



# MBR3040C-ST THRU MBR30200C-ST

## Schottky Bridge Rectifier

TO-263

Reverse Voltage - 40~200Volts

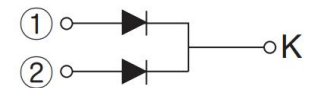
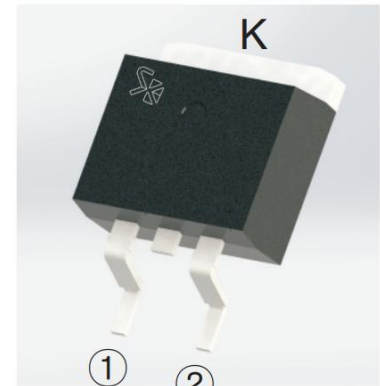
Forward Current - 30Amperes

### 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

Rating at 25°C ambient temperature unless otherwise specified.



| Parameter                                                                                       |            | Symbol             | MBR<br>3040<br>C-ST | MBR<br>3045<br>C-ST | MBR<br>3060<br>C-ST | MBR<br>30100<br>C-ST | MBR<br>30150<br>C-ST | MBR<br>30200<br>C-ST | Units |
|-------------------------------------------------------------------------------------------------|------------|--------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|-------|
| Maximum Repetitive Peak Reverse Voltage                                                         |            | V <sub>RRM</sub>   | 40                  | 45                  | 60                  | 100                  | 150                  | 200                  | V     |
| Maximum RMS Voltage                                                                             |            | V <sub>RMS</sub>   | 28                  | 32                  | 42                  | 70                   | 105                  | 140                  | V     |
| Maximum DC Blocking Voltage                                                                     |            | V <sub>DC</sub>    | 40                  | 45                  | 60                  | 100                  | 150                  | 200                  | V     |
| Maximum Average Forward Rectified Current                                                       | per diode  | I <sub>F(AV)</sub> | 15                  |                     |                     |                      |                      |                      | A     |
|                                                                                                 | per device |                    | 30                  |                     |                     |                      |                      |                      |       |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimpose on Rated Load(JEDEC Method) |            | I <sub>FSM</sub>   | 200                 |                     |                     |                      |                      |                      | A     |
| Maximum Instantaneous Forward Voltage at 15A DC Per leg                                         |            | V <sub>F</sub>     | 0.75                |                     | 0.80                | 0.88                 | 0.92                 | 0.95                 | V     |
| Maximum DC Reverse Current at Rated DC Blocking Voltage                                         | Ta = 25°C  | I <sub>R</sub>     | 0.1                 |                     |                     | 0.05                 |                      |                      | mA    |
|                                                                                                 | Ta = 125°C |                    | 20                  |                     |                     | 20                   |                      |                      |       |
| Typical Junction Capacitance <sup>(1)</sup>                                                     |            | C <sub>J</sub>     | 600                 |                     | 400                 |                      |                      |                      | pF    |
| Typical Thermal Resistance <sup>(2)</sup>                                                       |            | R <sub>θJA</sub>   | 45                  |                     |                     |                      |                      |                      | °C/W  |
| Operating Junction Temperature Range                                                            |            | T <sub>J</sub>     | -55~+150            |                     |                     |                      | -55~+175             |                      | °C    |
| Storage Temperature Range                                                                       |            | T <sub>STG</sub>   | -55~+150            |                     |                     |                      | -55~+175             |                      | °C    |

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

(2).P.C.B. mounted with 10cm\*10cm\*1mm copper pad areas



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## Typical Characteristics

Fig.1 TYPICAL FORWARD CURRENT DERATING CURVE

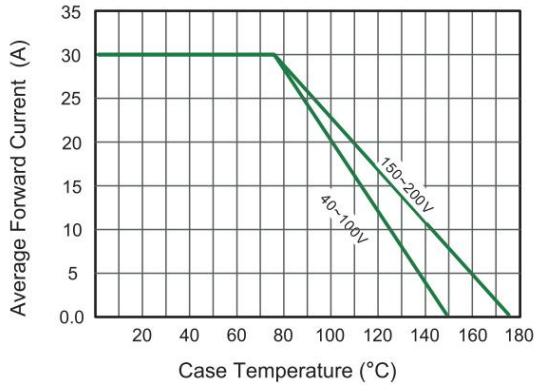


Fig.2 Typical Reverse Characteristics

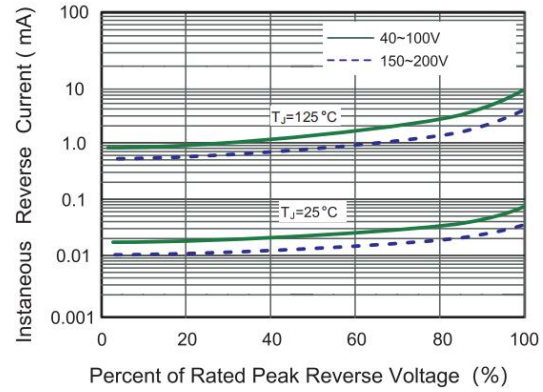


Fig.3 Typical Forward Characteristic(per leg)

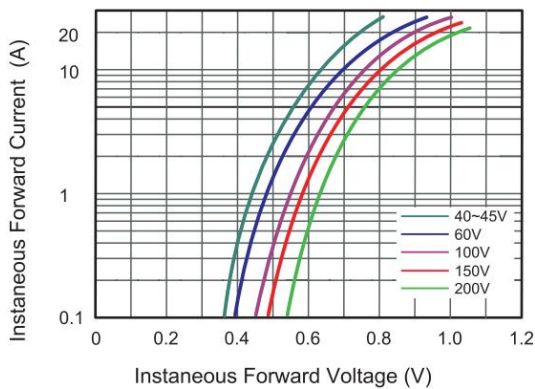


Fig.4 Typical Junction Capacitance

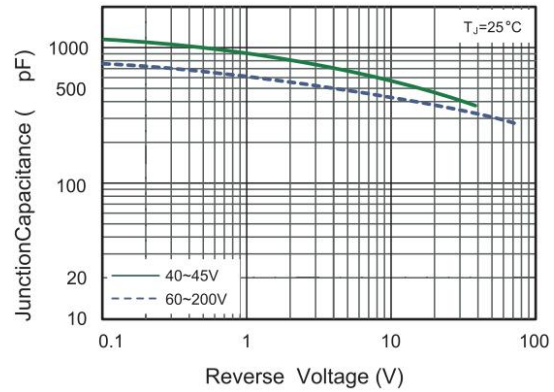


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

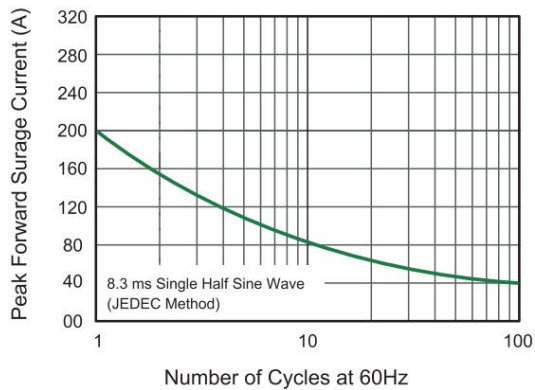
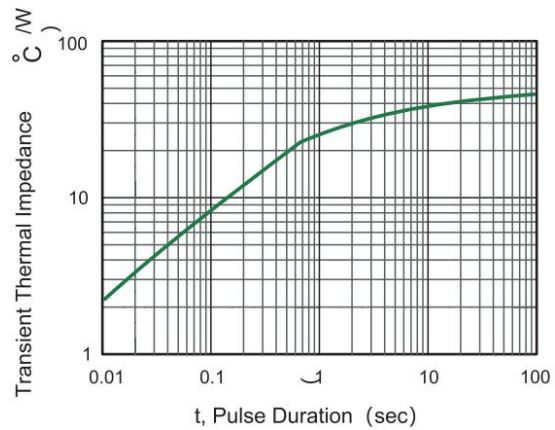


Fig.6- Typical Transient Thermal Impedance



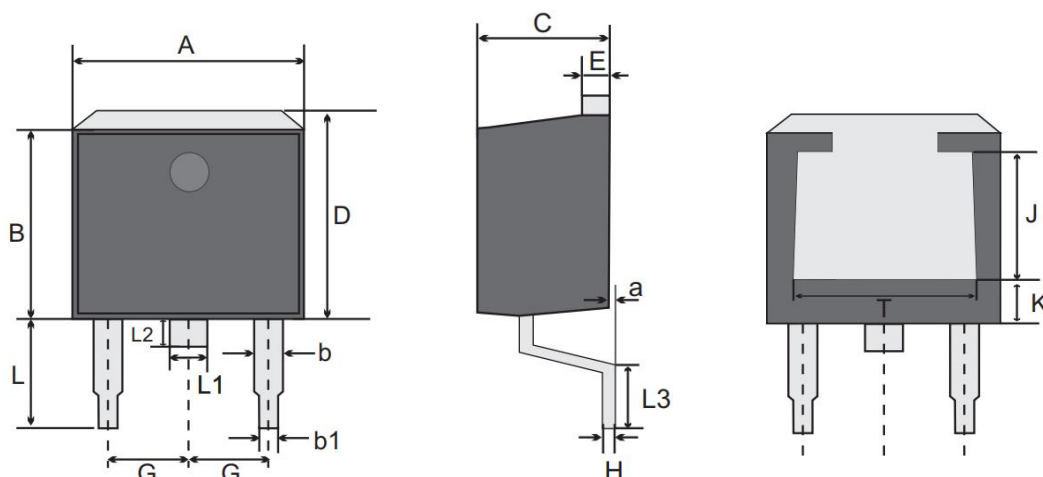


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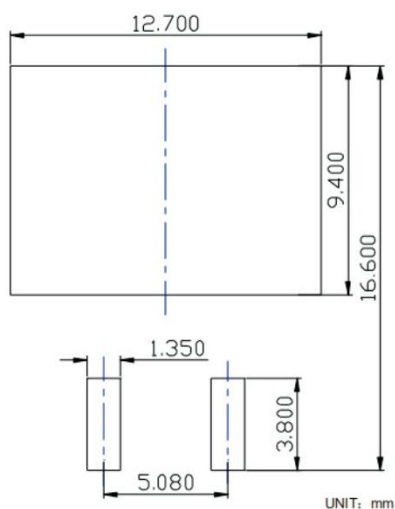
## Package Information

### TO-263

### Dimensions in mm



| UNIT |     | A    | B   | b    | b1   | C    | D     | E    | G    | H    | L   | L1   | L2  | L3   | a           | J           | T           | K            |
|------|-----|------|-----|------|------|------|-------|------|------|------|-----|------|-----|------|-------------|-------------|-------------|--------------|
| mm   | max | 10.4 | 9.0 | 1.47 | 0.91 | 4.80 | 10.28 | 1.40 | 2.74 | 0.58 | 6.0 | 1.47 | 1.4 | 3.18 | 0.1<br>ref. | 4.7<br>ref. | 7.7<br>ref. | 3.17<br>ref. |
|      | typ | 9.94 | 8.7 | 1.27 | 0.81 | 4.57 | 9.98  | 1.27 | 2.54 | 0.38 | 5.5 | 1.27 | 1.2 | 2.78 |             |             |             |              |
|      | min | 9.8  | 8.4 | 1.07 | /    | 4.40 | 9.68  | 1.20 | 2.34 | 0.30 | 5.0 | 1.07 | 1.0 | 2.38 |             |             |             |              |
| mil  | max | 409  | 354 | 58   | 36   | 189  | 405   | 55   | 108  | 23   | 236 | 58   | 55  | 125  | 4.0<br>ref. | 185<br>ref. | 303<br>ref. | 125<br>ref.  |
|      | typ | 391  | 343 | 50   | 32   | 180  | 393   | 50   | 100  | 15   | 217 | 50   | 47  | 109  |             |             |             |              |
|      | min | 386  | 331 | 42   | /    | 173  | 381   | 47   | 92   | 12   | 197 | 42   | 39  | 94   |             |             |             |              |



UNIT: mm

SUGGESTED SOLDER PAD LAYOUT