

MBR540xS THRU MBR5200xS

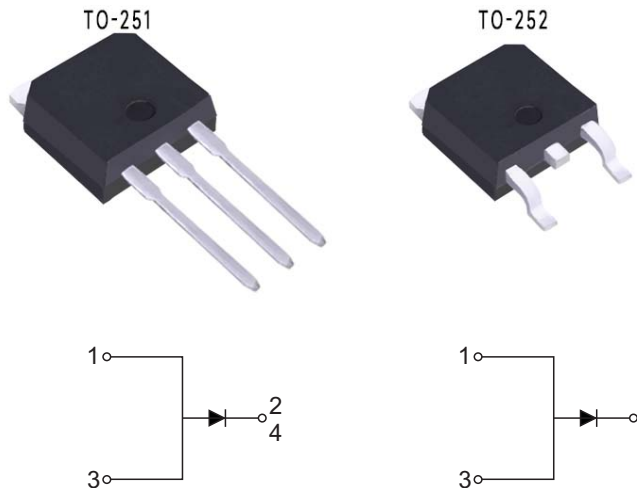
SCHOTTKY BARRIER RECTIFIERS

Reverse Voltage - 40 to 200 V

Forward Current - 5.0 A

FEATURES

- High current capability
- Low forward voltage drop
- Low power loss, high efficiency
- High surge capability
- High temperature soldering guaranteed
- Mounting position: any



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

| CHARACTERISTICS | TO-251 | MBR540VS | MBR545VS | MBR560VS | MBR5100VS | MBR5150VS | MBR5200VS | Units |
|--|-----------------|------------|----------|----------|------------|------------|-----------|-------|
| | TO-252 | MBR540DS | MBR545DS | MBR560DS | MBR5100DS | MBR5150DS | MBR5200DS | |
| Maximum Recurrent Peak Reverse Voltage | V_{RRM} | 40 | 45 | 60 | 100 | 150 | 200 | V |
| Maximum RMS voltage | V_{RMS} | 28 | 31.5 | 42 | 70 | 105 | 140 | V |
| Maximum DC Blocking Voltage | V_{DC} | 40 | 45 | 60 | 100 | 150 | 200 | V |
| Maximum Average Forward Rectified Current | $I_{F(AV)}$ | 5.0 | | | | | | A |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) | I_{FSM} | 120 | | | | | | A |
| Max Instantaneous Forward Voltage at 5 A | V_F | 0.65 | | 0.70 | 0.85 | 0.90 | 0.92 | V |
| Maximum DC Reverse Current $T_a = 25^\circ\text{C}$ at Rated DC Reverse Voltage $T_a = 125^\circ\text{C}$ | I_R | 0.1 20 | | | 0.05 20 | | | mA |
| Typical Junction Capacitance ⁽¹⁾ | C_j | 600 | | 400 | | | | pF |
| Typical Thermal Resistance ⁽²⁾ | $R_{\theta JA}$ | 35 | | | | | | °C/W |
| Operating Junction Temperature Range | T_j | -55 ~ +150 | | | | -55 ~ +175 | | °C |
| Storage Temperature Range | T_{stg} | -55 ~ +150 | | | | -55 ~ +175 | | °C |

(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

(2) P.C.B. mounted with 10cmX10cmX1mm copper pad areas.

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Fig.1 TYPICAL FORWARD CURRENT DERATING CURVE

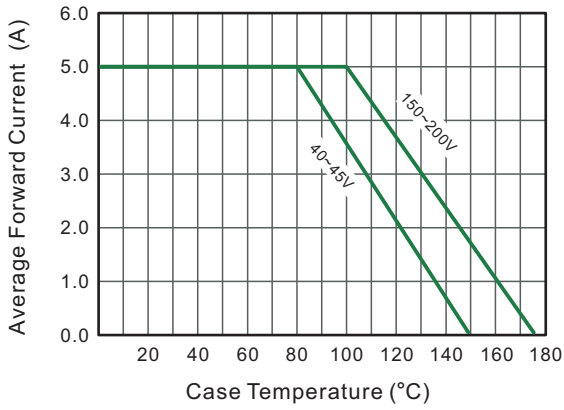


Fig.2 Typical Reverse Characteristics

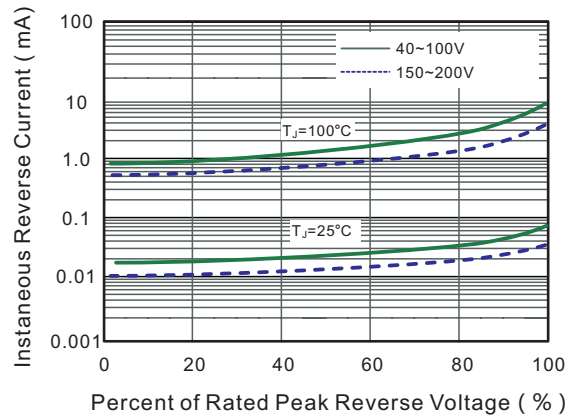


Fig.3 Typical Forward Characteristic

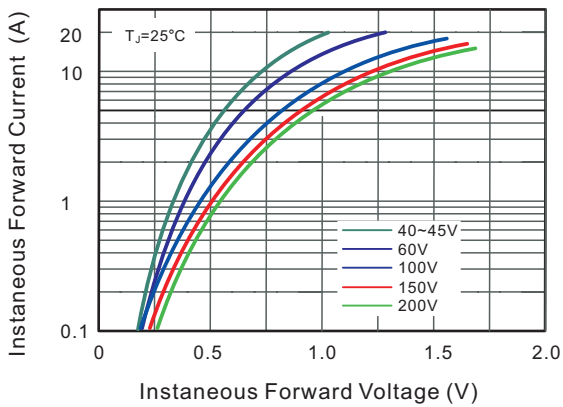


Fig.4 Typical Junction Capacitance

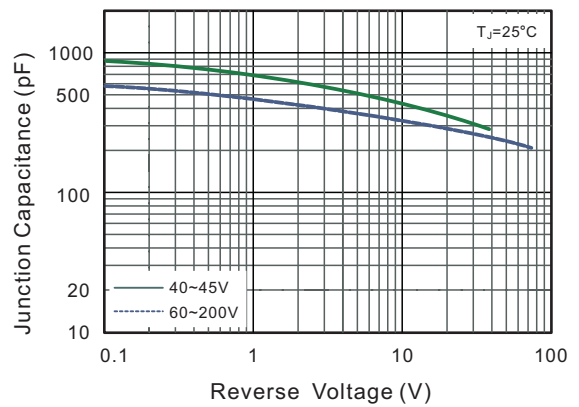


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

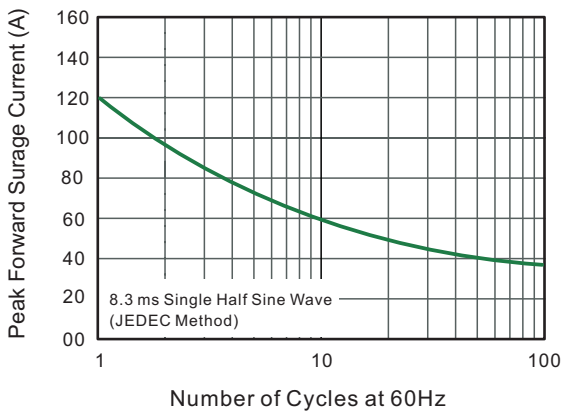
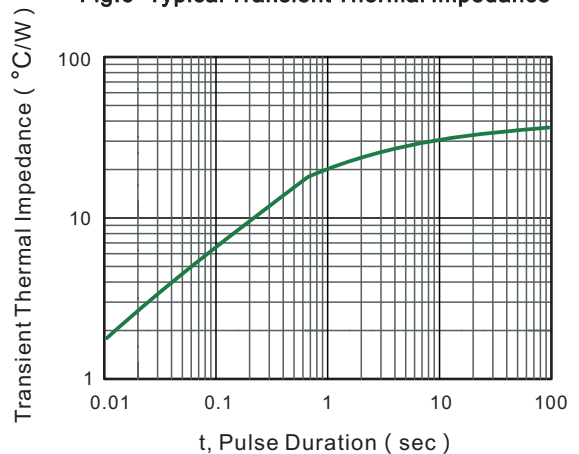
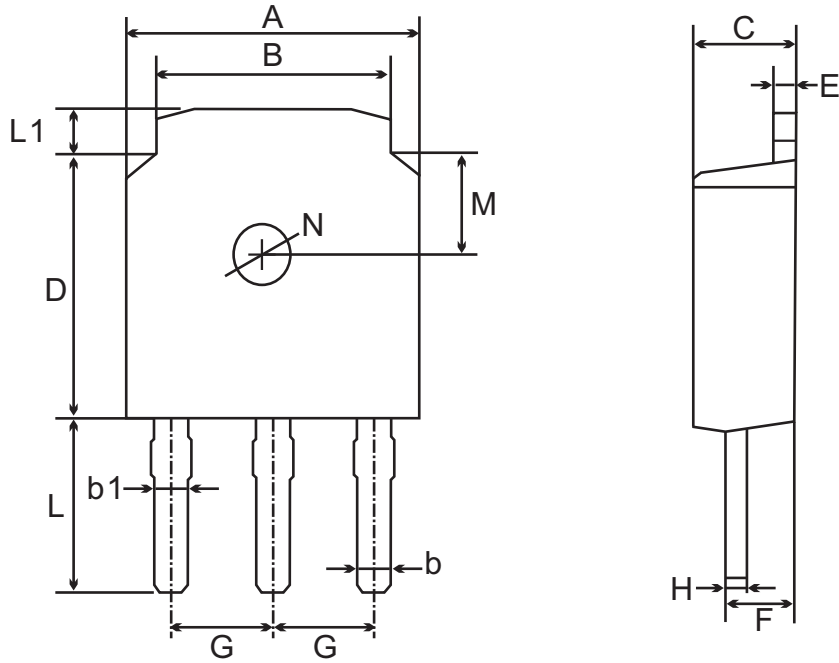


Fig.6- Typical Transient Thermal Impedance



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TO-251(D-PAK) Package Outline Dimensions

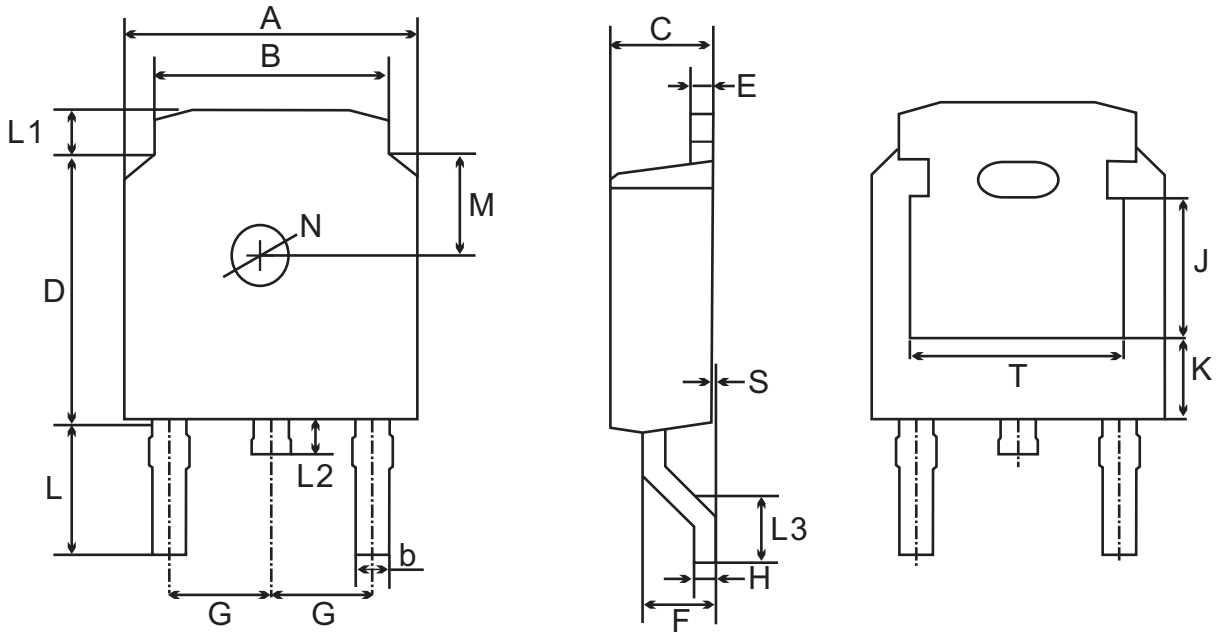


TO-251(I-PAK) mechanical data

| UNIT | | A | B | b | b1 | C | D | E | F | G | H | L | L1 | M | N |
|------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----------------|------|-----|-----|----------------|----------------|
| mm | max | 6.7 | 5.5 | 0.8 | 0.9 | 2.5 | 6.3 | 0.6 | 1.8 | 2.29 TYPICAL | 0.55 | 4.3 | 1.2 | 1.8 TYPICAL | 1.3 TYPICAL |
| | min | 6.3 | 5.1 | 0.3 | 0.76 | 2.1 | 5.9 | 0.4 | 1.3 | | 0.45 | 3.9 | 0.8 | | |
| mil | max | 264 | 217 | 31 | 35 | 98 | 248 | 24 | 71 | 90 TYPICAL | 22 | 169 | 47 | 71 TYPICAL | 51 TYPICAL |
| | min | 248 | 201 | 12 | 30 | 83 | 232 | 16 | 51 | | 18 | 154 | 31 | | |

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TO-252(D-PAK) Package Outline Dimensions



TO-252(D-PAK) mechanical data

| UNIT | | A | B | b | C | D | E | F | G | H | L | L1 | L2 | L3 | S | M | N | J | K | T |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|------|-----|-----|-----|------|-----|----------------|----------------|------|------|------|
| mm | max | 6.7 | 5.5 | 0.8 | 2.5 | 6.3 | 0.6 | 1.8 | 2.29 TYPICAL | 0.55 | 3.1 | 1.2 | 1.0 | 1.75 | 0.1 | 1.8 TYPICAL | 1.3 TYPICAL | 3.16 | 1.80 | 4.83 |
| | min | 6.3 | 5.1 | 0.3 | 2.1 | 5.9 | 0.4 | 1.3 | | 0.45 | 2.7 | 0.8 | 0.6 | 1.40 | 0.0 | | | ref. | ref. | ref. |
| mil | max | 264 | 217 | 31 | 98 | 248 | 24 | 71 | 90 TYPICAL | 22 | 122 | 47 | 39 | 69 | 4 | 71 TYPICAL | 51 TYPICAL | 124 | 71 | 190 |
| | min | 248 | 201 | 12 | 83 | 232 | 16 | 51 | | 18 | 106 | 31 | 24 | 55 | 0 | | | ref. | ref. | ref. |