

## Dual Common Cathode Schottky Rectifier

### FEATURES

- Low power loss, high efficiency
- Guardring for overvoltage protection
- High surge current capability
- UL Recognized File # E-326243
- 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-247AD (TO-3P)



### MECHANICAL DATA

**Case:** TO-247AD (TO-3P)

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:** 10 in-lbs maximum

**Weight:** 6.1 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25℃ unless otherwise noted)                                                                                                                                      |                    |                   |                   |                   |                   |                   |                    |                    |                    |      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|------|
| PARAMETER                                                                                                                                                                                                                        | SYMBOL             | MBR<br>3035<br>PT | MBR<br>3045<br>PT | MBR<br>3050<br>PT | MBR<br>3060<br>PT | MBR<br>3090<br>PT | MBR<br>30100<br>PT | MBR<br>30150<br>PT | MBR<br>30200<br>PT | UNIT |
| Maximum repetitive peak reverse voltage                                                                                                                                                                                          | V <sub>RRM</sub>   | 35                | 45                | 50                | 60                | 90                | 100                | 150                | 200                | V    |
| Maximum RMS voltage                                                                                                                                                                                                              | V <sub>RMS</sub>   | 24                | 31                | 35                | 42                | 63                | 70                 | 105                | 140                | V    |
| Maximum DC blocking voltage                                                                                                                                                                                                      | V <sub>DC</sub>    | 35                | 45                | 50                | 60                | 90                | 100                | 150                | 200                | V    |
| Maximum average forward rectified current                                                                                                                                                                                        | I <sub>F(AV)</sub> | 30                |                   |                   |                   |                   |                    |                    |                    | A    |
| Peak repetitive forward current<br>(Rated V <sub>R</sub> , Square wave, 20KHz)                                                                                                                                                   | I <sub>FRM</sub>   | 30                |                   |                   |                   |                   |                    |                    |                    | A    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load                                                                                                                                              | I <sub>FSM</sub>   | 200               |                   |                   |                   |                   |                    |                    |                    | A    |
| Peak repetitive reverse surge Current (Note 1)                                                                                                                                                                                   | I <sub>RRM</sub>   | 2                 |                   | 1                 |                   |                   |                    |                    |                    | A    |
| Maximum instantaneous forward voltage (Note 2)<br>I <sub>F</sub> =15A, T <sub>J</sub> =25℃<br>I <sub>F</sub> =15A, T <sub>J</sub> =125℃<br>I <sub>F</sub> =30A, T <sub>J</sub> =25℃<br>I <sub>F</sub> =30A, T <sub>J</sub> =125℃ | V <sub>F</sub>     | -                 |                   | 0.75              |                   | 0.85              |                    | 0.95               | 1.05               | V    |
|                                                                                                                                                                                                                                  |                    | 0.60              |                   | 0.65              |                   | 0.75              |                    | 0.92               | -                  |      |
|                                                                                                                                                                                                                                  |                    | 0.82              |                   | -                 |                   | -                 |                    | 1.02               | 1.10               |      |
|                                                                                                                                                                                                                                  |                    | 0.73              |                   | -                 |                   | -                 |                    | 0.98               | -                  |      |
| Maximum reverse current @ rated VR    T <sub>J</sub> =25 °℃<br>T <sub>J</sub> =125 °℃                                                                                                                                            | I <sub>R</sub>     | 1                 |                   |                   |                   | 0.5               |                    |                    | 0.1                | mA   |
|                                                                                                                                                                                                                                  |                    | 20                |                   | 15                |                   | 10                |                    |                    |                    |      |
| Voltage rate of change,(Rated V <sub>R</sub> )                                                                                                                                                                                   | dV/dt              | 10,000            |                   |                   |                   |                   |                    |                    |                    | V/μs |
| Typical thermal resistance                                                                                                                                                                                                       | R <sub>θJC</sub>   | 1.4               |                   |                   |                   |                   |                    |                    |                    | °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: 2.0μs Pulse Width, f=1.0KHz

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

## ORDERING INFORMATION

| PART NO.              | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | PACKAGE | PACKING   |
|-----------------------|--------------------|--------------|---------------------|---------|-----------|
| MBR30xxPT<br>(Note 1) | Prefix "H"         | C0           | Suffix "G"          | TO-3P   | 30 / Tube |

Note 1: "xx" defines voltage from 35V (MBR3035PT) to 200V (MBR30200PT)

## EXAMPLE

| PREFERRED P/N | PART NO.  | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION        |
|---------------|-----------|--------------------|--------------|---------------------|--------------------|
| MBR3060PT C0  | MBR3060PT |                    | C0           |                     |                    |
| MBR3060PT C0G | MBR3060PT |                    | C0           | G                   | Green compound     |
| MBR3060PTH0   | MBR3060PT | H                  | C0           |                     | AEC-Q101 qualified |

## RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG. 1 FORWARD CURRENT DERATING CURVE

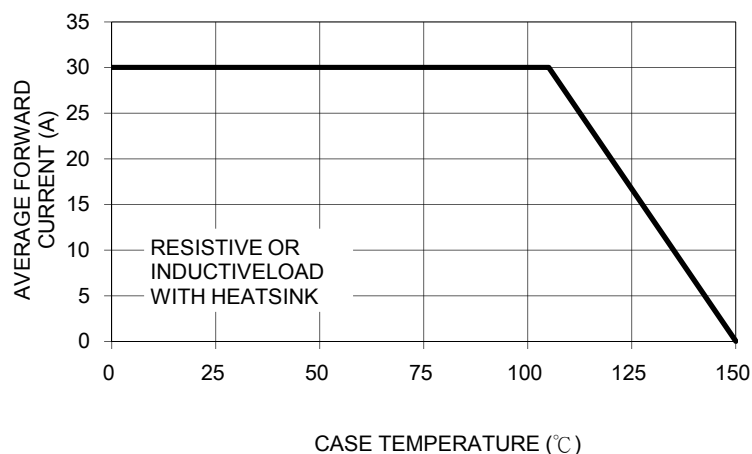


FIG. 2 MAXIMUM FORWARD SURGE CURRENT PER LEG

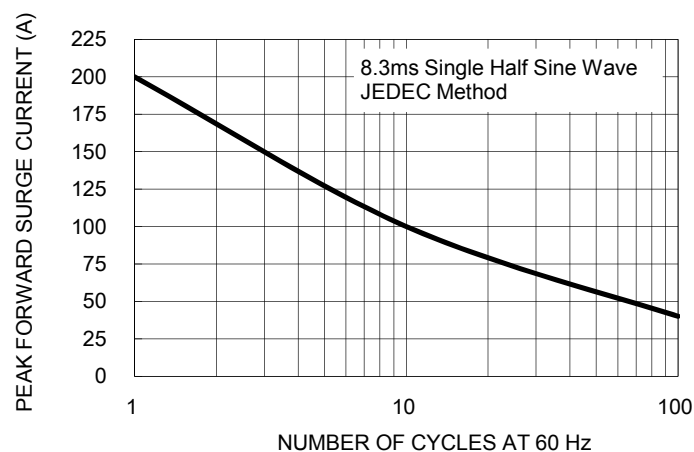


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

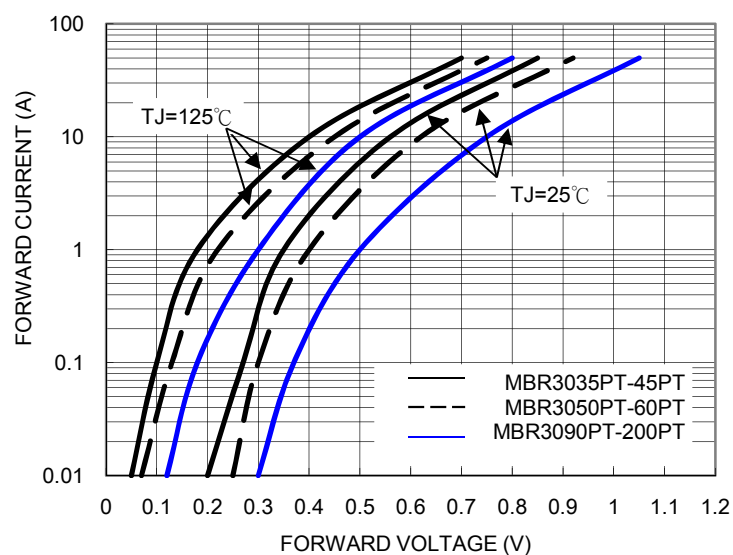


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

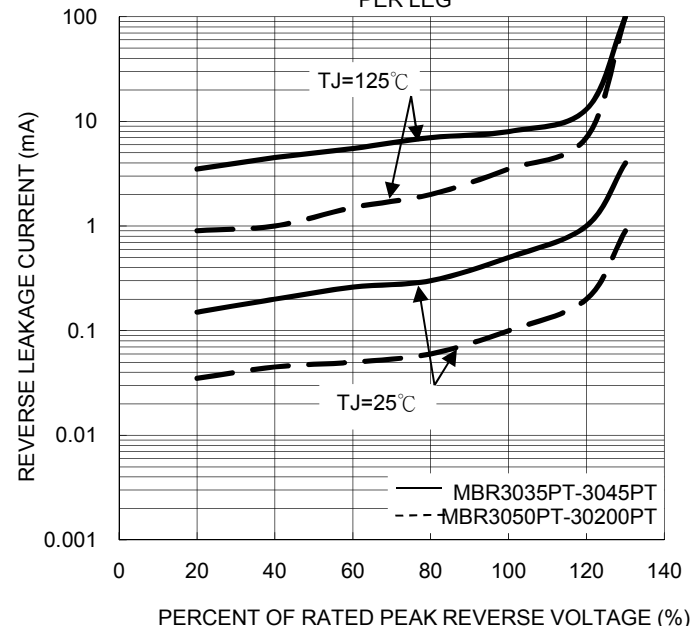


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

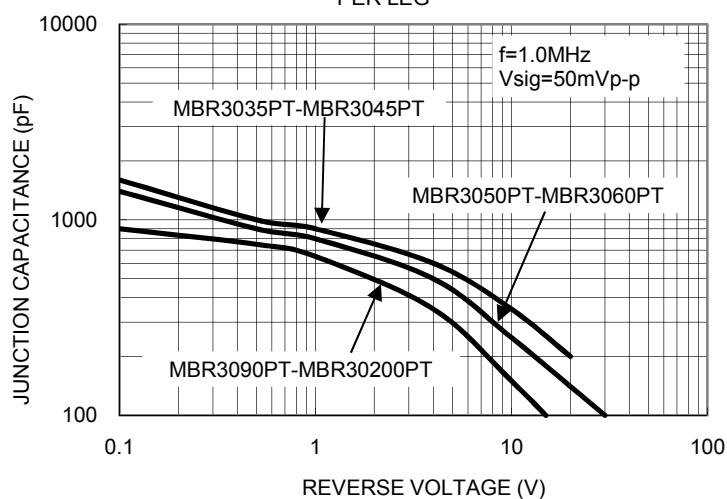
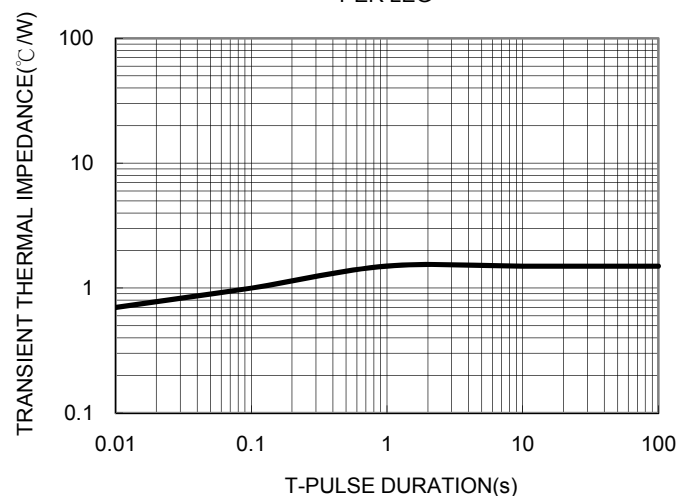
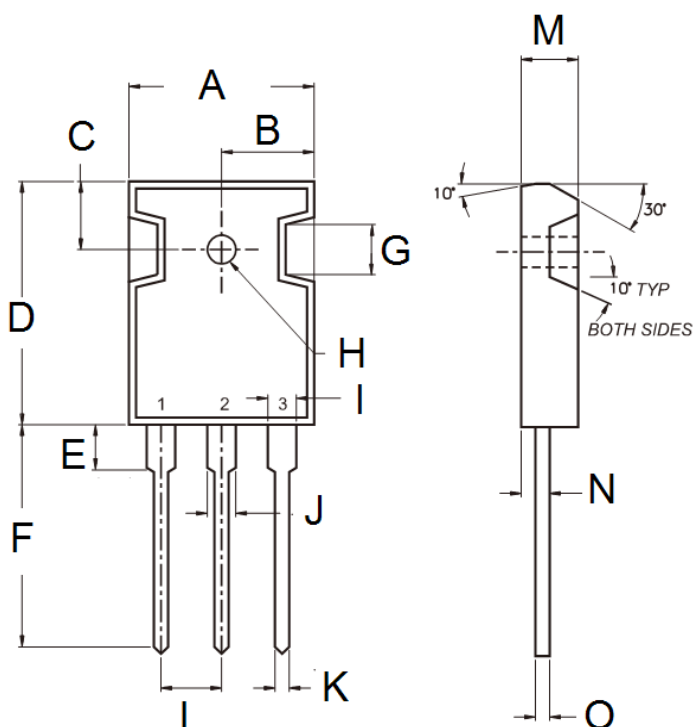


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



## PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) |       | Unit (inch) |       |
|------|-----------|-------|-------------|-------|
|      | Min       | Max   | Min         | Max   |
| A    | 15.90     | 16.40 | 0.626       | 0.646 |
| B    | 7.90      | 8.20  | 0.311       | 0.323 |
| C    | 5.70      | 6.20  | 0.224       | 0.244 |
| D    | 20.80     | 21.30 | 0.819       | 0.839 |
| E    | 3.50      | 4.10  | 0.138       | 0.161 |
| F    | 19.70     | 20.20 | 0.776       | 0.795 |
| G    | -         | 4.30  | -           | 0.169 |
| H    | 2.90      | 3.40  | 0.114       | 0.134 |
| I    | 1.93      | 2.18  | 0.076       | 0.086 |
| J    | 2.97      | 3.22  | 0.117       | 0.127 |
| K    | 1.12      | 1.22  | 0.044       | 0.048 |
| L    | 5.20      | 5.70  | 0.205       | 0.224 |
| M    | 4.90      | 5.16  | 0.193       | 0.203 |
| N    | 2.70      | 3.00  | 0.106       | 0.118 |
| O    | 0.51      | 0.76  | 0.020       | 0.030 |

## MARKING DIAGRAM



P/N = Marking Code  
G = Green Compound  
YWW = Date Code  
F = Factory Code

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