



DESCRIPTION

The MBR0520F~MBR0540F are available in SOD-123FL package.

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Low power loss, high efficiency
- For use in low voltage high frequency inverters, free wheeling, and polarity protection applications
- Guarding for over voltage protection
- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Available in SOD-123FL package

ORDERING INFORMATION

| Package Type | Part Number |
|--|--------------------|
| SOD-123FL | MBR0520F |
| | MBR0530F |
| | MBR0540F |
| Note | SPQ: 3,000pcs/Reel |
| AiT provides all RoHS Compliant Products | |

MECHANICAL DATA

Case: SOD-123FL/MINI SMA

molded plastic over sky die

Terminals: Tin Plated, solderable per

MIL-STD-750, Method 2026

Polarity: Color band denotes cathode end

Mounting Position: Any

Weight: 0.0155 g

Handling precaution: None

PIN DESCRIPTION





ELECTRICAL CHARACTERISTIC

at 25°C ambient temperature unless otherwise specified.

| Parameter | Symbol | MBR0520F | MBR0530F | MBR0540F | Unit | |
|---|----------------|------------|----------|------------|------|----|
| Maximum & Thermal Characteristics Ratings | | | | | | |
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 20 | 30 | 40 | V | |
| Maximum RMS Voltage | V_{RMS} | 14 | 21 | 28 | V | |
| Maximum DC Blocking Voltage | V_{DC} | 20 | 30 | 40 | V | |
| Maximum Average Forward Rectified Current at $T_A = 75^\circ\text{C}$ | $I_{F(AV)}$ | 0.5 | | | A | |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I_{FSM} | 30 | | | A | |
| Typical Thermal Resistance ^{NOTE1} | $R\theta_{JA}$ | 110 | | | °C/W | |
| | $R\theta_{JC}$ | 40 | | | | |
| Operating Junction Temperature Range | T_J | -55 ~ +125 | | -55 ~ +150 | °C | |
| Storage Temperature Range | T_{STG} | -65 ~ +175 | | | | °C |
| Electrical Characteristics Ratings | | | | | | |
| Maximum Instantaneous Forward Voltage at ($I_F = 0.1\text{A}$, $T_J = 25^\circ\text{C}$) ($I_F = 0.5\text{A}$, $T_J = 25^\circ\text{C}$) | V_F | 0.3 | 0.375 | - | V | |
| | | 0.385 | 0.450 | 0.55 | | |
| Maximum DC Reverse Current At Rated DC Blocking Voltage $T_A = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$ | I_R | 0.25 | 0.130 | 0.04 | mA | |
| | | 8 | 10 | 10 | | |
| Typical Junction Capacitance at 4.0V, 1MHz | C_J | 160 | | | PF | |

NOTE1:8.0mm² (.013mm thick) land areas



TYPICAL CHARACTERISTICS

T_A = 25°C, unless otherwise noted

Figure 1. Forward Current Derating Curve

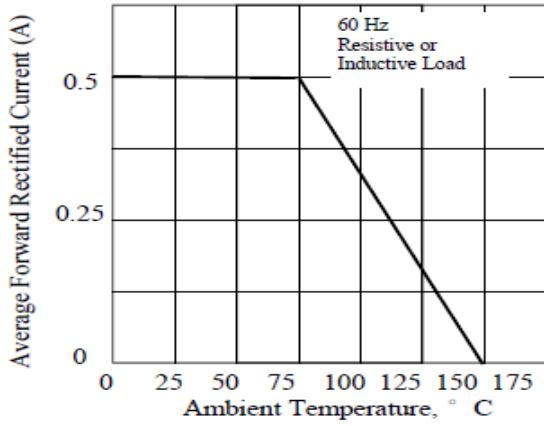


Figure 3. Typical Instantaneous Forward Characteristics

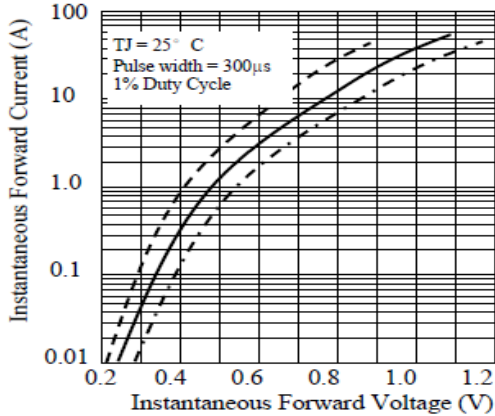


Figure 5. Typical Transient Thermal Impedance

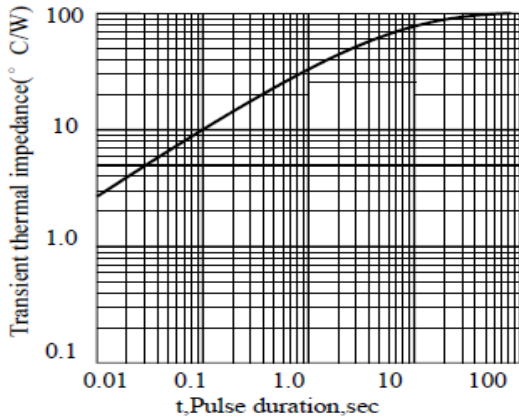


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

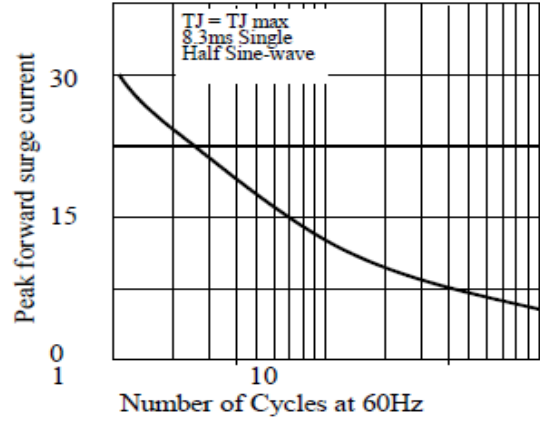


Figure 4. Typical Reverse Characteristics

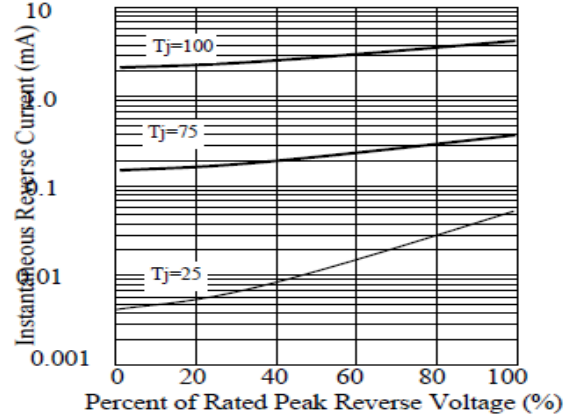
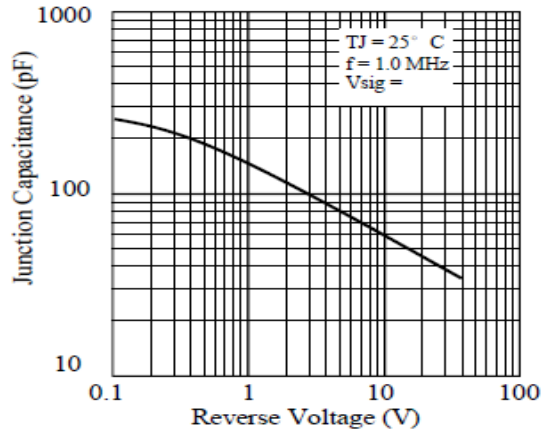


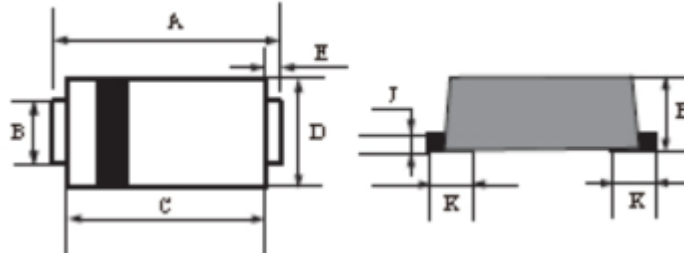
Figure 6. Typical Junction Capacitance





PACKAGE INFORMATION

Dimension in SOD-123FL Package (Unit: mm)



| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|----------|-------|
| | MIN | MAX | MIN | MAX |
| A | 3.5 | 3.9 | 0.138 | 0.159 |
| B | 0.75 | 0.95 | 0.029 | 0.037 |
| C | 2.6 | 3.0 | 0.103 | 0.119 |
| D | 1.6 | 2.0 | 0.063 | 0.079 |
| E | 0.45TYP | | 0.018TYP | |
| H | 0.9 | 1.2 | 0.036 | 0.047 |
| J | 0.12 | 0.22 | 0.005 | 0.009 |
| K | 0.8TYP | | 0.032TYP | |

Suggested solder pad layout



Dimensions in inches and (millimeters)

| Package | A | B | C |
|-----------|-------------|-------------|-------------|
| SOD-123FL | 0.044(1.10) | 0.040(1.00) | 0.079(2.00) |



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