

20A SCHOTTKY BARRIER DIODE

Full Pack High Voltage Schottky Rectifier MBRF20100CT THRU MBRF20200CT

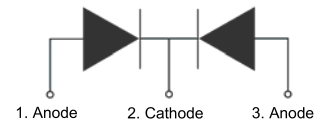
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Specification Features:

- High Voltage Wide Range Selection, 100V, 150V & 200V
- High Switching Speed Device
- Low Forward Voltage Drop
- Low Power Loss and High Efficiency
- Guard Ring for Over-voltage Protection
- High Surge Capability
- RoHS Compliant
- Matte Tin(Sn) Lead Finish
- Terminal Leads Surface is Corrosion Resistant and can withstand to 260°C Wave Soldering or per MIL-STD-750, Method 2026.



POLARITY CONFIGURATION



MAXIMUM RATINGS (Per Leg, unless otherwise specified)

| Symbol | Parameter | MBRF20100CT | MBRF20150CT | MBRF20200CT | Units |
|---------------------------------|--|-------------|-------------|-------------|-------|
| V_{RRM} V_{RWM} V_R | Maximum Repetitive Reverse Voltage Working Peak Reverse Voltage Maximum DC Reverse Voltage | 100 | 150 | 200 | V |
| $I_{F(AV)}$ | Average Rectified Forward Current Per Leg Per Package | | 10 20 | | A |
| I_{FSM} | Non-repetitive Peak Forward Surge Current 8.3mS Single Phase @ Rated Load | | 150 | | A |
| T_{STG} | Storage Temperature Range | | -65 to +150 | | °C |
| T_J | Operating Junction Temperature | | +150 | | °C |

These ratings are limiting values above which the serviceability of the diode may be impaired.

THERMAL CHARACTERISTICS $T_A = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------------|---|-------|-------|
| $R_{\theta JC}$ | Maximum Thermal Resistance, Junction-to-Case | 2.0 | °C/W |
| $R_{\theta JA}$ | Maximum Thermal Resistance, Junction-to-Ambient (per leg) | 60 | °C/W |

ELECTRICAL CHARACTERISTICS (Per Diode) $T_A = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition (Note 1) | MBRF20100CT | | MBRF20150CT | | MBRF20200CT | | Units |
|--------|-----------------|----------------------------|-------------|------|-------------|------|-------------|------|---------------|
| | | | Min | Max | Min | Max | Min | Max | |
| I_R | Reverse Current | @ rated V_R | --- | 200 | --- | 200 | --- | 200 | μA |
| V_F | Forward Voltage | $I_F = 10\text{A}$ | --- | 0.85 | --- | 0.92 | --- | 1.00 | V |
| | | $I_F = 20\text{A}$ | --- | 0.95 | --- | 1.00 | --- | 1.25 | |

Note/s:

- Tested under pulse condition of 300 μs .

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TYPICAL CHARACTERISTICS

Figure 1. Forward Current Derating Curve (Per Diode)

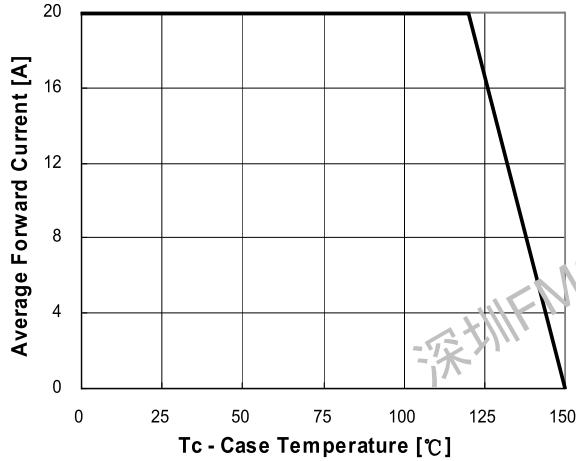


Figure 2. Junction Capacitance (Per Diode)

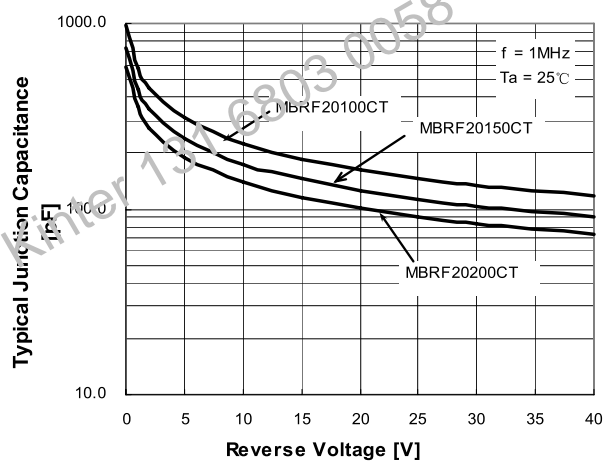


Figure 3. MBRF20100CT Typical Reverse Current (Per Diode)

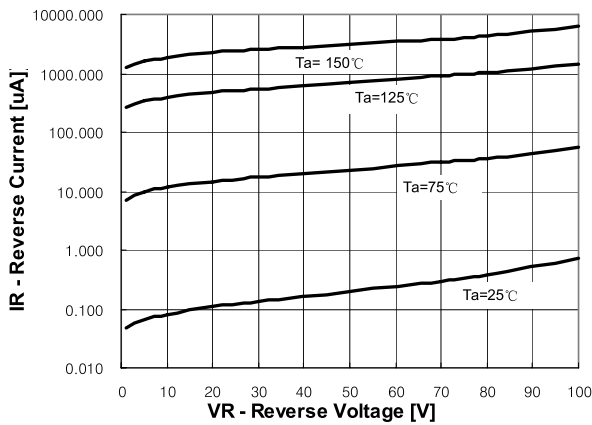


Figure 4. MBRF20150CT Typical Reverse Current (Per Diode)

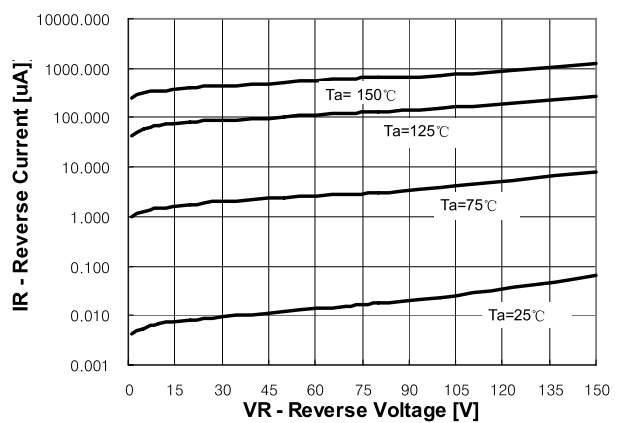


Figure 5. MBRF20200CT Typical Reverse Current (Per Diode)

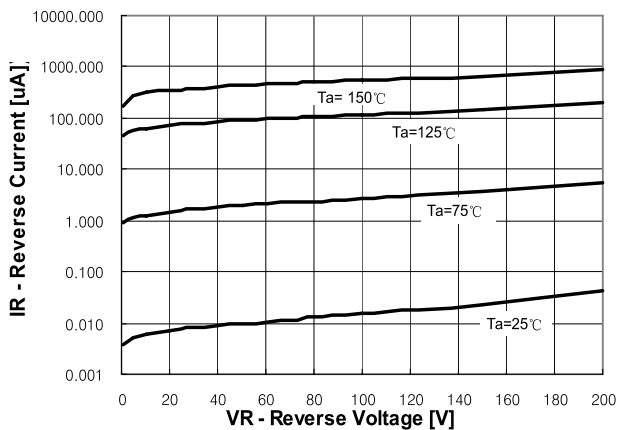
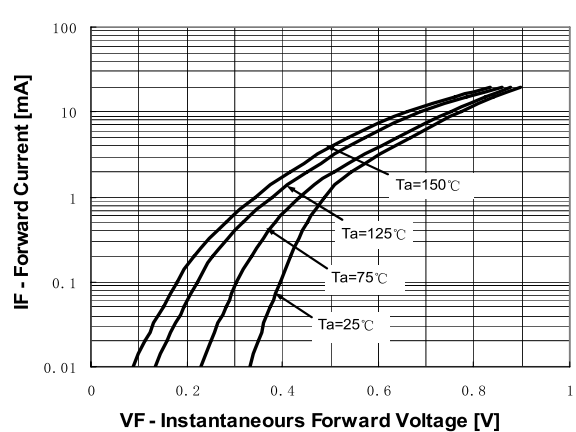


Figure 6. MBRF20100CT Typical Forward Voltage (Per Diode)



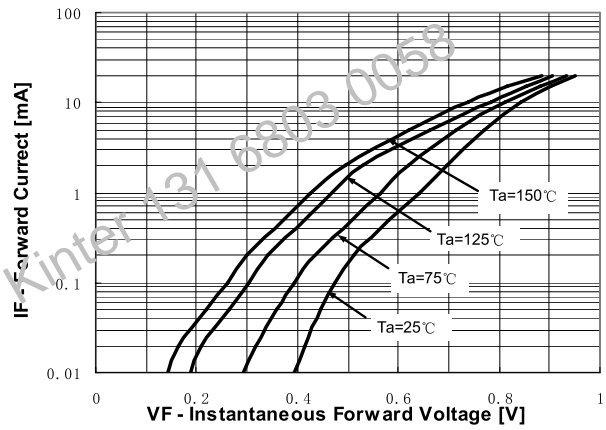
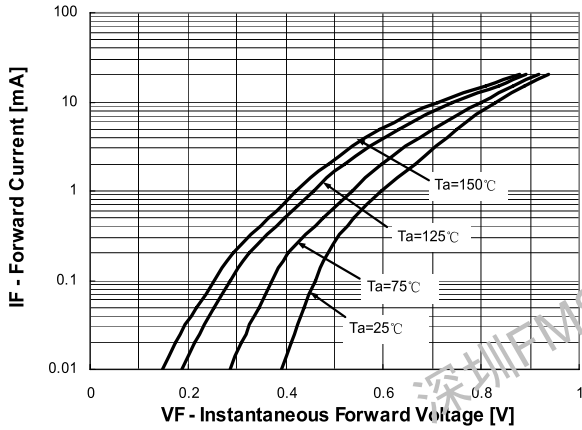
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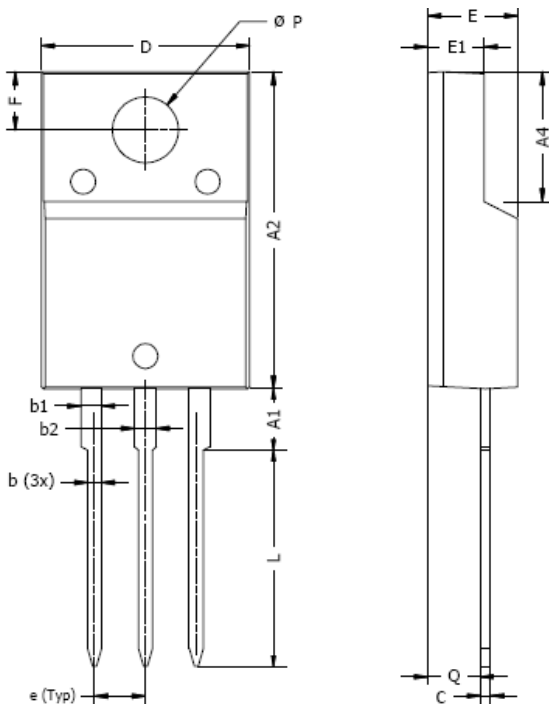
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Figure 7. MBRF20150CT Typical Forward Voltage (Per Diode)

Figure 8. MBRF20200CT Typical Forward Voltage (Per Diode)



TO220FP SG PACKAGE OUTLINE



| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A1 | 2.7 | 3.3 | 0.106 | 0.130 |
| A2 | 15.0 | 15.7 | 0.591 | 0.618 |
| A4 | 6.2 | 6.6 | 0.244 | 0.260 |
| b | 0.5 | 0.9 | 0.020 | 0.035 |
| b1 | 0.9 | 1.2 | 0.035 | 0.047 |
| b2 | 1.0 | 1.2 | 0.039 | 0.047 |
| c | 0.4 | 0.6 | 0.016 | 0.024 |
| D | 9.8 | 10.3 | 0.386 | 0.406 |
| e | 2.34 | 2.74 | 0.092 | 0.108 |
| E | 4.3 | 4.6 | 0.169 | 0.181 |
| E1 | 2.5 | 2.9 | 0.098 | 0.114 |
| F | 2.6 | 3.0 | 0.102 | 0.118 |
| L | 10.3 | 10.7 | 0.406 | 0.421 |
| ØP | 3.0 | 3.4 | 0.118 | 0.134 |
| Q | 2.3 | 2.7 | 0.091 | 0.106 |