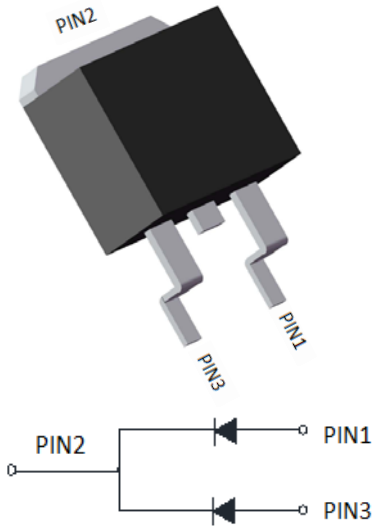


Schottky Diodes



Features

- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- Part no. with suffix "Q" means AEC-Q101 qualified

Typical Applications

Typical applications are in switching power supplies, converters, automotive, freewheeling diodes, and reverse battery protection.

Mechanical Data

- **Package:** TO-263
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked

■Maximum Ratings (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | MBRB20150CTQ |
|-----------------------------------------------------------------------------------------------|--------------------|------------------|--------------|
| Device marking code | | | MBRB20150CT |
| Repetitive peak reverse voltage | V _{RRM} | V | 150 |
| Average Rectified Output Current Per Diode (T _c =140°C) Total Device | I _{F(AV)} | A | 10 20 |
| Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T _a =25°C | I _{FSM} | A | 200 |
| Current Squared Time @1ms≤t≤8.3ms T _J =25°C | I ² t | A ² s | 166 |
| Storage Temperature | T _{stg} | °C | -55 ~ +175 |
| Junction Temperature | T _J | °C | -55 ~ +175 |

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | Typ | Max | |
|-----------------------------------------|----------------|------|----------------------------------------------|-----------------------|------|------|
| Instantaneous forward voltage per diode | V _F | V | I _F =10A T _J =25°C | 0.82 | 0.88 | |
| | | | I _F =10A T _J =125°C | 0.69 | 0.75 | |
| Typical junction capacitance per diode | C _J | pF | V _R =4V, f=1 MHz | 225 | - | |
| Instantaneous reverse current per diode | I _R | mA | V _R =150V | T _J =25°C | - | 0.05 |
| | | | | T _J =125°C | - | 1 |

■Thermal Characteristics (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | MBRB20150CTQ |
|--------------------------------------|-------------------|------|--------------|
| Typical thermal resistance per diode | R _{θJ-A} | °C/W | 50 |
| | R _{θJ-C} | °C/W | 2 |



MBRB20150CTQ

■ Characteristics (Typical)

Fig.1: Forward Current Derating Curve

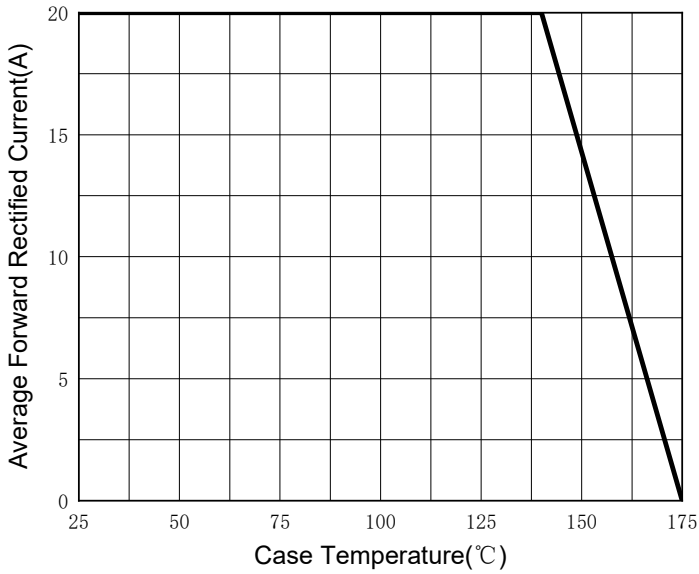


Fig.2: Forward Surge Current Capability(Per Diode)

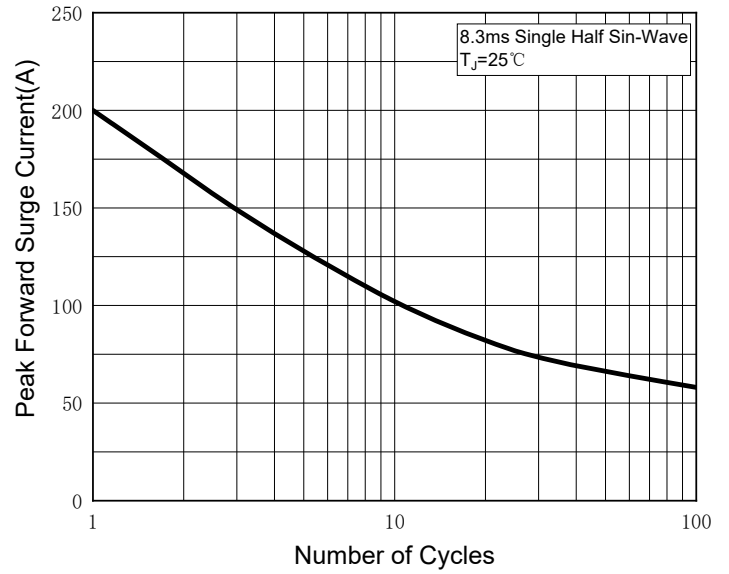


Fig.3: Typical Instantaneous Forward Characteristics(Per Diode)

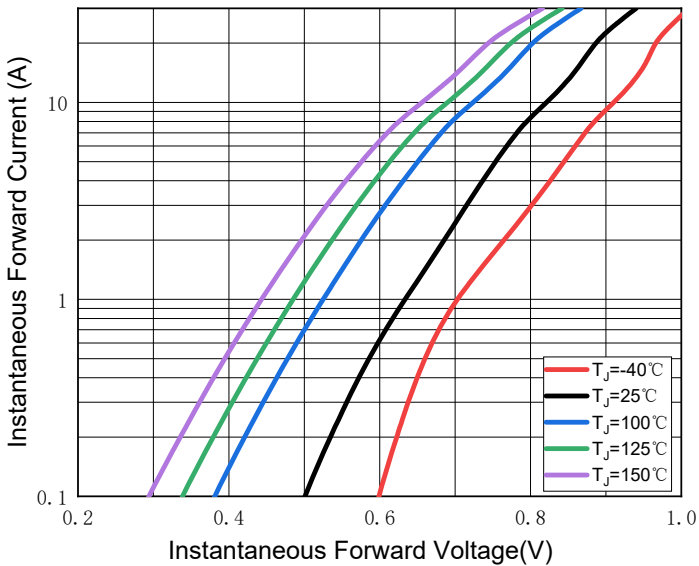


Fig.4: Typical Reverse Leakage Characteristics(Per Diode)

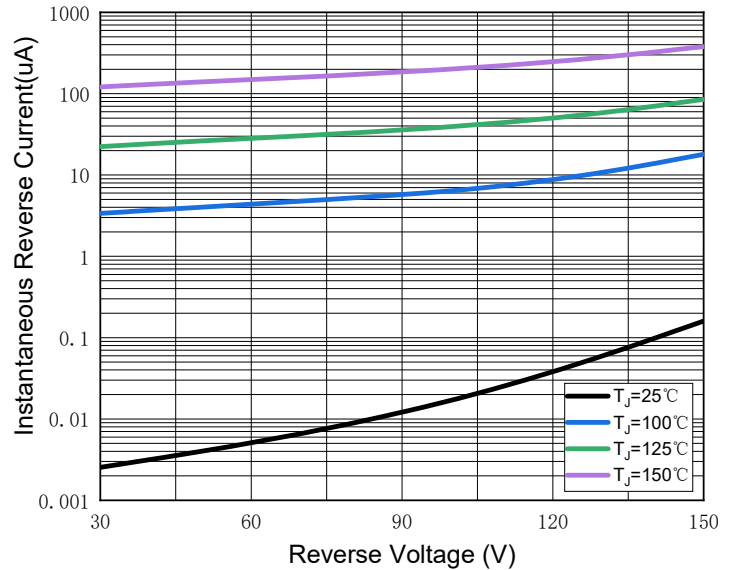
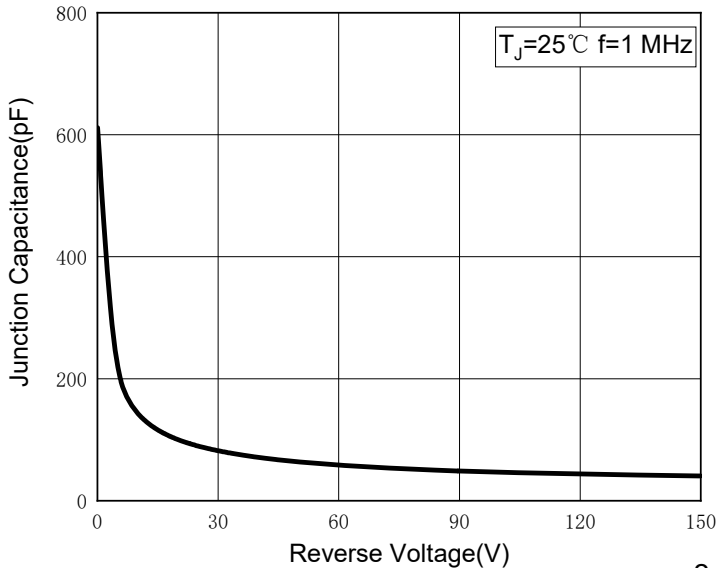


Fig.5: Typical Junction Capacitance(Per Diode)



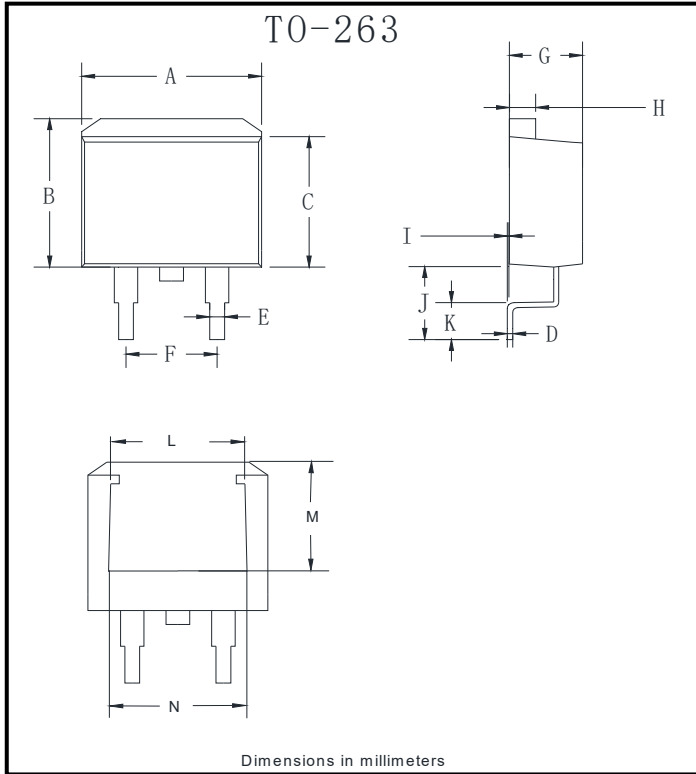


MBRB20150CTQ

Ordering Information (Example)

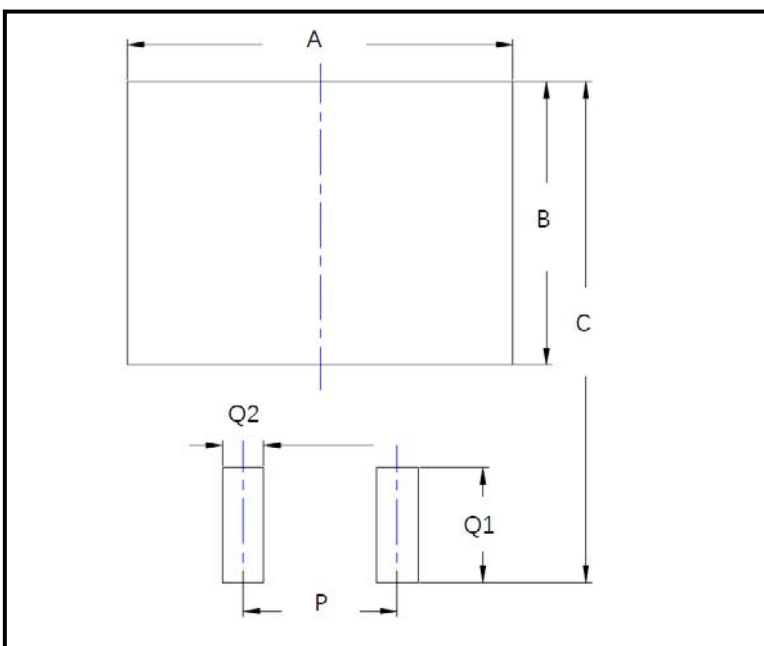
| PREFERED P/N | UNIT WEIGHT(g) | MINIIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|--------------|------------------|-----------------------|-------------------------|----------------------------|---------------|
| MBRB20150CTQ | Approximate 1.43 | 1000 | 2000 | 10000 | Reel |

Outline Dimensions



| TO-263 | | |
|--------|------|------|
| Dim | Min | Max |
| A | 9.5 | 11.5 |
| B | 9.7 | 10.5 |
| C | 8.4 | 9.0 |
| D | 0.28 | 0.64 |
| E | 0.68 | 0.94 |
| F | 4.55 | 5.6 |
| G | 4.04 | 5.10 |
| H | 1.14 | 1.4 |
| I | 0 | 0.2 |
| J | 4.9 | 6.05 |
| K | 1.79 | 2.79 |
| L | 7.3 | 7.9 |
| M | 6.2 | 6.8 |
| N | 7.6 | 8.2 |

Suggested Pad Layout



| Dim | Millimeters |
|-----|-------------|
| A | 12.7 |
| B | 9.4 |
| C | 16.6 |
| P | 5.08 |
| Q1 | 3.8 |
| Q2 | 1.35 |



MBRB20150CTQ

Disclaimer

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