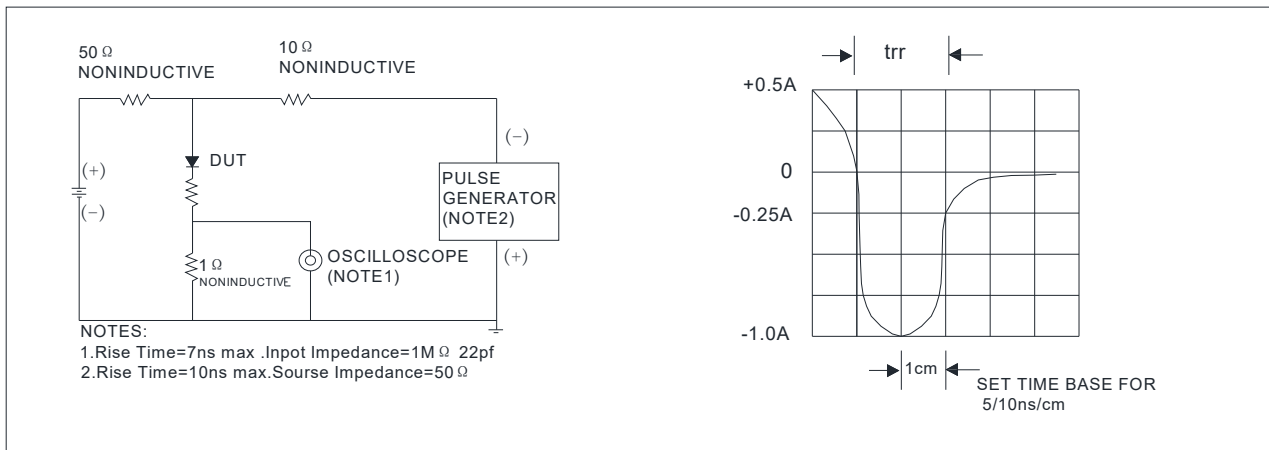


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



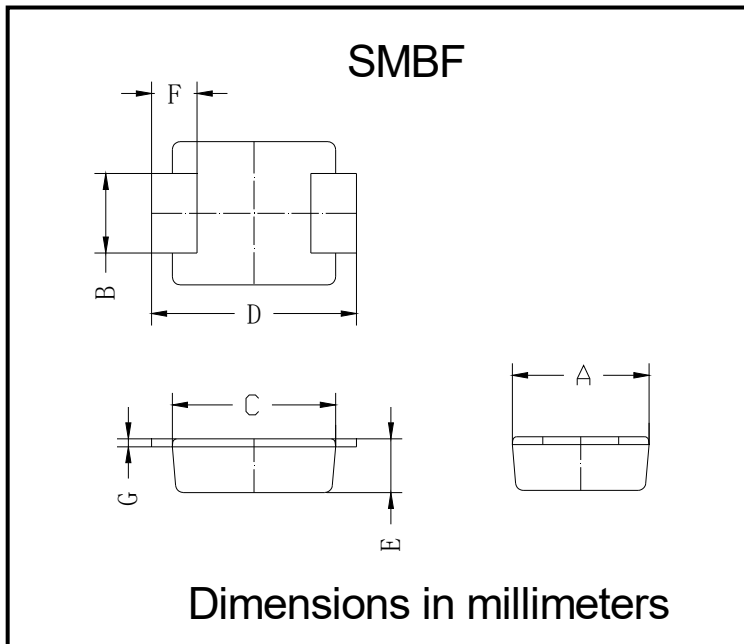
Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|-----------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| GR3ABF - GR3MBF | F1 | Approximate 0.065 | 5000 | / | 80000 | 13" reel |



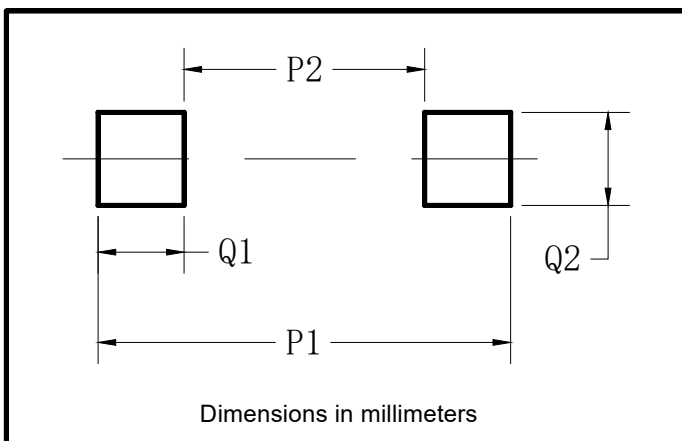
GR3ABF THRU GR3MBF

■ Outline Dimensions



| SMBF | | |
|------|------|------|
| Dim | Min | Max |
| A | 3.40 | 3.80 |
| B | 1.90 | 2.10 |
| C | 4.15 | 4.45 |
| D | 5.10 | 5.60 |
| E | 1.05 | 1.55 |
| F | 0.70 | 1.35 |
| G | 0.15 | 0.25 |

■ Suggested pad layout



| Dim | Milimeters |
|-----|------------|
| P1 | 6.20 |
| P2 | 2.40 |
| Q1 | 1.90 |
| Q2 | 2.20 |



GR3ABF THRU GR3MBF

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