



DESCRIPTION

The MBR120E~MBR1200E is available in SOD-323HE Package

ORDERING INFORMATION

| Package Type | Part Number |
|--|--------------------|
| SOD-323HE | MBR120E |
| | MBR130E |
| | MBR140E |
| | MBR150E |
| | MBR160E |
| | MBR180E |
| | MBR1100E |
| | MBR1150E |
| | MBR1200E |
| Note | SPQ: 3,000pcs/Reel |
| AiT provides all RoHS Compliant Products | |

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-323HE Package

MECHANICAL DATA

Case: SOD-323HE

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: 0.011 g

Handling precaution: None

PIN DESCRIPTION





MAXIMUM & THERMAL CHARACTERISTICS RATINGS

at 25°C ambient temperature unless otherwise specified.

| Parameter | Symbol | MBR 120E | MBR 130E | MBR 140E | MBR 150E | MBR 160E | MBR 180E | MBR 1100E | MBR 1150E | MBR 1200E | Unit |
|---|--------------------------------------|------------|----------|----------|----------|----------|----------|-----------|-----------|-----------|------|
| Maximum Repetitive Peak Reverse Voltage | V _{RRM} | 20 | 30 | 40 | 50 | 60 | 80 | 100 | 150 | 200 | V |
| Maximum RMS Voltage | V _{RMS} | 14 | 21 | 28 | 35 | 42 | 56 | 70 | 105 | 140 | V |
| Maximum DC Blocking Voltage | V _{DC} | 20 | 30 | 40 | 50 | 60 | 80 | 100 | 150 | 200 | V |
| Maximum Average Forward Rectified Current at T _C = 75°C | I _{F(AV)} | 1.0 | | | | | | | | | A |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I _{FSM} | 22 | | | | | | | | | A |
| Typical Thermal Resistance ^{NOTE1} | R _{θJA} R _{θJL} | 220 50 | | | | | | | | | °C/W |
| Operating Junction Temperature Range | T _J | -55 ~ +150 | | | | | | | | | °C |
| Storage Temperature Range | T _{STG} | -65 ~ +150 | | | | | | | | | °C |

ELECTRICAL CHARACTERISTICS RATINGS

at 25°C ambient temperature unless otherwise specified.

| Parameter | Symbol | MBR 120E | MBR 130E | MBR 140E | MBR 150E | MBR 160E | MBR 180E | MBR 1100E | MBR 1150E | MBR 1200E | Unit |
|--|----------------|------------|--------------|----------|----------|----------|----------|-----------|-----------|-----------|------|
| Maximum Instantaneous Forward Voltage at (I _F =0.7 A, T _J =25°C) (I _F =1.0 A, T _J =25°C) | V _F | | 0.48 0.55 | | | 0.70 | 0.85 | 0.90 | 0.92 | | V |
| Maximum DC Reverse Current at Rated DC Blocking Voltage T _A =25°C T _J =125°C | I _R | 0.02 10 | | | | | | | | | mA |
| Typical junction capacitance at 4.0V, 1MHz | C _J | 160 | | | | | | | | | pF |

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



TYPICAL CHARACTERISTICS

Figure 1. Forward Current Derating Curve

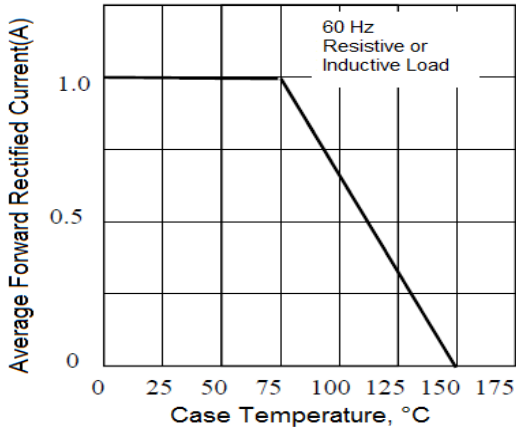


Figure 3. Typical Instantaneous Forward Characteristics

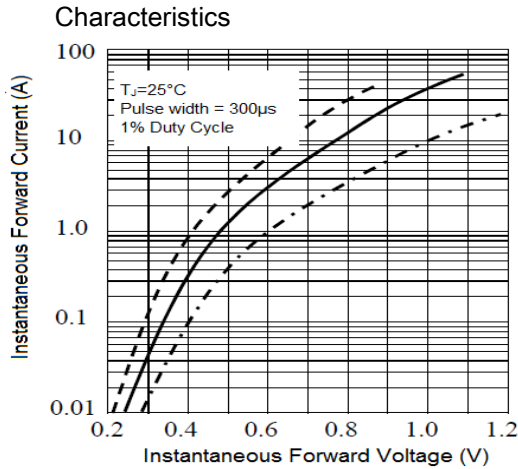


Figure 5. Typical Transient Thermal Impedance

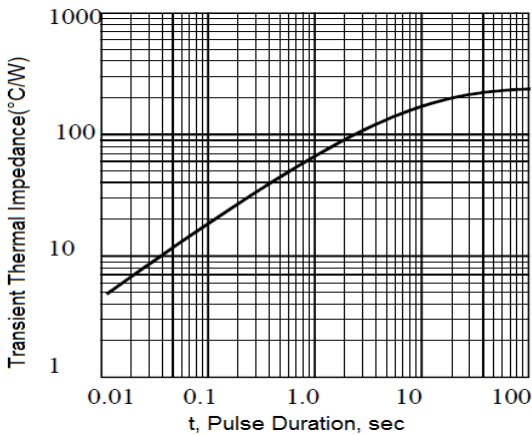


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

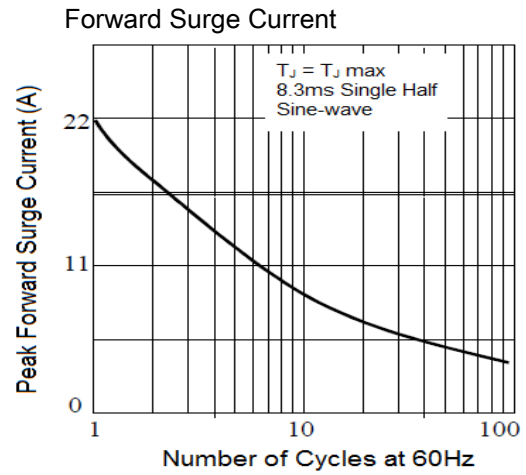


Figure 4. Typical Reverse Characteristics

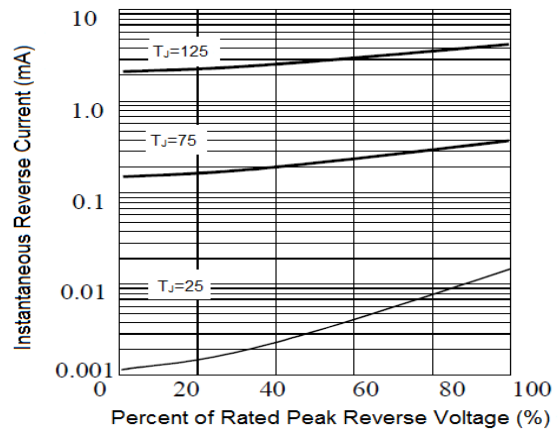
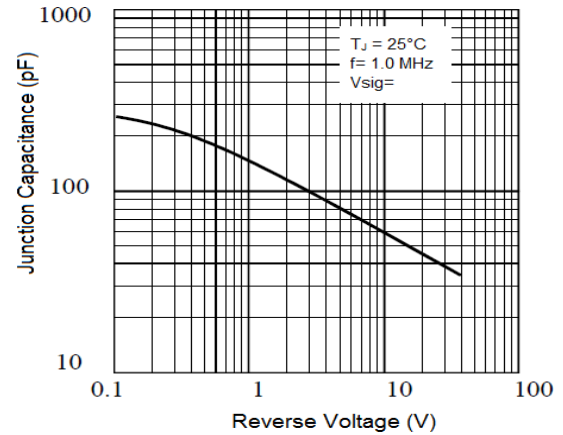


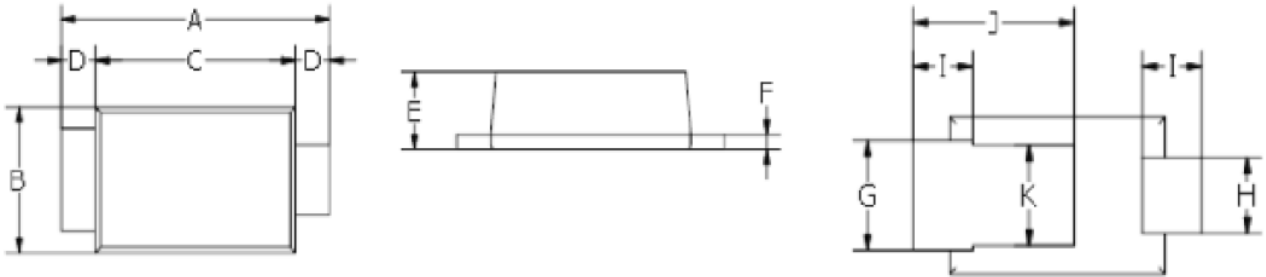
Figure 6. Typical Junction Capacitance





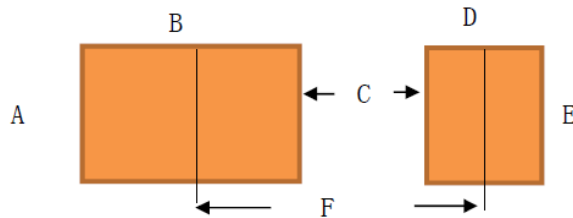
PACKAGE INFORMATION

Dimension in SOD-323HE (Unit: mm)



| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|-------|-----------|-------|
| | Min | Max | Min | Max |
| A | 2.300 | 2.700 | 0.091 | 0.106 |
| B | 1.200 | 1.400 | 0.047 | 0.055 |
| C | 1.750 | 1.950 | 0.069 | 0.077 |
| D | 0.300 TYP | | 0.012 TYP | |
| E | 0.550 | 0.750 | 0.022 | 0.030 |
| F | 0.100 | 0.200 | 0.004 | 0.008 |
| G | 0.650 | 0.950 | 0.026 | 0.037 |
| H | 0.500 | 0.700 | 0.020 | 0.028 |
| I | 0.400 | 0.800 | 0.016 | 0.031 |
| J | 1.150 | 1.550 | 0.045 | 0.061 |
| K | 0.800 TYP | | 0.032 TYP | |

Suggested solder pad layout



Dimensions in inches and (millimeters)

| Package | A | B | C | D | E | F |
|-----------|-------------|-------------|------------|------------|-------------|-------------|
| SOD-323HE | 0.044(1.10) | 0.079(2.00) | 0.019(0.5) | 0.032(0.8) | 0.040(1.00) | 0.075(1.90) |



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