

Features

- ✧ Low power loss, high efficiency
- ✧ High current capability, low forward voltage drop
- ✧ Plastic material used carries Underwriters Laboratory Classifications 94V-0
- ✧ High Surge current capability
- ✧ Guard-ring for transient protection
- ✧ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ✧ High temperature soldering guaranteed: 260°C / 10 seconds, 0.375"(9.5mm) lead lengths 5 lbs tension
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode



Mechanical Data

- ✧ Case: ITO-220AB
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: As marked
- ✧ Mounting position: Any
- ✧ Mounting torque: 5 in-lbs. Max.
- ✧ Weight: 1.7 grams

Ordering Information (example)

| Part No. | Package | Packing | Packing code | Green Compound Packing code |
|--------------|-----------|-----------|--------------|-----------------------------|
| MBRF10L100CT | ITO-220AB | 50 / TUBE | D0 | D0G |

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 | MBRF10L100CT | | Unit |
|---|-----------------|--------------|------|----------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 100 | | V |
| Maximum RMS Voltage | V_{RMS} | 70 | | V |
| Maximum DC blocking voltage | V_{DC} | 100 | | V |
| Maximum Average Forward Rectified Current | $I_{F(AV)}$ | 10 | | A |
| Peak Repetitive Forward Current (Rated VR, Square Wave, 20KHz) | I_{FRM} | 10 | | A |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) | I_{FSM} | 120 | | A |
| Peak Repetitive Reverse Surge Current (Note 1) | I_{RRM} | 1 | | A |
| Maximum Instantaneous Forward Voltage at (Note 2) IF = 5A, TA=25°C IF = 5A, TA=125°C IF = 10A, TA=25°C IF = 10A, TA=125°C | V_F | TYP | MAX | V |
| | | 0.73 | 0.76 | |
| | | 0.59 | 0.65 | |
| | | 0.82 | 0.85 | |
| | | 0.66 | 0.71 | |
| Maximum Reverse Current at Rated DC Blocking Voltage TA=25 °C TA=125 °C | I_R | TYP | MAX | uA mA |
| | | 0.3 | 20 | |
| | | 0.5 | 15 | |
| Voltage rate of change (Rated VR) | dV/dt | 10,000 | | V/uS |
| Typical Junction Capacitance (Note 3) | Cj | 185 | | pF |
| Maximum Thermal Resistance Per Leg | $R_{\theta JC}$ | 5.5 | | °C/W |
| Operating Temperature Range | TJ | -55 to + 150 | | °C |
| Storage Temperature Range | TSTG | -55 to + 150 | | °C |

Note1: 2.0uS Pulse Width, F=1.0KHz, Continues 10 Cycles

Note2: Pulse Test : 300us Pulse Width, 1% Duty cycle

Note3: Measure at 1MHz and Applied Reverse Voltage of 4.0V D.C.

RATINGS AND CHARACTERISTIC CURVES (MBRF10L100CT)

FIG. 1 MAXIMUM FORWARD CURRENT DERATING CURVE

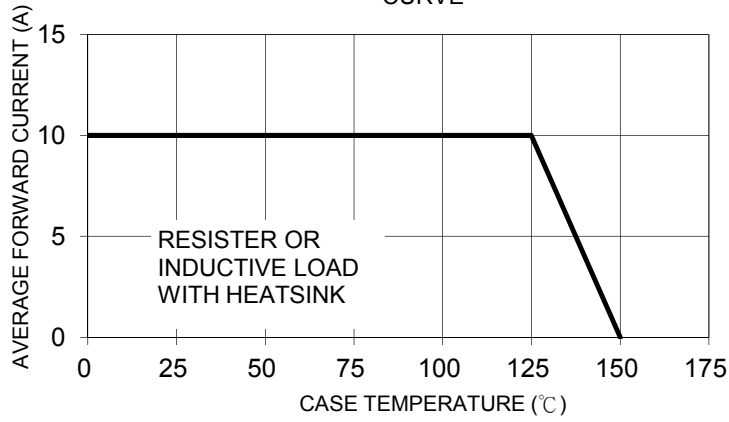


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

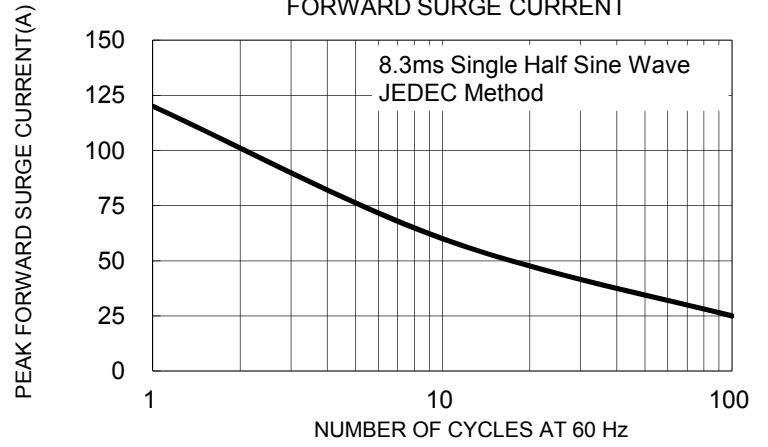


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

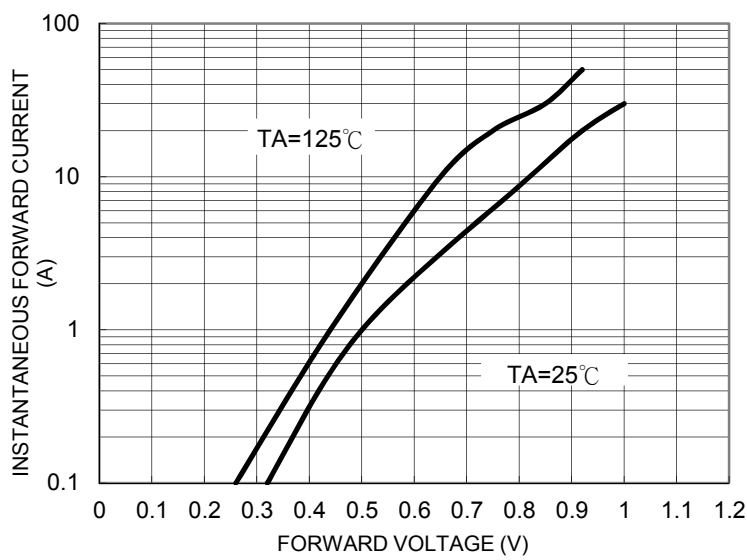


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

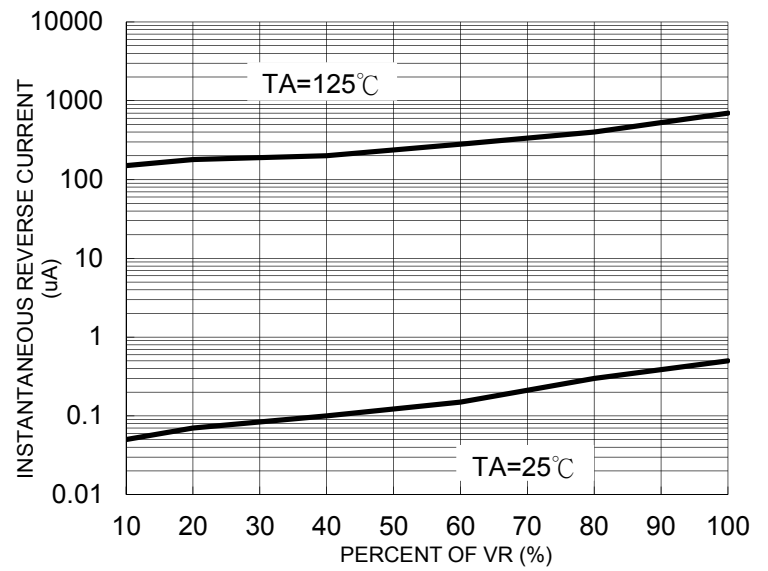


FIG. 5 TYPICAL JUNCTION CAPACITANCE

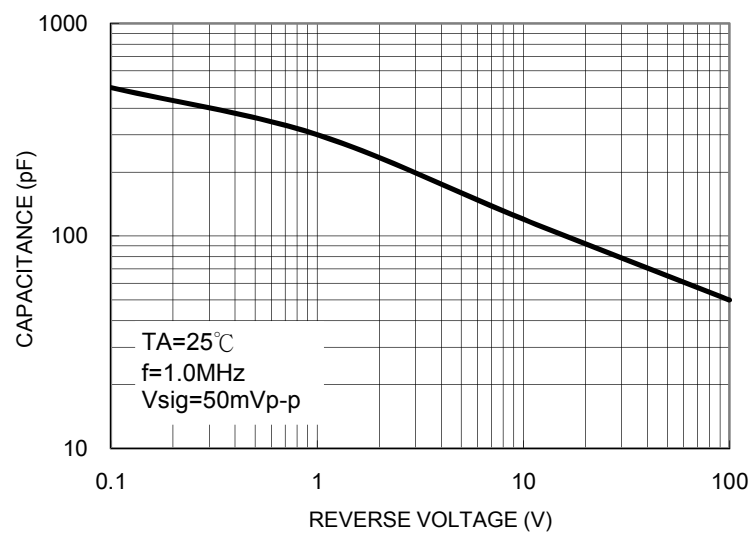
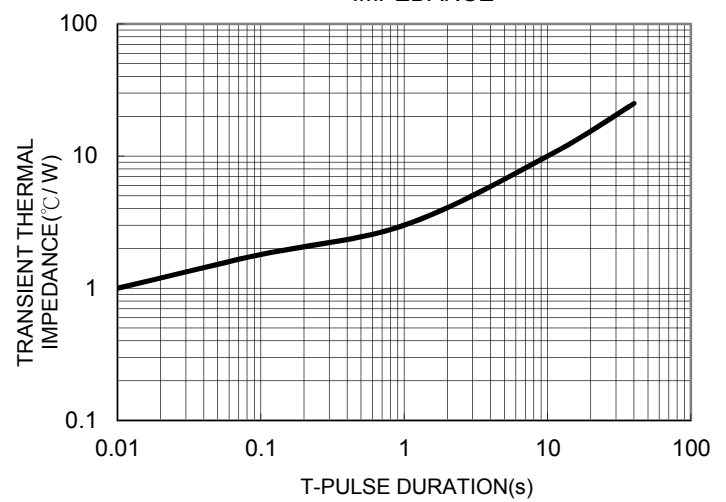


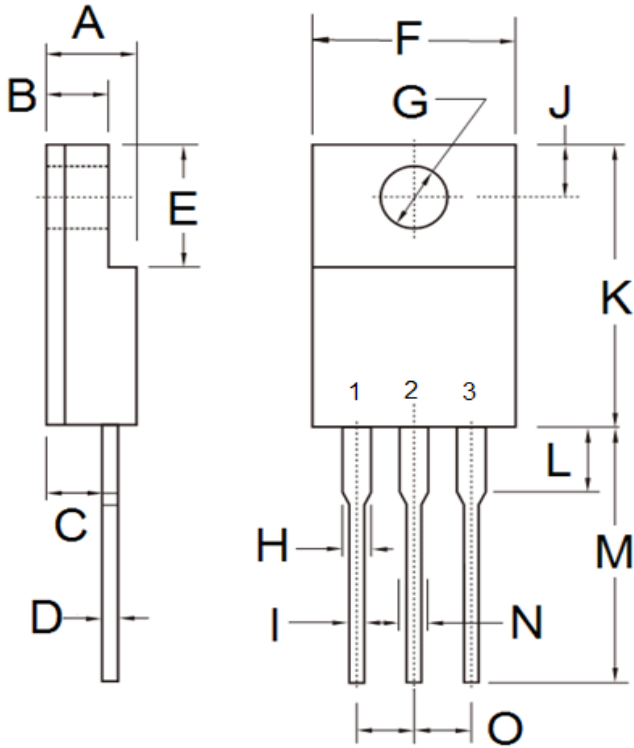
FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE



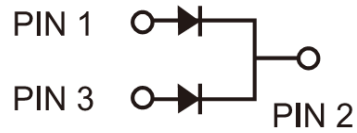
Ordering information

| Part No. | Package | BULK Packing | Packing code | Green Compound Packing code |
|--------------|-----------|--------------|--------------|-----------------------------|
| MBRF10L100CT | ITO-220AB | 50 / TUBE | C0 | C0G |
| | ITO-220AB | 50 / TUBE | D0 | D0G |

Dimensions



| DIM. | Unit(mm) | | Unit(inch) | |
|------|----------|-------|------------|-------|
| | Min | Max | Min | Max |
| A | 4.30 | 4.70 | 0.169 | 0.185 |
| B | 2.50 | 3.16 | 0.098 | 0.124 |
| C | 2.30 | 2.96 | 0.091 | 0.117 |
| D | 0.46 | 0.76 | 0.018 | 0.030 |
| E | 6.30 | 6.90 | 0.248 | 0.272 |
| F | 9.60 | 10.30 | 0.378 | 0.406 |
| G | 3.00 | 3.40 | 0.118 | 0.134 |
| H | 0.95 | 1.45 | 0.037 | 0.057 |
| I | 0.50 | 0.90 | 0.020 | 0.035 |
| J | 2.40 | 3.20 | 0.094 | 0.126 |
| K | 14.80 | 15.50 | 0.583 | 0.610 |
| L | - | 4.10 | - | 0.161 |
| M | 12.60 | 13.80 | 0.496 | 0.543 |
| N | - | 1.80 | - | 0.071 |
| O | 2.41 | 2.67 | 0.095 | 0.105 |



Marking Diagram



P/N = Specific Device Code
G = Green Compound
YWW = Date Code