

## 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



### ITO-220AB



### MECHANICAL DATA

#### Case: ITO-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:** 1.7 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)                                                                                                                                         |                    |                              |                    |                              |                    |                              |                     |                              |                     |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------|--------------------|------------------------------|--------------------|------------------------------|---------------------|------------------------------|---------------------|------|
| PARAMETER                                                                                                                                                                                                                            | SYMBOL             | MBRF<br>3035<br>CT           | MBRF<br>3045<br>CT | MBRF<br>3050<br>CT           | MBRF<br>3060<br>CT | MBRF<br>3090<br>CT           | MBRF<br>30100<br>CT | MBRF<br>30150<br>CT          | MBRF<br>30200<br>CT | 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 VR, Square wave, 20KHz)                                                                                                                                                                    | I <sub>FRM</sub>   | 30                           |                    |                              |                    |                              |                     |                              |                     | A    |
| Peak forward surge current, 8.3 ms single half<br>sine-wave superimposed on rated load                                                                                                                                               | I <sub>FSM</sub>   | 200                          |                    |                              |                    |                              |                     |                              |                     | 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> =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>     | 0.70<br>0.60<br>0.82<br>0.73 |                    | 0.75<br>0.65<br>0.90<br>0.78 |                    | 0.84<br>0.70<br>0.94<br>0.82 |                     | 0.95<br>0.80<br>1.05<br>0.92 |                     | 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                          |                    |                              |                    |                              |                     |                              |                     | mA   |
|                                                                                                                                                                                                                                      |                    | 20                           |                    | 15                           |                    | 10                           |                     |                              |                     |      |
| Voltage rate of change (Rated V <sub>R</sub> )                                                                                                                                                                                       | dV/dt              | 10000                        |                    |                              |                    |                              |                     |                              |                     | V/μs |
| Typical thermal resistance                                                                                                                                                                                                           | R <sub>θJC</sub>   | 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: 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   |
| MBRF30xxCT (Note 1)  | Prefix "H"         | C0           | Suffix "G"          | ITO-220AB | 50 / Tube |

Note 1: "xx" defines voltage from 35V (MBRF3035CT) to 200V (MBRF30200CT)

| EXAMPLE        |            |                    |              |                     |                    |
|----------------|------------|--------------------|--------------|---------------------|--------------------|
| PREFERRED P/N  | PART NO.   | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION        |
| MBRF3060CT C0  | MBRF3060CT |                    | C0           |                     |                    |
| MBRF3060CT C0G | MBRF3060CT |                    | C0           | G                   | Green compound     |
| MBRF3060CTHC0  | MBRF3060CT | H                  | C0           |                     | AEC-Q101 qualified |

## RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

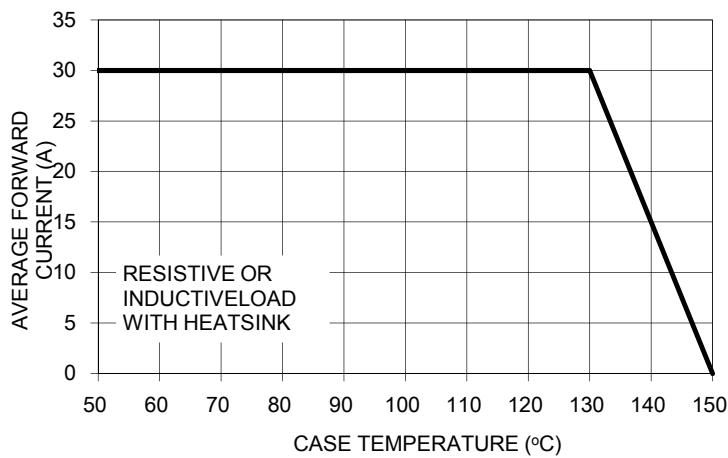


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

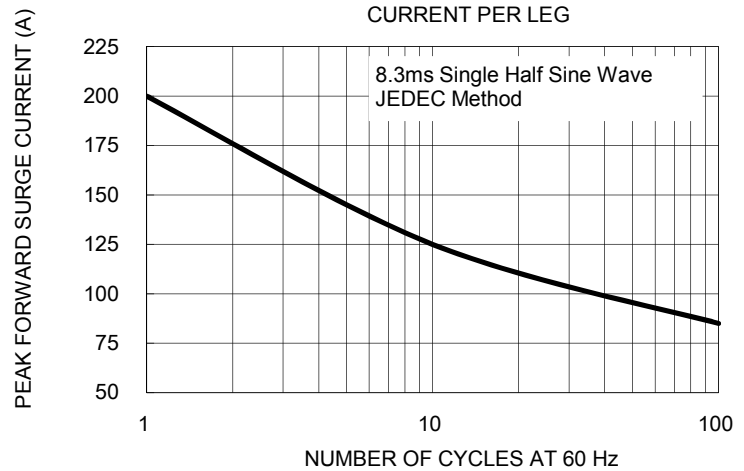


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

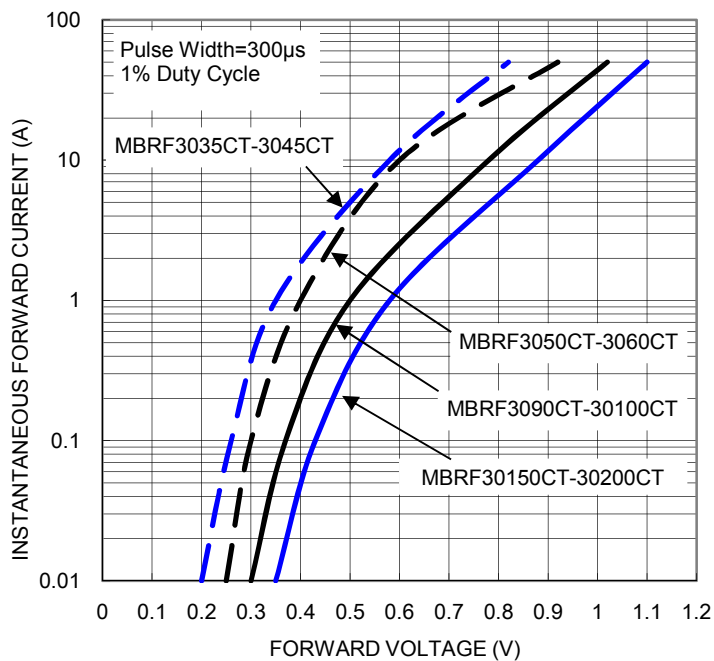


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

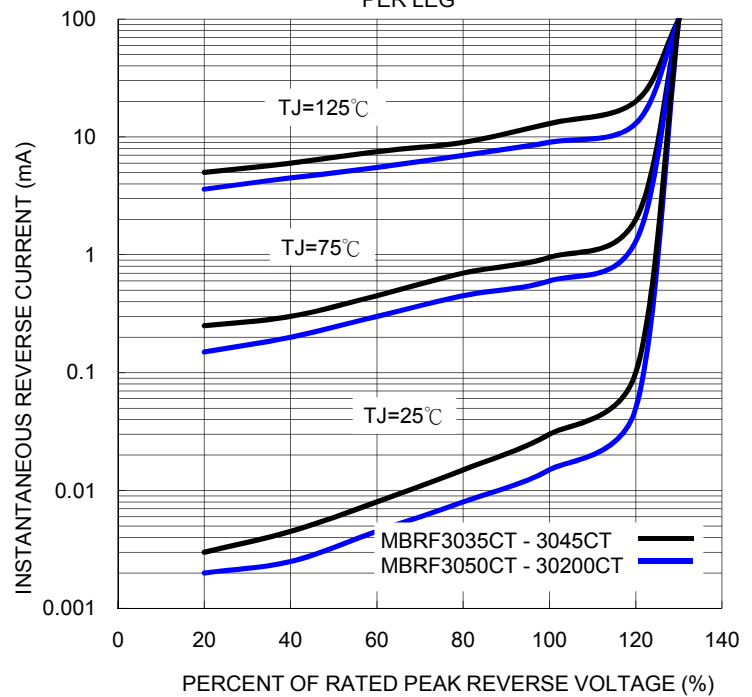


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

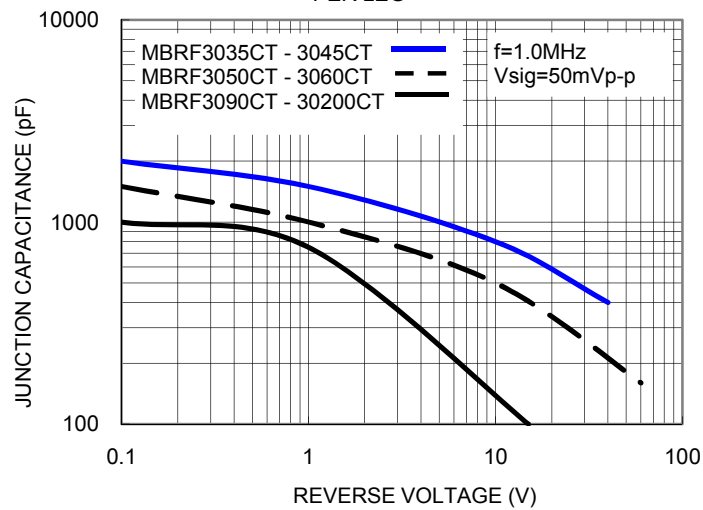
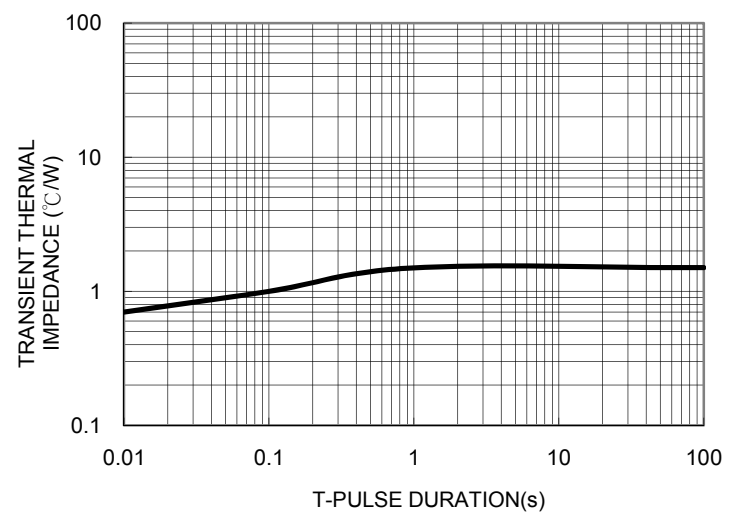
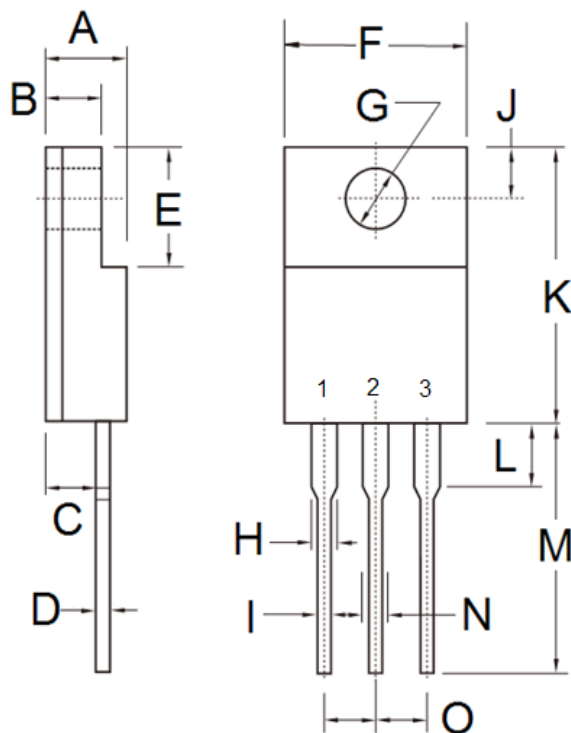


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



## PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) |       | Unit (inch) |       |
|------|-----------|-------|-------------|-------|
|      | Min       | Max   | Min         | Max   |
| A    | 4.30      | 4.70  | 0.169       | 0.185 |
| B    | 2.50      | 3.16  | 0.098       | 0.124 |
| C    | 2.30      | 2.96  | 0.091       | 0.117 |
| D    | 0.46      | 0.76  | 0.018       | 0.030 |
| E    | 6.30      | 6.90  | 0.248       | 0.272 |
| F    | 9.60      | 10.30 | 0.378       | 0.406 |
| G    | 3.00      | 3.40  | 0.118       | 0.134 |
| H    | 0.95      | 1.45  | 0.037       | 0.057 |
| I    | 0.50      | 0.90  | 0.020       | 0.035 |
| J    | 2.40      | 3.20  | 0.094       | 0.126 |
| K    | 14.80     | 15.50 | 0.583       | 0.610 |
| L    | -         | 4.10  | -           | 0.161 |
| M    | 12.60     | 13.80 | 0.496       | 0.543 |
| N    | -         | 1.80  | -           | 0.071 |
| O    | 2.41      | 2.67  | 0.095       | 0.105 |

## MARKING DIAGRAM



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

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