

Features

- ✧ 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 power supply - output rectification, power management, instrumentation
- ✧ Guard-ring for overvoltage protection
- ✧ High temperature soldering guaranteed: 260°C/10 seconds 0.25", (6.35mm) from case
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode



Mechanical Data

- ✧ Cases: JEDEC TO-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: 1.82 grams

Ordering Information(example)

| Part No. | Package | Packing | Packing code | Green Compound Packing code |
|-------------|----------|-----------|--------------|-----------------------------|
| MBR20H100CT | TO-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 | MBR 20H100CT | MBR 20H150CT | MBR 20H200CT | Units |
|---|-----------------|------------------------------|------------------------------|--------------|---------------|
| Maximum Recurrent Peak Reverse Voltage | V_{RRM} | 100 | 150 | 200 | V |
| Maximum RMS Voltage | V_{RMS} | 70 | 105 | 140 | V |
| Maximum DC Blocking Voltage | V_{DC} | 100 | 150 | 200 | V |
| Maximum Average Forward Rectified Current | $I_{F(AV)}$ | 20 | | | A |
| Peak Repetitive Surge Current (Rated V_R , Square Wave, 20KHz) | I_{FRM} | 20 | | | A |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC Method) | I_{FSM} | 150 | | | A |
| Peak Repetitive Reverse Surge Current (Note 1) | I_{RRM} | 1.0 | | 0.5 | A |
| Maximum Instantaneous Forward Voltage at (Note 2) IF=10A, $T_A=25^{\circ}C$ IF=10A, $T_A=125^{\circ}C$ IF=20A, $T_A=25^{\circ}C$ IF=20A, $T_A=125^{\circ}C$ | V_F | 0.85 0.75 0.95 0.85 | 0.88 0.75 0.97 0.85 | | V |
| Maximum Instantaneous Reverse Current at Rated DC Blocking Voltage @ $T_A=25^{\circ}C$ | I_R | 5 | | | uA |
| @ $T_A=125^{\circ}C$ | | 2 | | | mA |
| Voltage Rate of Change, (Rated V_R) | dV/dt | 10,000 | | | V/us |
| Maximum Typical Thermal Resistance | $R_{\theta JC}$ | 1.5 | | | $^{\circ}C/W$ |
| Operating Junction Temperature Range | T_J | - 65 to + 175 | | | $^{\circ}C$ |
| Storage Temperature Range | T_{STG} | - 65 to + 175 | | | $^{\circ}C$ |

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

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

RATINGS AND CHARACTERISTIC CURVES (MBR20H100CT THRU MBR20H200CT)

FIG. 1- FORWARD CURRENT DERATING CURVE

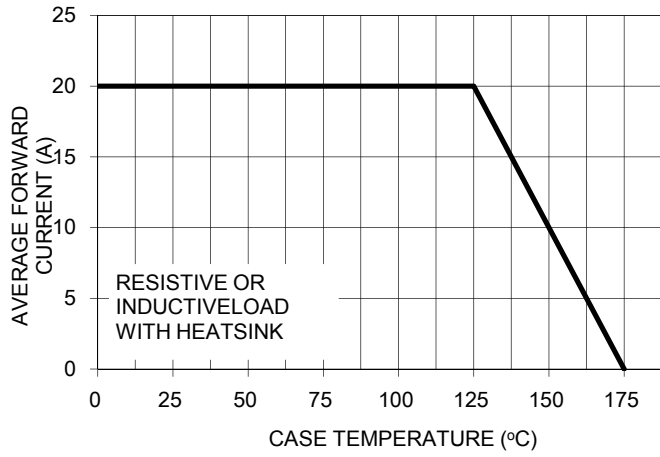


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

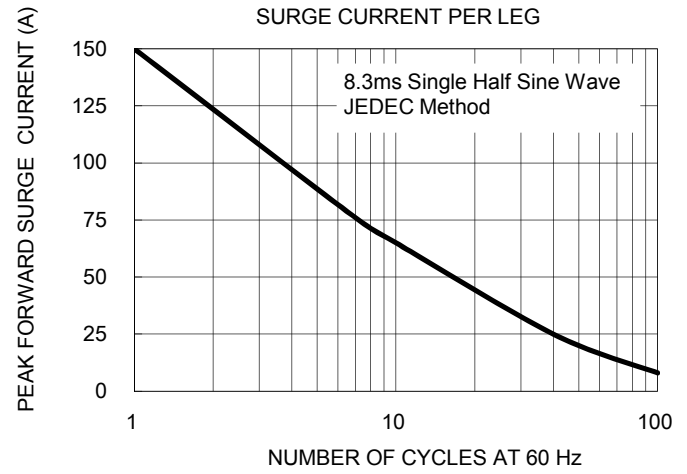


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

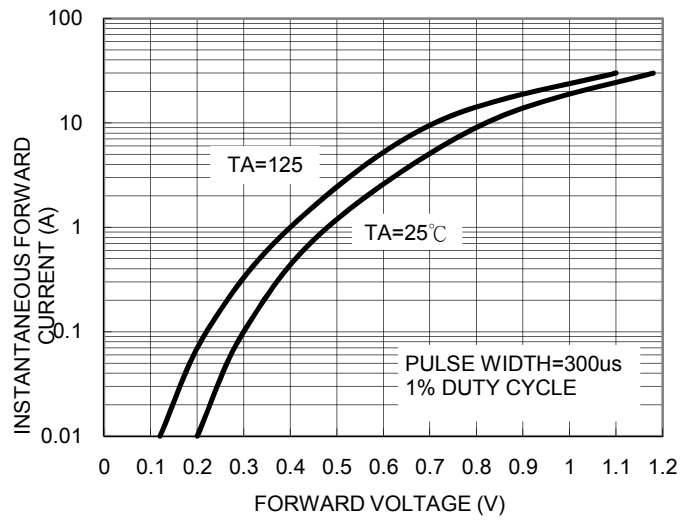


FIG. 4- TYPICAL REVERSE CHARACTERISTICS PER LEG

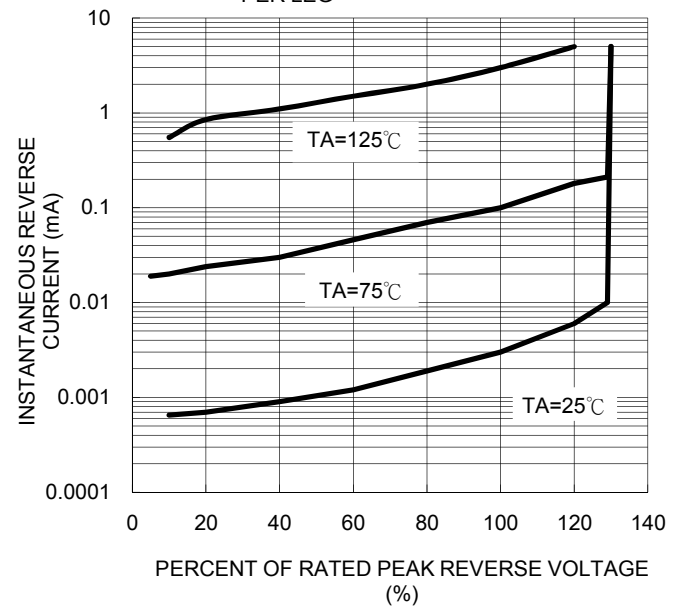


FIG. 5- TYPICAL JUNCTION CAPACITANCE PER LEG

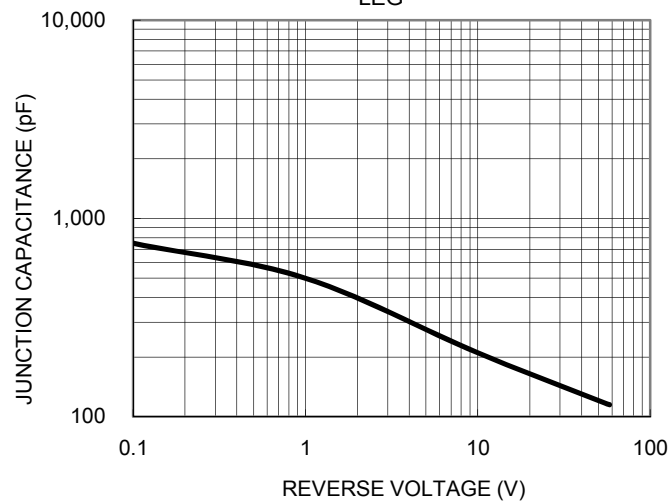
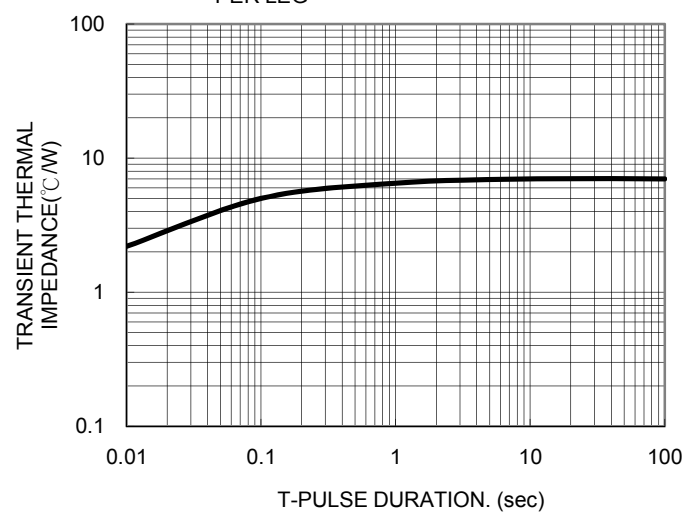


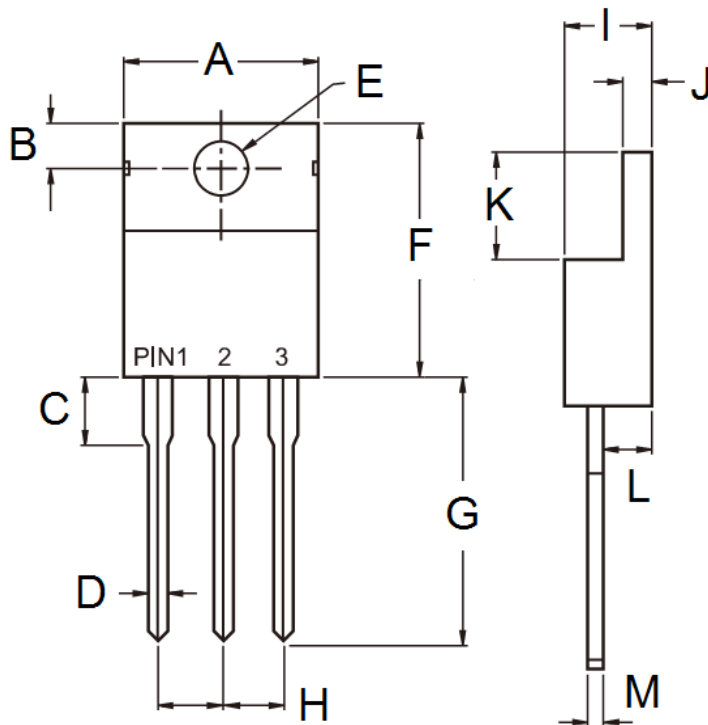
FIG. 6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



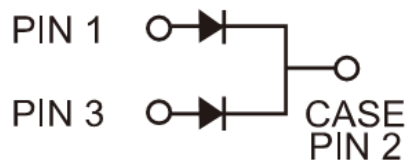
Ordering information

| Part No. | Package | BULK Packing | Packing code | Green Compound Packing code |
|------------|----------|--------------|--------------|-----------------------------|
| MBR20HxxCT | TO-220AB | 50 / TUBE | C0 | C0G |
| | TO-220AB | 50 / TUBE | D0 | D0G |

Note: "xx" is Device Code from "100" thru "200".

Dimensions


| DIM. | Unit(mm) | | Unit(inch) | |
|------|----------|-------|------------|-------|
| | Min | Max | Min | Max |
| A | - | 10.50 | - | 0.413 |
| B | 2.62 | 3.44 | 0.103 | 0.135 |
| C | 2.80 | 4.20 | 0.110 | 0.165 |
| D | 0.68 | 0.94 | 0.027 | 0.037 |
| E | 3.54 | 4.00 | 0.139 | 0.157 |
| F | 14.60 | 16.00 | 0.575 | 0.630 |
| G | 13.19 | 14.79 | 0.519 | 0.582 |
| H | 2.41 | 2.67 | 0.095 | 0.105 |
| I | 4.42 | 4.76 | 0.174 | 0.187 |
| J | 1.14 | 1.40 | 0.045 | 0.055 |
| K | 5.84 | 6.86 | 0.230 | 0.270 |
| L | 2.20 | 2.80 | 0.087 | 0.110 |
| M | 0.35 | 0.64 | 0.014 | 0.025 |


Marking Diagram


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