

## Dual Common Cathode Schottky Rectifier

### FEATURES

- Low power loss, high efficiency
- Guardring for overvoltage protection
- High surge current capability
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition


**TO-220AB**


### MECHANICAL DATA

**Case:** TO-220AB

Molding compound, UL flammability classification rating 94V-0

Base P/N with suffix "G" on packing code - green compound (halogen-free)

**Terminal:** Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 1A whisker test

**Polarity:** As marked

**Mounting torque:** 5 in-lbs maximum

**Weight:** 1.88 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)                                                                                                                                               |                    |                              |                              |                              |                              |                |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------|------------------------------|------------------------------|------------------------------|----------------|------|
| PARAMETER                                                                                                                                                                                                                                  | SYMBOL             | MBR 1045 CT-Y                | MBR 1060 CT-Y                | MBR 10100 CT-Y               | MBR 10150 CT-Y               | MBR 10200 CT-Y | UNIT |
| Marking code                                                                                                                                                                                                                               |                    | MBR10 45CT                   | MBR10 60CT                   | MBR10 100CT                  | MBR10 150CT                  | MBR10 200CT    |      |
| Maximum repetitive peak reverse voltage                                                                                                                                                                                                    | V <sub>RRM</sub>   | 45                           | 60                           | 100                          | 150                          | 200            | V    |
| Maximum RMS voltage                                                                                                                                                                                                                        | V <sub>RMS</sub>   | 31                           | 42                           | 70                           | 105                          | 140            | V    |
| Maximum DC blocking voltage                                                                                                                                                                                                                | V <sub>DC</sub>    | 45                           | 60                           | 100                          | 150                          | 200            | V    |
| Maximum average forward rectified current                                                                                                                                                                                                  | I <sub>F(AV)</sub> | 10                           |                              |                              |                              |                | A    |
| Peak repetitive forward current (Rated VR, Square wave, 20KHz)                                                                                                                                                                             | I <sub>FRM</sub>   | 10                           |                              |                              |                              |                | A    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load                                                                                                                                                        | I <sub>FSM</sub>   | 120                          |                              |                              |                              |                | A    |
| Peak repetitive reverse surge current (Note 1)                                                                                                                                                                                             | I <sub>RRM</sub>   | 1                            | 0.5                          |                              |                              |                | A    |
| Maximum instantaneous forward voltage (Note 2)<br>I <sub>F</sub> = 5 A, T <sub>J</sub> =25°C<br>I <sub>F</sub> = 5 A, T <sub>J</sub> =125°C<br>I <sub>F</sub> = 10 A, T <sub>J</sub> =25°C<br>I <sub>F</sub> = 10 A, T <sub>J</sub> =125°C | V <sub>F</sub>     | 0.70<br>0.57<br>0.80<br>0.67 | 0.80<br>0.65<br>0.90<br>0.75 | 0.85<br>0.75<br>0.95<br>0.85 | 0.88<br>0.78<br>0.98<br>0.88 |                | V    |
| Maximum reverse current @ rated VR<br>T <sub>J</sub> =25 °C<br>T <sub>J</sub> =125 °C                                                                                                                                                      | I <sub>R</sub>     | 0.1<br>15 10 2 5             |                              |                              |                              |                | mA   |
| Voltage rate of change (Rated V <sub>R</sub> )                                                                                                                                                                                             | dV/dt              | 10000                        |                              |                              |                              |                | V/μs |
| Typical thermal resistance                                                                                                                                                                                                                 | R <sub>θJC</sub>   | 1.5                          |                              |                              |                              |                | °C/W |
| Operating junction temperature range                                                                                                                                                                                                       | T <sub>J</sub>     | - 55 to +150                 |                              |                              |                              |                | °C   |
| Storage temperature range                                                                                                                                                                                                                  | T <sub>STG</sub>   | - 55 to +150                 |                              |                              |                              |                | °C   |

Note 1: tp = 2.0 μs, 1.0KHz

Note 2: Pulse test with PW=300μs, 1% duty cycle

| ORDERING INFORMATION    |              |                     |          |           |
|-------------------------|--------------|---------------------|----------|-----------|
| PART NO.                | PACKING CODE | GREEN COMPOUND CODE | PACKAGE  | PACKING   |
| MBR10xxCT-Y<br>(Note 1) | C0           | Suffix "G"          | TO-220AB | 50 / Tube |

Note 1: "xx" defines voltage from 45V (MBR1045CT-Y) to 200V (MBR10200CT-Y)

| EXAMPLE         |             |              |                     |                |
|-----------------|-------------|--------------|---------------------|----------------|
| PREFERRED P/N   | PART NO.    | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION    |
| MBR1060CT-Y C0  | MBR1060CT-Y | C0           |                     |                |
| MBR1060CT-Y C0G | MBR1060CT-Y | C0           | G                   | Green compound |

## RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG. 1- FORWARD CURRENT DERATING CURVE

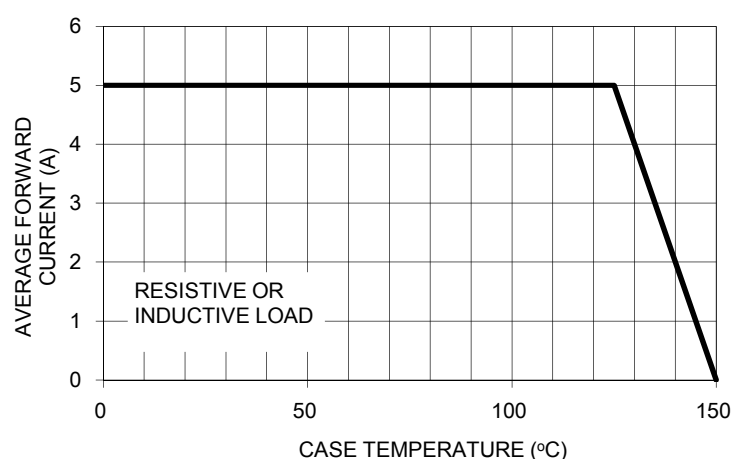


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

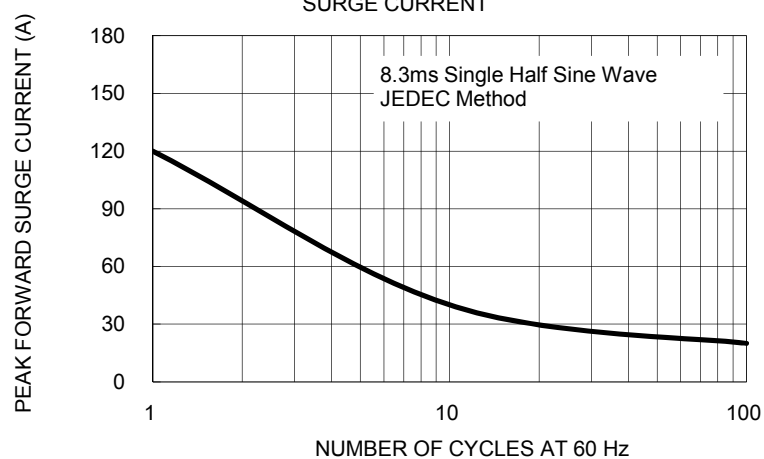


FIG. 3- TYPICAL FORWARD CHARACTERISTICS

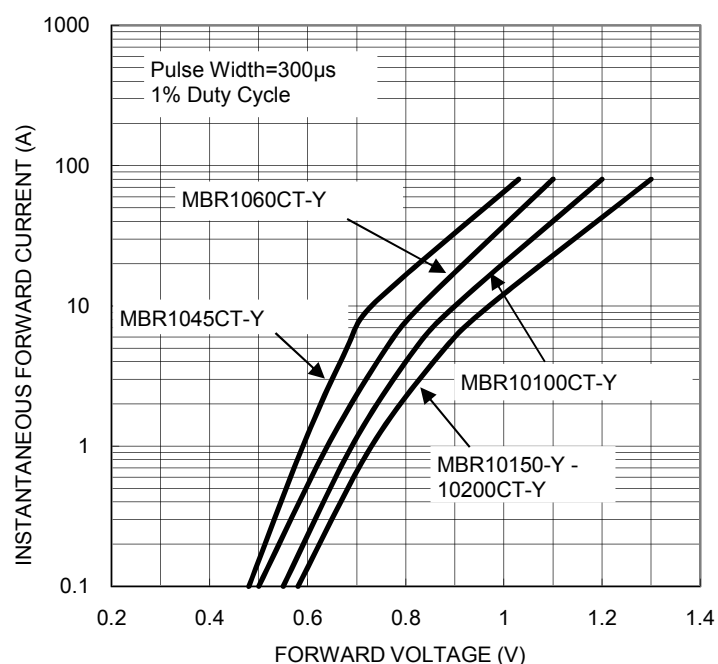


FIG. 4- TYPICAL REVERSE CHARACTERISTICS

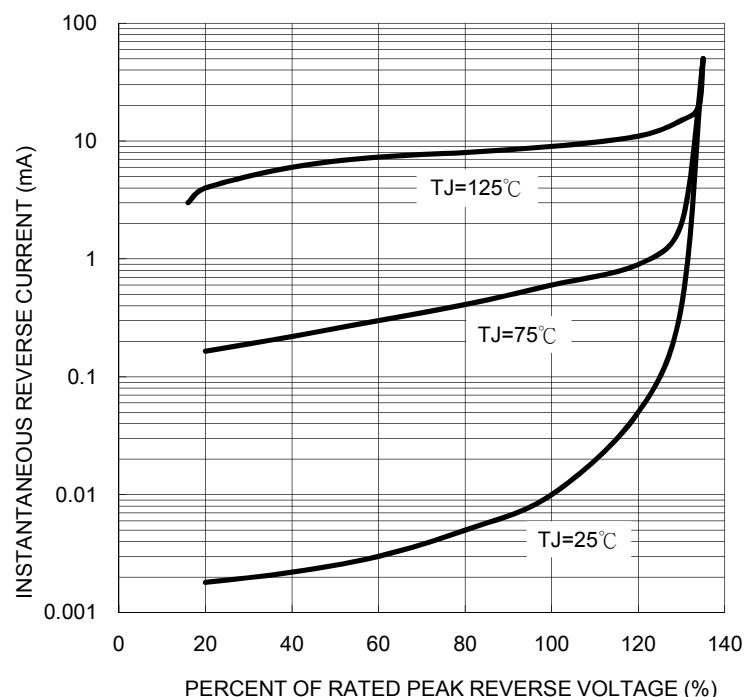


FIG. 5- TYPICAL JUNCTION CAPACITANCE

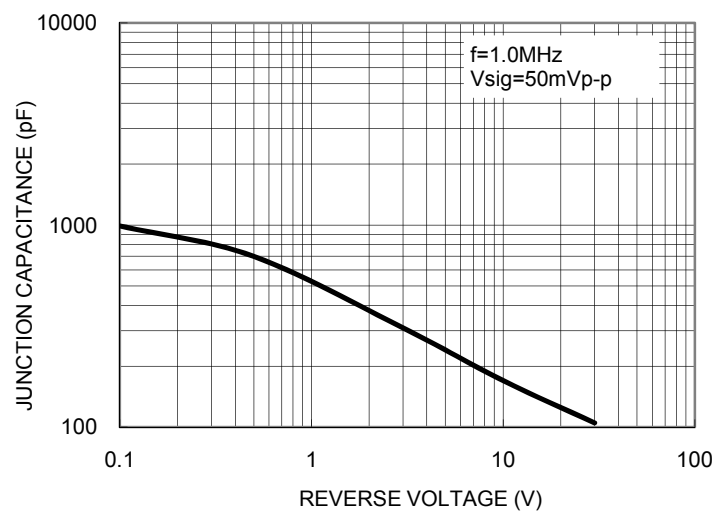
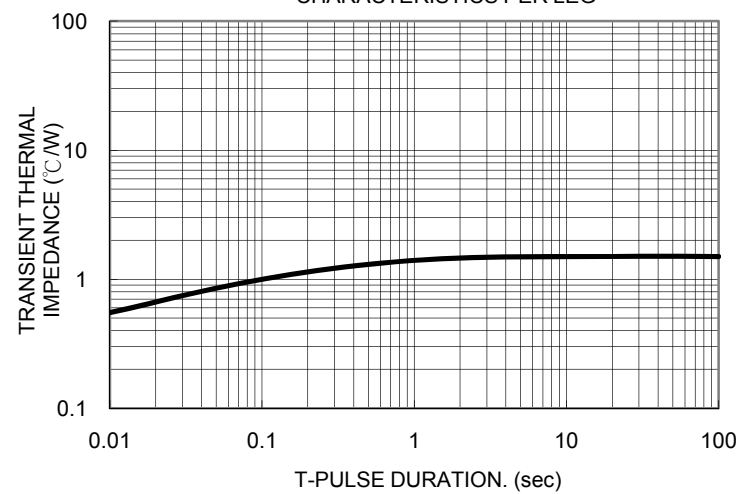
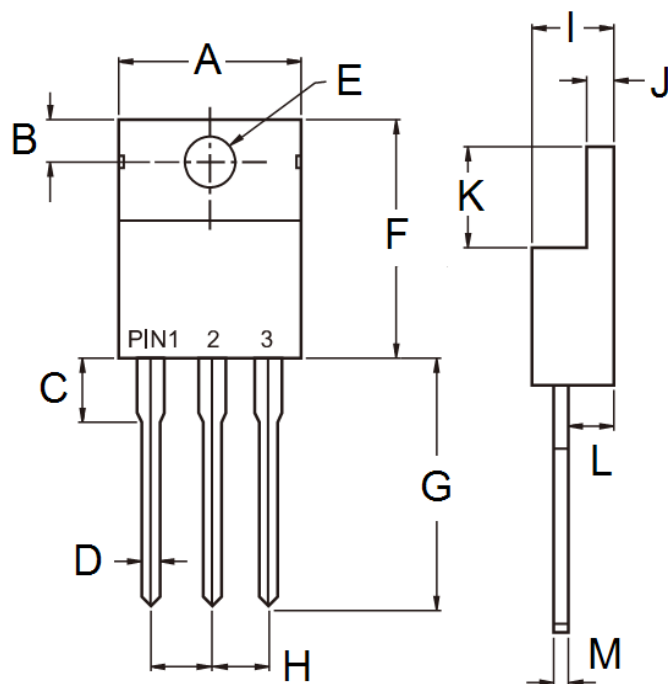


FIG. 6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS PER LEG



## PACKAGE OUTLINE 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 = Marking Code  
G = Green Compound  
YWW = Date Code  
F = Factory Code

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