

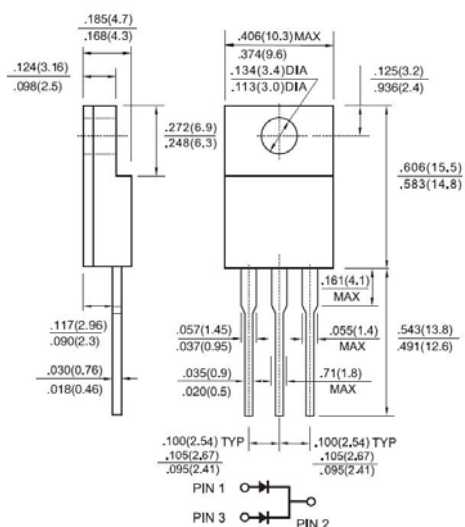


Features

- UL Recognized File # E-326243
- Plastic material used carriers Underwriters Laboratory Classification 94V-0
- Metal silicon junction, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low forward voltage drop
- High surge capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Guard-ring for overvoltage protection
- High temperature soldering guaranteed: 260°C/10 seconds, at terminals
- Green compound with suffix "G" on packing code & prefix "G" on datecode

Mechanical Data

- Case: ITO-220AB molded plastic body
- Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- Polarity: As marked
- Mounting position: Any
- Mounting torque: 5 in. - lbs, max
- Weight: 1.75 grams



Dimensions in inches and (millimeters)



Marking Diagram

- MBRF25XXCT = Specific Device Code
 G = Green Compound
 Y = Year
 WW = Work Week

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

| Type Number | Symbol | MBRF 2535 CT | MBRF 2545 CT | MBRF 2550 CT | MBRF 2560 CT | MBRF 2590 CT | MBRF 25100 CT | MBRF 25150 CT | Unit | |
|--|------------------------------------|---|--------------|--------------|--------------|--------------|---------------|---------------|--------------------|----|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 35 | 45 | 50 | 60 | 90 | 100 | 150 | V | |
| Maximum RMS Voltage | V_{RMS} | 24 | 31 | 35 | 42 | 63 | 70 | 105 | V | |
| Maximum DC Blocking Voltage | V_{DC} | 35 | 45 | 50 | 60 | 90 | 100 | 150 | V | |
| Maximum Average Forward Rectified Current at $T_c=130^\circ\text{C}$ | $I_{F(AV)}$ | 25 | | | | | | | A | |
| Peak Repetitive Forward Current (Rated VR, Square Wave, 20KHz) at $T_c=130^\circ\text{C}$ | I_{FRM} | 25 | | | | | | | A | |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) | I_{FSM} | 200 | | | | | | | A | |
| Peak Repetitive Reverse Surge Current (Note 1) | I_{RRM} | 1 | 0.5 | | | | | | A | |
| Maximum Instantaneous Forward Voltage (Note 2) $I_F=12.5\text{A}, T_A=25^\circ\text{C}$ $I_F=12.5\text{A}, T_A=125^\circ\text{C}$ $I_F=25\text{A}, T_A=25^\circ\text{C}$ $I_F=25\text{A}, T_A=125^\circ\text{C}$ | V_F | - | 0.75 | 0.85 | 0.95 | | | | V | |
| Maximum Reverse Current @ Rated VR $T_A=25^\circ\text{C}$ $T_A=125^\circ\text{C}$ | I_R | 2 | 0.1 | | | | | | | mA |
| Voltage Rate of Change (Rated V_R) | dV/dt | 10000 | | | | | | | V/us | |
| Typical Junction Capacitance | C_j | 580 | | | | 480 | | | pF | |
| RMS Isolation Voltage $(t=1.0\text{ second, R.H.} \leq 30\%, T_A=25^\circ\text{C})$ | V_{ISO} | 4500 (Note 3) 3500 (Note 4) 1500 (Note 5) | | | | | | | V | |
| Typical Thermal Resistance Per Leg | $R_{\theta JA}$ $R_{\theta JC}$ | 8.0 1.0 | | | | | | | $^\circ\text{C/W}$ | |
| Operating Temperature Range | T_J | - 65 to + 150 | | | | | | | $^\circ\text{C}$ | |
| Storage Temperature Range | T_{STG} | - 65 to + 150 | | | | | | | $^\circ\text{C}$ | |

Note 1: 2.0uS Pulse Width, f=1.0KHz

Note 2: Pulse Test : 300uS Pulse Width, 1% Duty Cycle

Note 3: Clip Mounting (on case), where lead does not overlap heatsink with 0.11" offset

Note 4: Clip Mounting (on case), where lead do overlap heatsink.

Note 5: Screw mounting with 4-40 screw, where washer diameter is $\leq 4.9\text{mm}$ (0.19")

RATINGS AND CHARACTERISTIC CURVES (MBRF2535CT THRU MBRF25150CT)

FIG. 1 FORWARD CURRENT DERATING CURVE

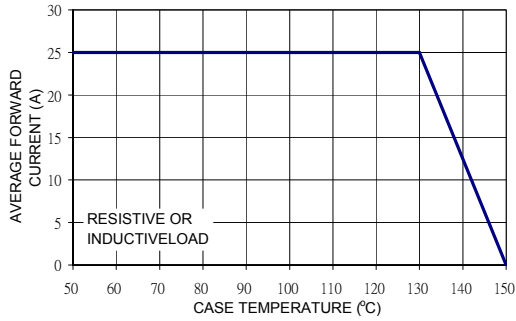


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

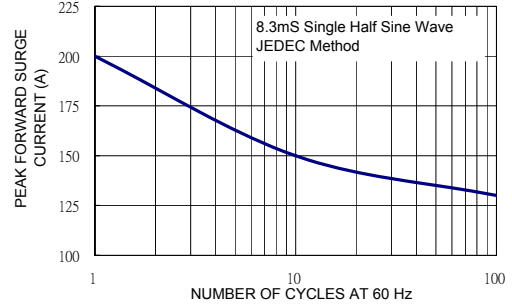


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

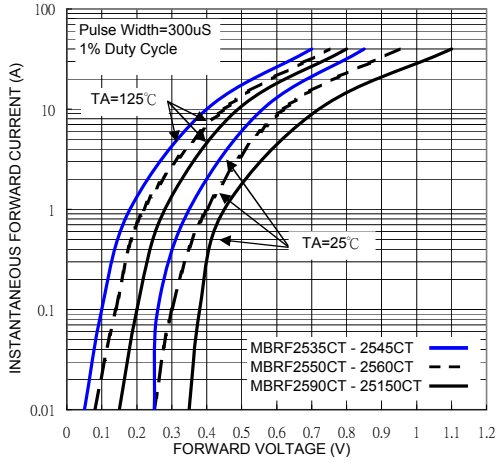


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

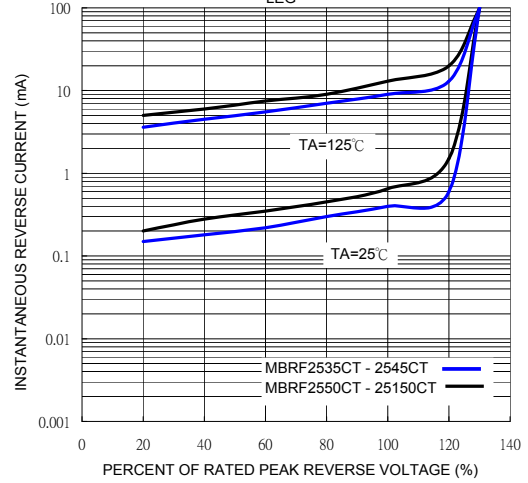


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

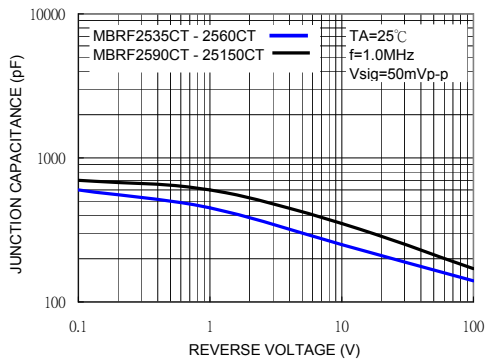


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

