

Pb Free Plating Product

MBRF1035CT thru MBRF10200CT



10 Ampere Insulated Dual Common Cathode Schottky Type Half Rectifiers

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| <p>Features</p> <ul style="list-style-type: none"> ※ Low power loss, high efficiency ※ Guardring for overvoltage protection ※ High surge current capability ※ Compliant to RoHS Directive 2011/65/EU and WEEE 2002/96/EC ※ Halogen-free according to IEC 61249-2-21 definition(Order Note) <p>Application</p> <ul style="list-style-type: none"> ※ Automotive Inverters and Solar Inverters ※ Car Audio Amplifiers and Sound Device Systems ※ Plating Power Supply, Motor Control, UPS and SMPS etc. <p>Mechanical Data</p> <ul style="list-style-type: none"> ※ Case: Insulated Full Pak Plastic Molding TO-220F ※ Epoxy: UL 94V-0 rate flame retardant ※ Terminals: Solderable per MIL-STD-202 method 208 ※ Polarity: As marked on diode body ※ Mounting position: Any ※ Weight: 2.0 gram approximately | <p>TO-220AB/TO-220F Unit:inch(mm)</p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <p>Positive Common Cathode Suffix "CT"</p> </div> <div style="text-align: center;"> <p>Negative Common Anode Suffix "CA"</p> </div> <div style="text-align: center;"> <p>Doubler Tandem Polarity Suffix "CD"</p> </div> <div style="text-align: center;"> <p>Series Tandem Polarity Suffix "CS"</p> </div> </div> |
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| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted) | | | | | | | | | | |
|----------------------------------------------------------------------------------------|-----------------|---------------|------------|---------------|------------|---------------|-------------|---------------|-------------|------|
| PARAMETER | SYMBOL | MBRF1035CT | MBRF1045CT | MBRF1050CT | MBRF1060CT | MBRF1090CT | MBRF10100CT | MBRF10150CT | MBRF10200CT | UNIT |
| | | MBRF1035CA | MBRF1045CA | MBRF1050CA | MBRF1060CA | MBRF1090CA | MBRF10100CA | MBRF10150CA | MBRF10200CA | |
| | | MBRF1035CD | MBRF1045CD | MBRF1050CD | MBRF1060CD | MBRF1090CD | MBRF10100CD | MBRF10150CD | MBRF10200CD | |
| | | MBRF1035CS | MBRF1045CS | MBRF1050CS | MBRF1060CS | MBRF1090CS | MBRF10100CS | MBRF10150CS | MBRF10200CS | |
| Maximum repetitive peak reverse voltage | VRRM | 35 | 45 | 50 | 60 | 90 | 100 | 150 | 200 | V |
| Maximum RMS voltage | VRMS | 24 | 31 | 35 | 42 | 63 | 70 | 105 | 140 | V |
| Maximum DC blocking voltage | VDC | 35 | 45 | 50 | 60 | 90 | 100 | 150 | 200 | V |
| Maximum average forward rectified current (Total Device 2x5A=10A) | IF(AV) | 10 | | | | | | | | A |
| Peak repetitive forward current (Rated VR, Square Wave, 20KHz) | IFRM | 10 | | | | | | | | A |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | IFSM | 120 | | | | | | | | A |
| Peak repetitive reverse surge current (Note 1) | IRRM | 0.5 | | | | | | | | A |
| Maximum instantaneous forward voltage (Note 2) IF=5A, TJ=25°C IF=5A, TJ=125°C | VF (Per Leg) | 0.55 0.50 | | 0.65 0.60 | | 0.75 0.70 | | 0.88 0.86 | | V |
| Maximum reverse current @ rated VR TJ=25°C TJ=125°C | IR | 0.05 0.015 | | 0.05 0.010 | | 0.05 0.005 | | 0.05 0.002 | | mA |
| Voltage rate of change (Rated VR) | dV/dt | 10000 | | | | | | | | V/μs |
| Typical thermal resistance | RθJC | 3 | | | | | | | | °C/W |
| Operating junction temperature range | TJ | - 55 to +150 | | | | | | | | °C |
| Storage temperature range | TSTG | - 55 to +150 | | | | | | | | °C |

Note 1: tp = 2.0 μs, 1.0KHz
 Note 2: Pulse test with PW=300μs, 1% duty cycle

RATINGS AND CHARACTERISTICS CURVES
(TA=25°C unless otherwise noted)

FIG. 1 FORWARD CURRENT DERATING CURVE

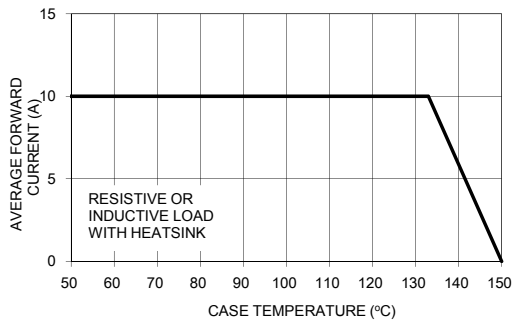


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

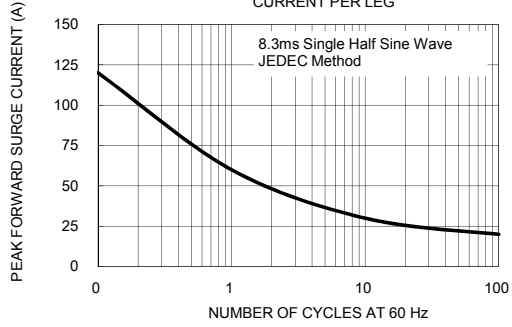


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

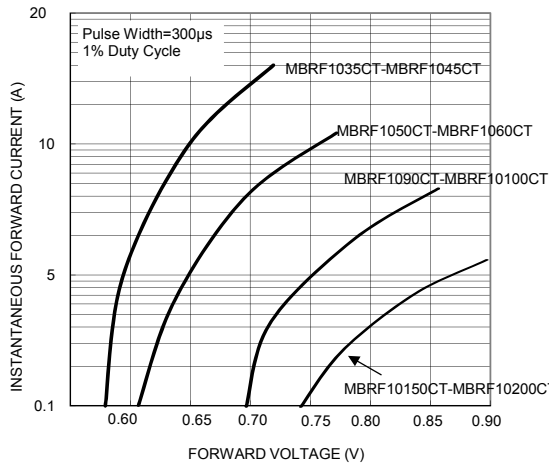


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

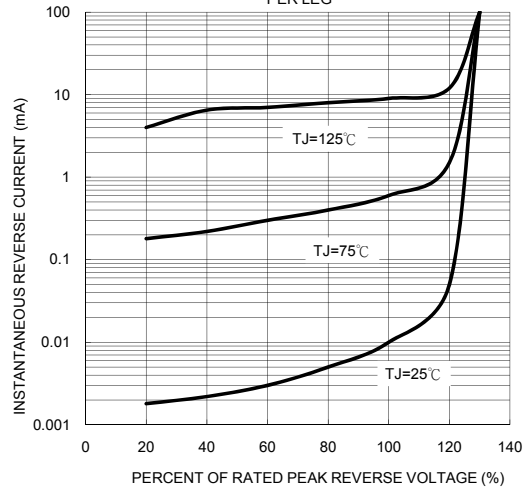


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

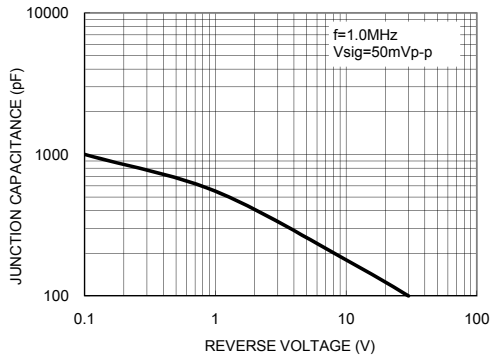


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

