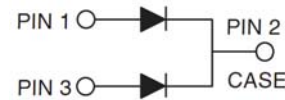


## Dual Common Cathode Schottky Rectifier

### 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 - halogen-free

Base P/N with prefix "H" on packing code - AEC-Q101 qualified

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

Meet JESD 201 class 1A whisker test,

with prefix "H" on packing code meet JESD 201 class 2 whisker test

**Polarity:** As marked

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

**Weight:** 1.9 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)                                                                                                                                         |                    |                            |                   |                        |                   |                              |                    |                              |      |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------|-------------------|------------------------|-------------------|------------------------------|--------------------|------------------------------|------|------|
| PARAMETER                                                                                                                                                                                                                            | SYMBOL             | MBR<br>3035<br>CT          | MBR<br>3045<br>CT | MBR<br>3050<br>CT      | MBR<br>3060<br>CT | MBR<br>3090<br>CT            | MBR<br>30100<br>CT | MBR<br>30150<br>CT           | UNIT |      |
| Maximum repetitive peak reverse voltage                                                                                                                                                                                              | V <sub>RRM</sub>   | 35                         | 45                | 50                     | 60                | 90                           | 100                | 150                          | V    |      |
| Maximum RMS voltage                                                                                                                                                                                                                  | V <sub>RMS</sub>   | 24                         | 31                | 35                     | 42                | 63                           | 70                 | 105                          | V    |      |
| Maximum DC blocking voltage                                                                                                                                                                                                          | V <sub>DC</sub>    | 35                         | 45                | 50                     | 60                | 90                           | 100                | 150                          | V    |      |
| Maximum average forward rectified current                                                                                                                                                                                            | I <sub>F(AV)</sub> | 30                         |                   |                        |                   |                              |                    |                              | A    |      |
| Peak repetitive forward current<br>(Rated VR, Square wave, 20KHz)                                                                                                                                                                    | I <sub>FRM</sub>   | 30                         |                   |                        |                   |                              |                    |                              | A    |      |
| Peak forward surge current, 8.3 ms single half sine-wave<br>superimposed on rated load                                                                                                                                               | I <sub>FSM</sub>   | 200                        |                   |                        |                   |                              |                    |                              | A    |      |
| Peak repetitive reverse surge current (Note 1)                                                                                                                                                                                       | I <sub>RRM</sub>   | 1.0                        |                   |                        | 0.5               |                              |                    |                              | A    |      |
| Maximum instantaneous forward voltage (Note 2)<br>I <sub>F</sub> =15A, T <sub>J</sub> =25°C<br>I <sub>F</sub> =15A, T <sub>J</sub> =125°C<br>I <sub>F</sub> =30A, T <sub>J</sub> =25°C<br>I <sub>F</sub> =30A, T <sub>J</sub> =125°C | V <sub>F</sub>     | 0.7<br>0.6<br>0.82<br>0.73 |                   | 0.77<br>0.67<br>-<br>- |                   | 0.84<br>0.70<br>0.94<br>0.82 |                    | 0.95<br>0.92<br>1.02<br>0.98 | V    |      |
| Maximum reverse current @ rated VR    T <sub>J</sub> =25 °C<br>T <sub>J</sub> =125 °C                                                                                                                                                | I <sub>R</sub>     | 0.2                        |                   |                        |                   |                              |                    | 0.1                          | mA   |      |
|                                                                                                                                                                                                                                      |                    | 15                         |                   | 10                     |                   | 7.5                          |                    | 5                            |      |      |
| Voltage rate of change (Rated V <sub>R</sub> )                                                                                                                                                                                       | dV/dt              | 10000                      |                   |                        |                   |                              |                    |                              | V/μs |      |
| Typical thermal resistance                                                                                                                                                                                                           | R <sub>θJC</sub>   | 1.0                        |                   |                        |                   | 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.  | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | PACKAGE  | PACKING   |
|-----------|--------------------|--------------|---------------------|----------|-----------|
| MBR30xxCT | Prefix "H"         | C0           | Suffix "G"          | TO-220AB | 50 / Tube |

Note 1: "xx" defines voltage from 35V (MBR3035CT) to 150V (MBR30150CT)

# EXAMPLE

| PREFERRED P/N | PART NO.  | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION        |
|---------------|-----------|--------------------|--------------|---------------------|--------------------|
| MBR3060CT C0  | MBR3060CT |                    | C0           |                     |                    |
| MBR3060CT C0G | MBR3060CT |                    | C0           | G                   | Green compound     |
| MBR3060CTHC0  | MBR3060CT | H                  | C0           |                     | AEC-Q101 qualified |

# RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG.1- FORWARD CURRENT DERATING CURVE

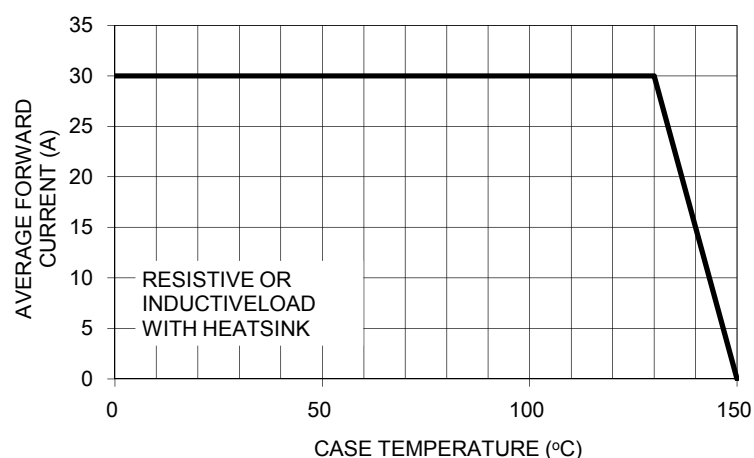


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

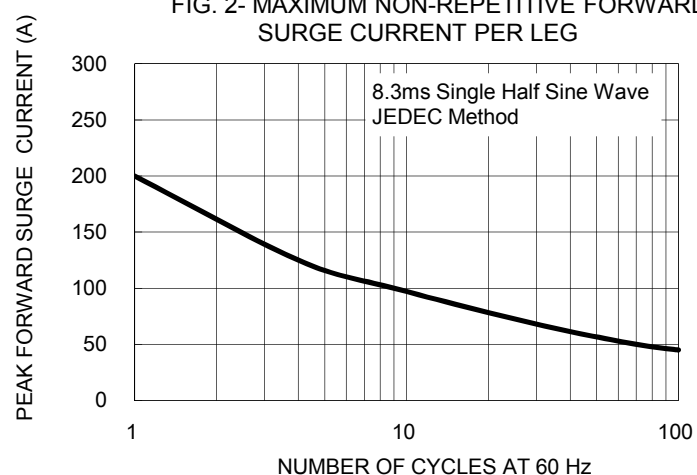


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

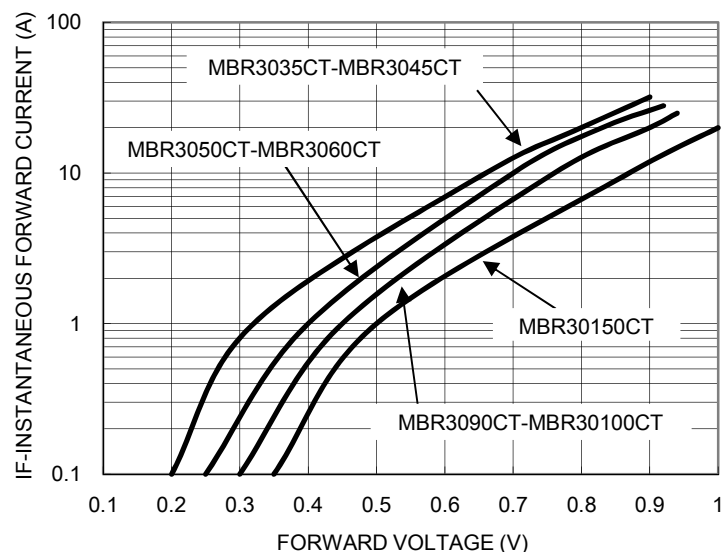


FIG. 4- TYPICAL REVERSE CHARACTERISTICS PER LEG

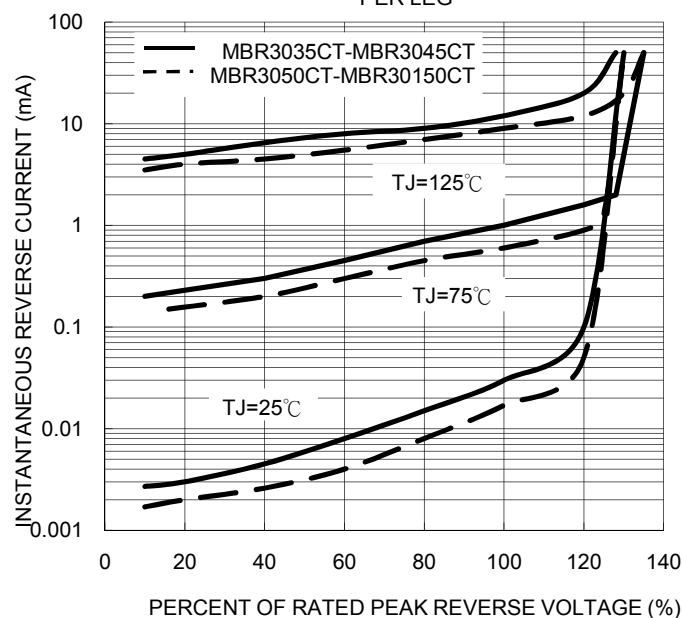


FIG. 5- TYPICAL JUNCTION CAPACITANCE PER LEG

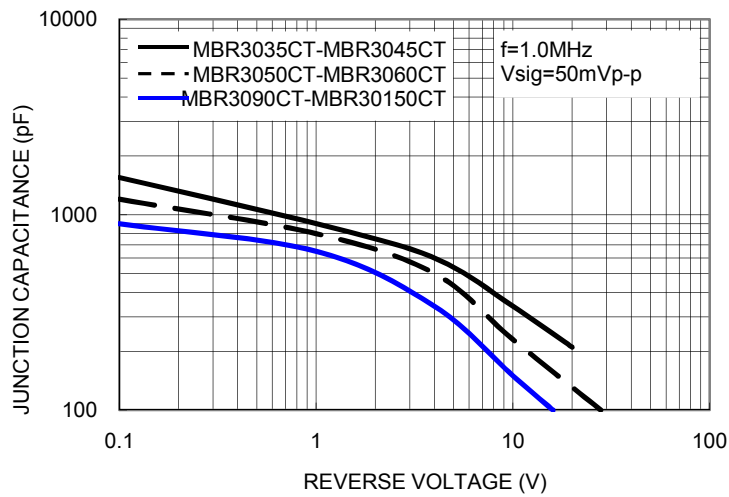
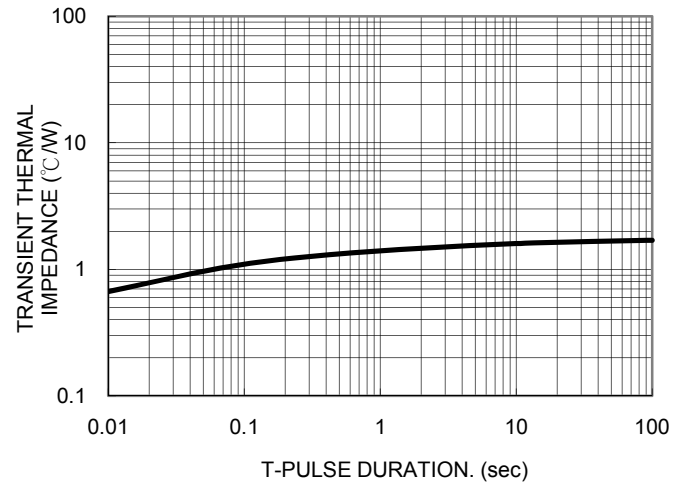
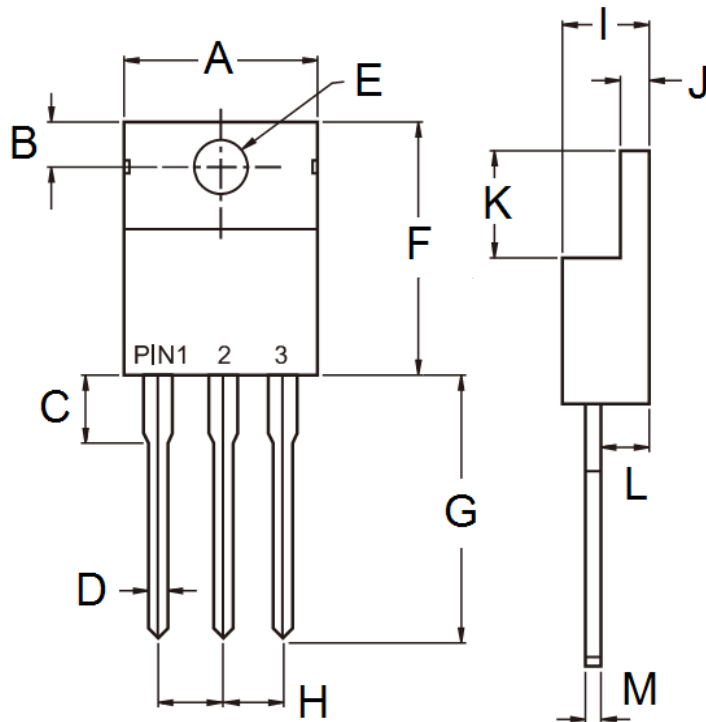


FIG. 6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

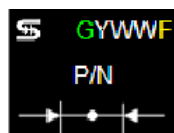


## PACKAGE OUTLINE DIMENSIONS



| 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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