



# MBRB2040CT THRU MBRB20200CT

Reverse Voltage - 40 to 200 Volts Forward Current - 20.0 Ampere

## SCHOTTKY BARRIER GLASS PASSIVATED RECTIFIERS

### FEATURES

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

### MECHANICAL DATA

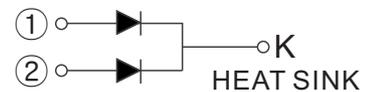
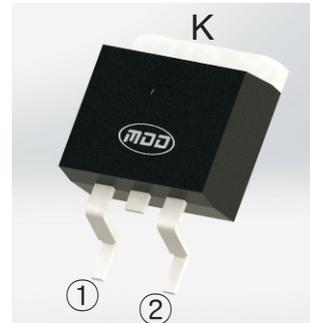
**Case:** TO-263 molded plastic body

**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

### TO-263(D<sup>2</sup>PAK)



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| MCHARACTERISTICS  | SYMBOL          | MBRB<br>2040CT | MBRB<br>2045CT | MBRB<br>2060CT | MBRB<br>20100CT | MBRB<br>20150CT | MBRB<br>20200CT | UNITS |
|---|-----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-------|
| Maximum repetitive 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 per diode per device  | $I_{F(AV)}$     | 10<br>20       |                |                |                 |                 |                 | A     |
| Peak forward surge current<br>8.3ms single half sine-wave<br>superimposed on rated load (JEDEC Method) per device | $I_{FSM}$       | 150            |                |                |                 |                 |                 | A     |
| Maximum instantaneous forward voltage at 10A DC Per leg   | $V_F$           | 0.70           | 0.75           | 0.85           | 0.90            | 0.92            |                 | V     |
| Maximum DC reverse current<br>at rated DC blocking voltage  | $I_R$           | 0.1<br>20      |                | 0.05<br>20     |                 |                 |                 | mA    |
| Typical junction capacitance (NOTE 1)   | $C_J$           | 600            | 400            |                |                 |                 |                 | pF    |
| Typical thermal resistance (NOTE 2)   | $R_{\theta JA}$ | 45             |                |                |                 |                 |                 | °C/W  |
| Operating junction temperature range  | $T_J$           | -55 to +150    |                |                |                 | -55 to +175     |                 | °C    |
| Storage temperature range   | $T_{STG}$       | -55 to +150    |                |                |                 | -55 to +175     |                 | °C    |

**Note:** 1. Measured at 1.0MHz and applied reverse voltage of 4.0V D.C.  
 2. PCB. Mounted on 10cm x 10cm x 1mm copper pad areas  
 3. The typical data above is for reference only.



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## Typical Characteristics

Fig.1 TYPICAL FORWARD CURRENT DERATING CURVE

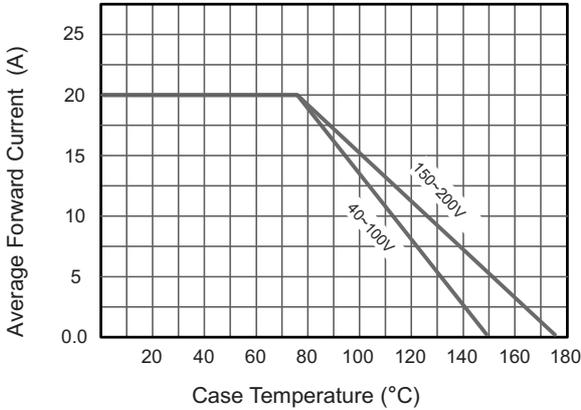


Fig.2 Typical Reverse Characteristics

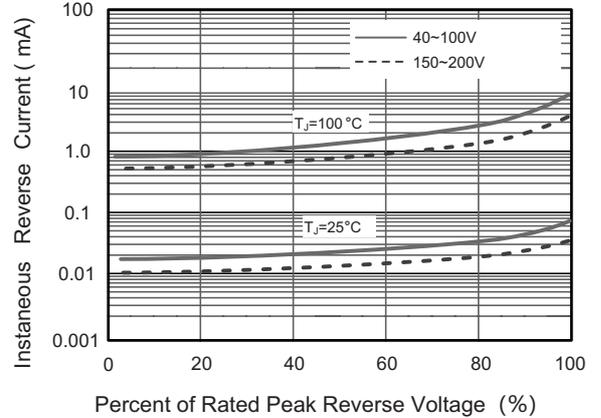


Fig.3 Typical Forward Characteristic(per leg)

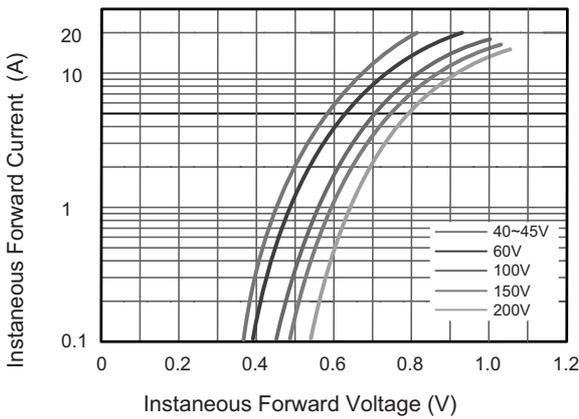


Fig.4 Typical Junction Capacitance

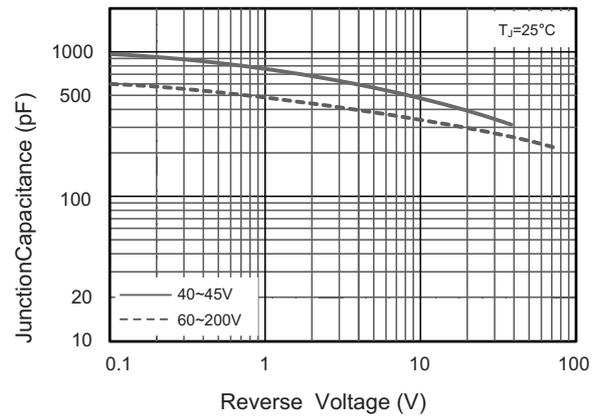


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

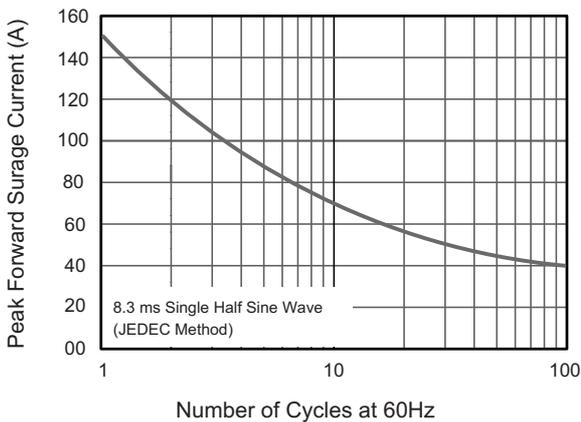
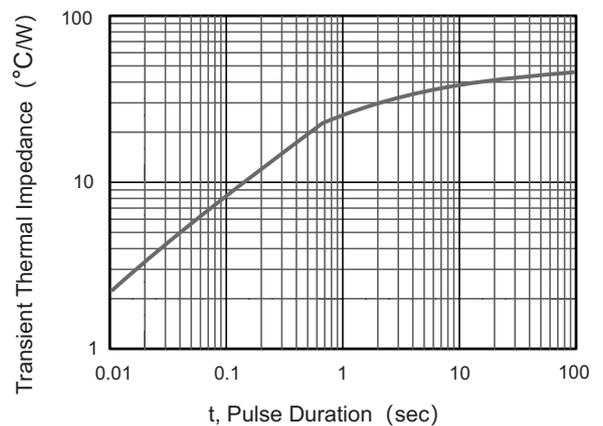


Fig.6- Typical Transient Thermal Impedance



The curve above is for reference only.

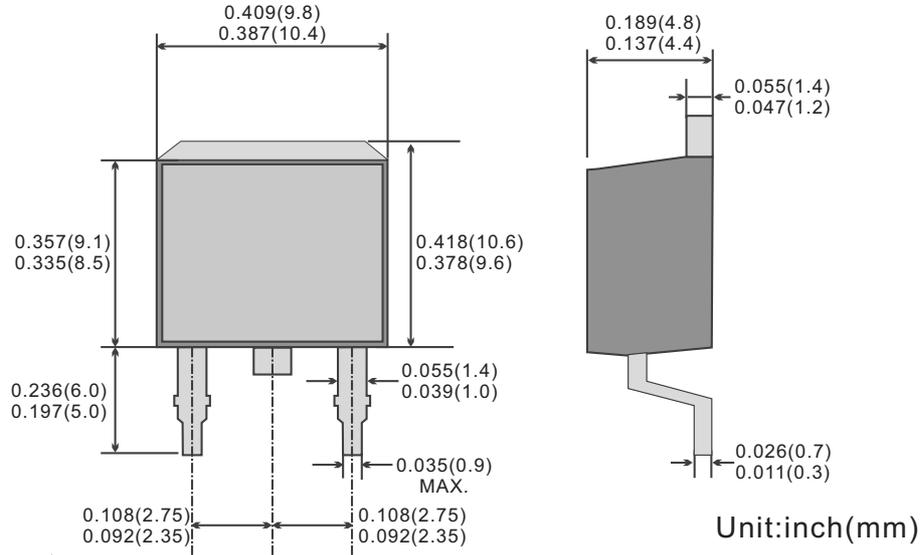


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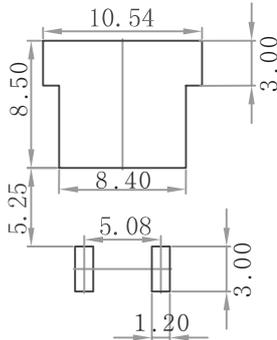
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## Outlitne Drawing

### TO-263(D<sup>2</sup>PAK) Package Outline Dimensions



### Suggested Pad Layout



#### Note:

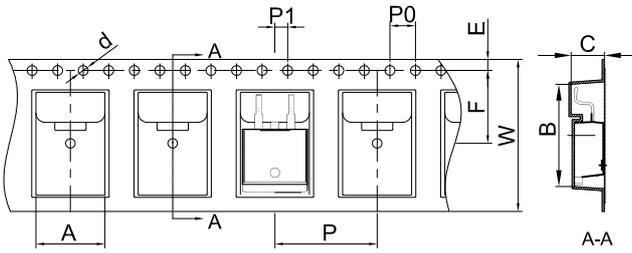
1. Controlling dimension:in/millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.



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## TO-263 Embossed Carrier Tapeape

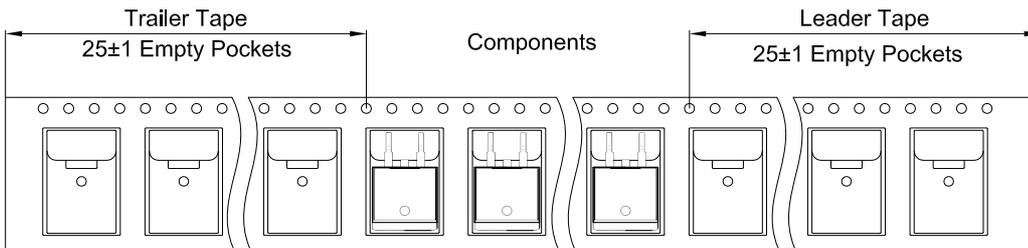


### Packaging Description:

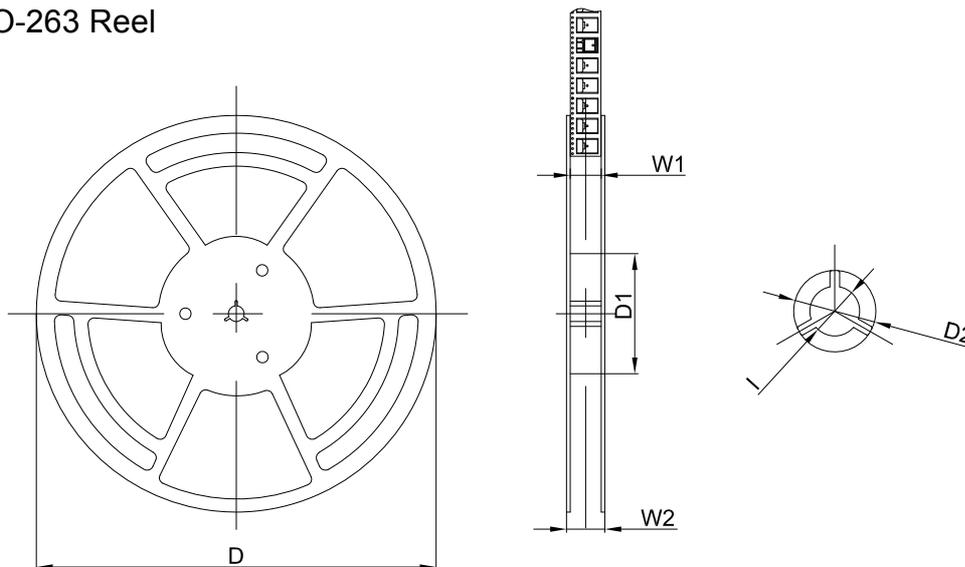
TO-263 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive laye, sealant, and anti-static sprayed agent. These reeled parts In standard option are shipped with 800 units per 13" or 33.0cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

| Dimensions are in millimeter |       |       |      |       |      |       |      |       |      |       |
|------------------------------|-------|-------|------|-------|------|-------|------|-------|------|-------|
| Pkg type                     | A     | B     | C    | d     | E    | F     | P0   | P     | P1   | W     |
| TO-263                       | 10.80 | 16.13 | 5.21 | Ø1.55 | 1.75 | 11.50 | 4.00 | 16.00 | 2.00 | 24.00 |

### TO-263 Tape Leader and Trailer



### TO-263 Reel



| Dimensions are in millimeter |         |        |        |      |      |        |
|------------------------------|---------|--------|--------|------|------|--------|
| Reel Option                  | D       | D1     | D2     | W1   | W2   | I      |
| 13" Dia                      | Ø330.00 | 100.00 | Ø21.00 | 24.4 | 30.4 | Ø13.00 |

| REEL    | Reel Size | Box       | Box Size(mm) | Carton    | Carton Size(mm) | G.W.(kg) |
|---------|-----------|-----------|--------------|-----------|-----------------|----------|
| 800 pcs | 13 Inch   | 1,600 pcs | 340×336×66   | 8,000 pcs | 400×353×365     |          |