

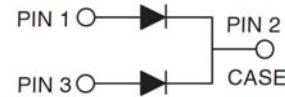
## Dual Common Cathode Schottky Rectifier

### 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°C unless otherwise noted)

| PARAMETER  | SYMBOL             | MBR 4035 PT                  | MBR 4045 PT | MBR 4050 PT       | MBR 4060 PT | MBR 4090 PT       | MBR 40100 PT | MBR 40150 PT              | MBR 40200 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> | 40                           |             |                   |             |                   |              |                           |              | A    |
| Peak repetitive forward current (Rated V <sub>R</sub> , Square wave, 20KHz)  | I <sub>FRM</sub>   | 40                           |             |                   |             |                   |              |                           |              | A    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load  | I <sub>FSM</sub>   | 330                          |             |                   |             |                   |              |                           |              | 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> =20A, T <sub>J</sub> =25°C<br>I <sub>F</sub> =20A, T <sub>J</sub> =125°C<br>I <sub>F</sub> =40A, T <sub>J</sub> =25°C<br>I <sub>F</sub> =40A, T <sub>J</sub> =125°C | V <sub>F</sub>     | 0.75<br>0.65<br>0.80<br>0.75 |             | 0.77<br>0.67<br>- |             | 0.84<br>0.74<br>- |              | 0.90<br>0.80<br>1.01<br>- |              | V    |
| Maximum reverse current @ rated VR<br>T <sub>J</sub> =25 °C<br>T <sub>J</sub> =125 °C  | I <sub>R</sub>     | 1.0                          |             | 0.5               |             | 0.1               |              |                           |              | mA   |
| Voltage rate of change (Rated V <sub>R</sub> )   | dV/dt              | 10,000                       |             |                   |             |                   |              |                           |              | V/μs |
| Typical thermal resistance   | R <sub>θJC</sub>   | 1.2                          |             |                   |             |                   |              |                           |              | °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   |
| MBR40xxPT (Note 1)   | Prefix "H"         | C0           | Suffix "G"          | TO-3P   | 30 / Tube |

Note 1: "xx" defines voltage from 35V (MBR4035PT) to 200V (MBR40200PT)

| EXAMPLE       |           |                    |              |                     |                    |
|---------------|-----------|--------------------|--------------|---------------------|--------------------|
| PREFERRED P/N | PART NO.  | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION        |
| MBR4060PT C0  | MBR4060PT |                    | C0           |                     |                    |
| MBR4060PT C0G | MBR4060PT |                    | C0           | G                   | Green compound     |
| MBR4060PTH0   | MBR4060PT | H                  | C0           |                     | AEC-Q101 qualified |

**RATINGS AND CHARACTERISTICS CURVES**

(TA=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

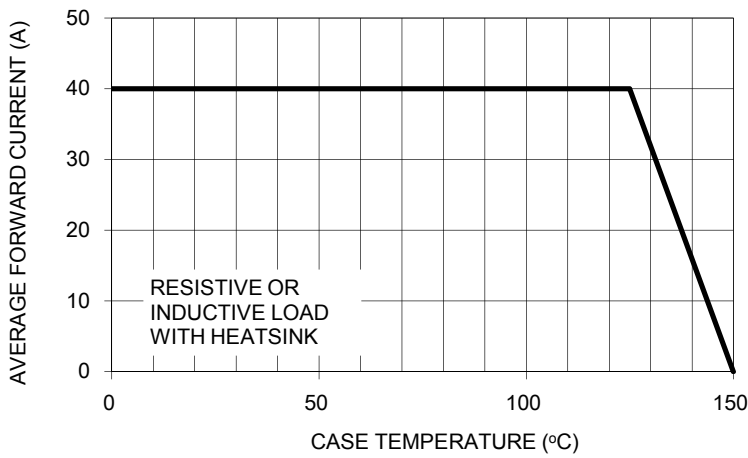


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

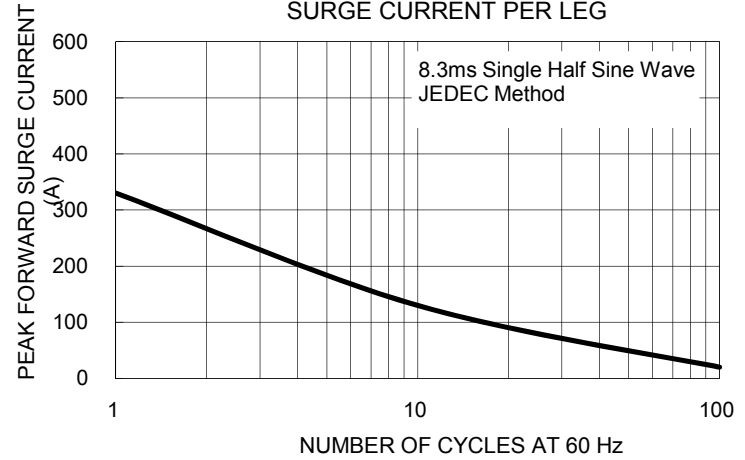


FIG. 3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

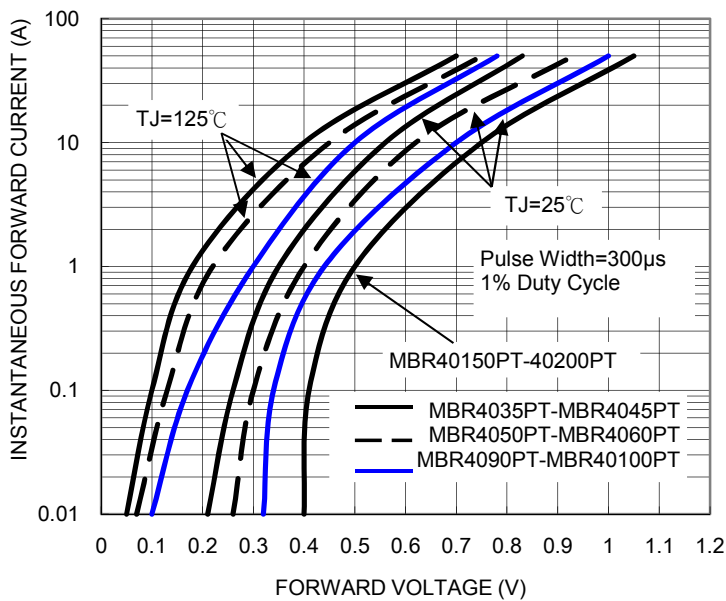


FIG.4 TYPICAL REVERSE CHARACTERISTICS PER LEG

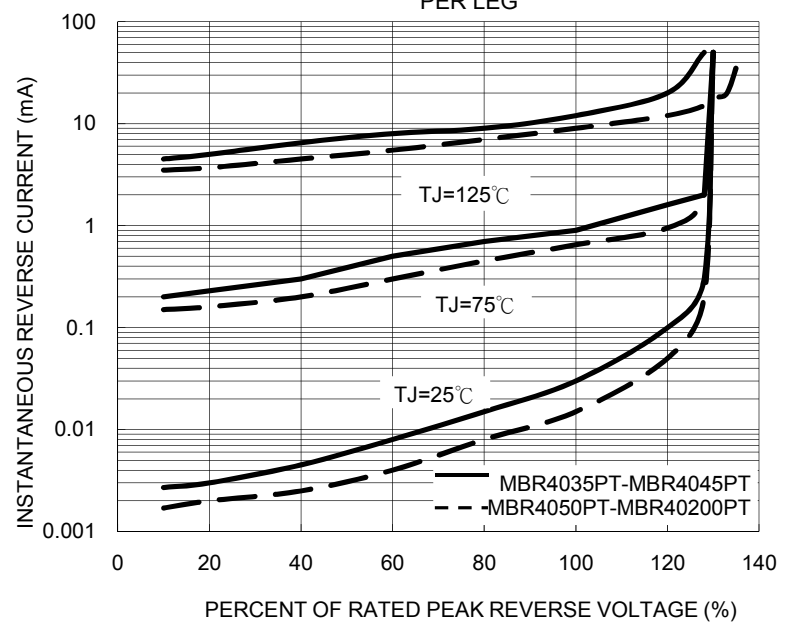


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

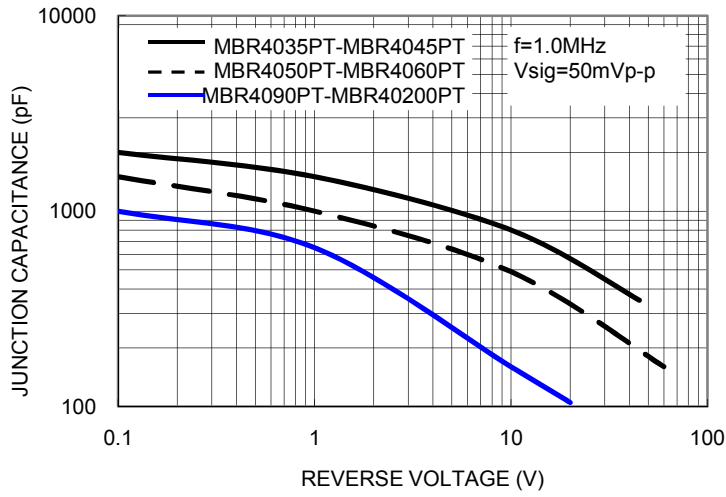
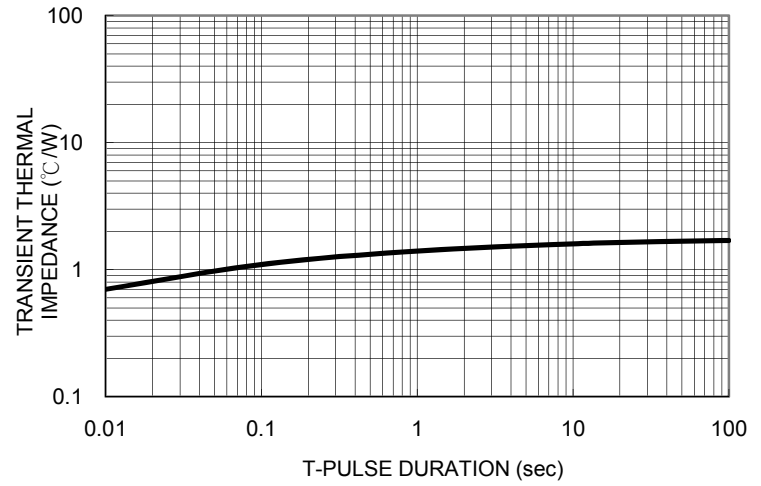
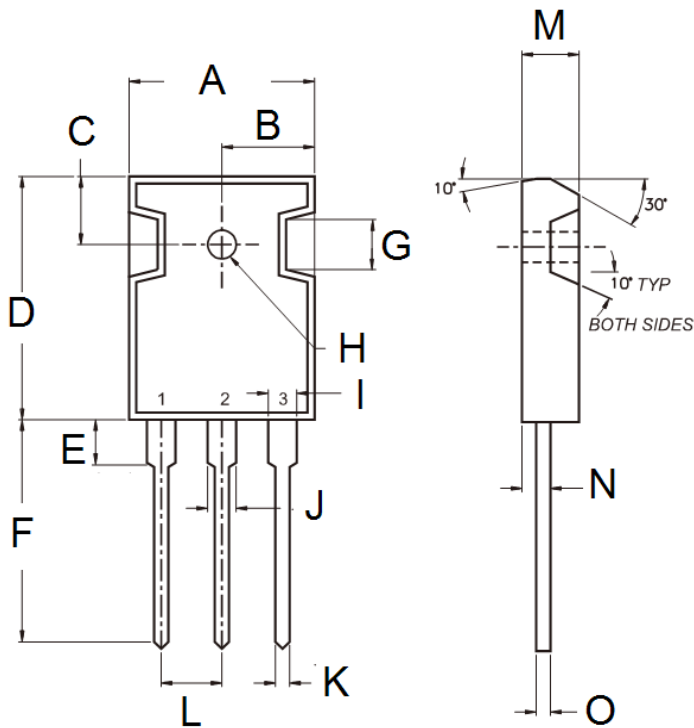


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) |       | Unit (inch) |       |
|------|-----------|-------|-------------|-------|
|      | Min       | Max   | Min         | Max   |
| A    | 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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