

## 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



### 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,

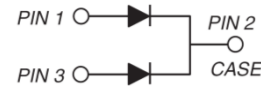
with prefix "H" on packing code meet JESD 201 class 2 whisker test

**Polarity:** As marked

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

**Weight:** 1.9 g (approximately)

**TO-220AB**



| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)                                              |                    |                |                |                 |      |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------|----------------|-----------------|------|
| PARAMETER                                                                                                                                 | SYMBOL             | MBR<br>30L45CT | MBR<br>30L60CT | MBR<br>30L100CT | UNIT |
| Maximum repetitive peak reverse voltage                                                                                                   | V <sub>RRM</sub>   | 45             | 60             | 100             | V    |
| Maximum RMS voltage                                                                                                                       | V <sub>RMS</sub>   | 31             | 42             | 70              | V    |
| Maximum DC blocking voltage                                                                                                               | V <sub>DC</sub>    | 45             | 60             | 100             | 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<br>sine-wave superimposed on rated load                                                    | I <sub>FSM</sub>   | 220            |                |                 | A    |
| Peak repetitive reverse surge current (Note 1)                                                                                            | I <sub>RRM</sub>   | 1              |                |                 | 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 | V <sub>F</sub>     | 0.55<br>0.50   | 0.60<br>0.56   | 0.77<br>0.67    | V    |
| Maximum reverse current @ Rated V <sub>R</sub> T <sub>J</sub> =25 °C<br>T <sub>J</sub> =100 °C                                            | I <sub>R</sub>     | 0.40<br>200    | 0.48<br>150    | 0.50<br>32      | mA   |
| Voltage rate of change (Rated V <sub>R</sub> )                                                                                            | dV/dt              | 10000          |                |                 | V/μs |
| Typical thermal resistance                                                                                                                | R <sub>θJC</sub>   | 1              |                |                 | °C/W |
| Operating junction temperature range                                                                                                      | T <sub>J</sub>     | - 55 to +150   |                |                 | °C   |
| Storage temperature range                                                                                                                 | T <sub>STG</sub>   | - 55 to +175   |                |                 | °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<br>QUALIFIED | PACKING CODE | GREEN COMPOUND<br>CODE | PACKAGE  | PACKING   |
|------------------------|-----------------------|--------------|------------------------|----------|-----------|
| MBR30LxxCT<br>(Note 1) | Prefix "H"            | C0           | Suffix "G"             | TO-220AB | 50 / Tube |

Note 1: "xx" defines voltage from 45V (MBR30L45CT) to 100V (MBR30L100CT)

## EXAMPLE

| PREFERRED P/N   | PART NO.    | AEC-Q101<br>QUALIFIED | PACKING CODE | GREEN COMPOUND<br>CODE | DESCRIPTION        |
|-----------------|-------------|-----------------------|--------------|------------------------|--------------------|
| MBR30L100CT C0  | MBR30L100CT |                       | C0           |                        |                    |
| MBR30L100CT C0G | MBR30L100CT |                       | C0           | G                      | Green compound     |
| MBR30L100CTHC0  | MBR30L100CT | H                     | C0           |                        | AEC-Q101 qualified |

## RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

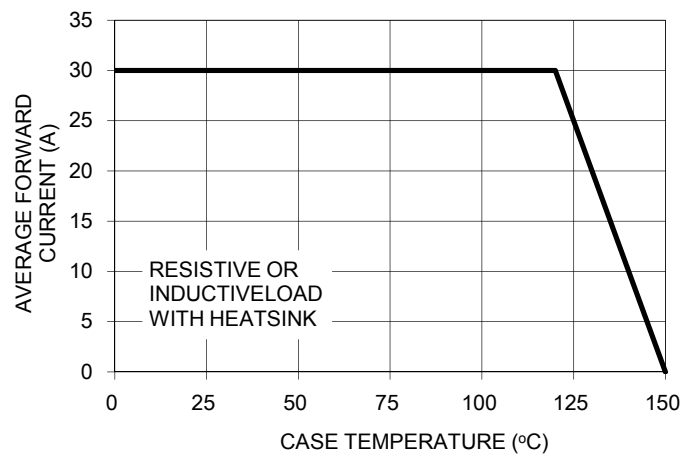


FIG. 2 MAXIMUM FORWARD SURGE CURRENT PER LEG

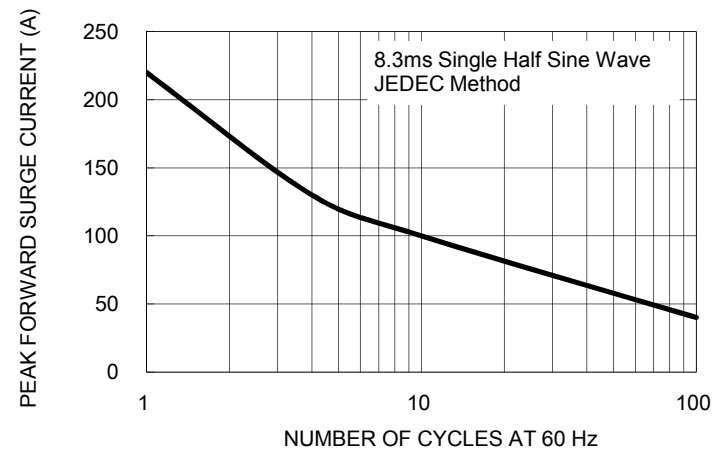


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

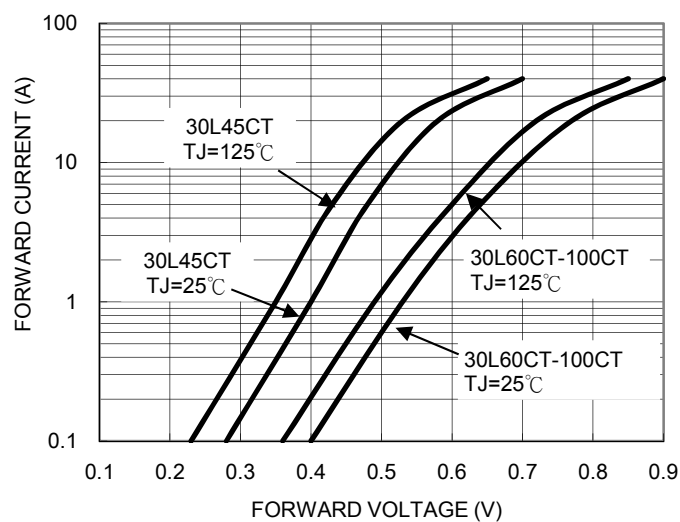


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

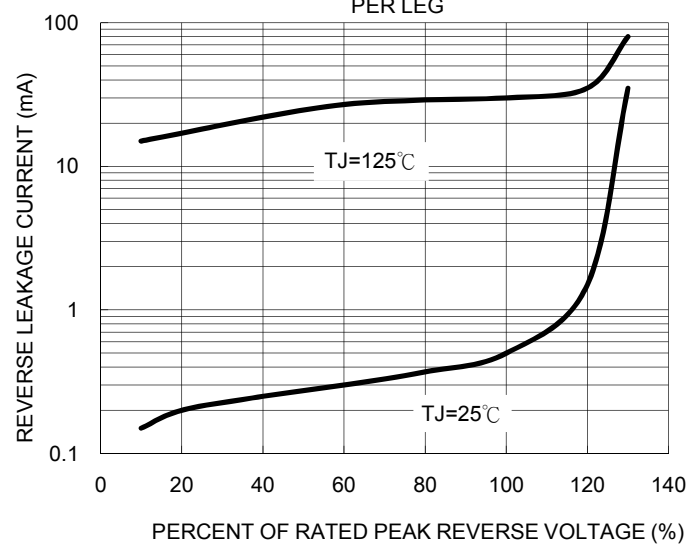


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

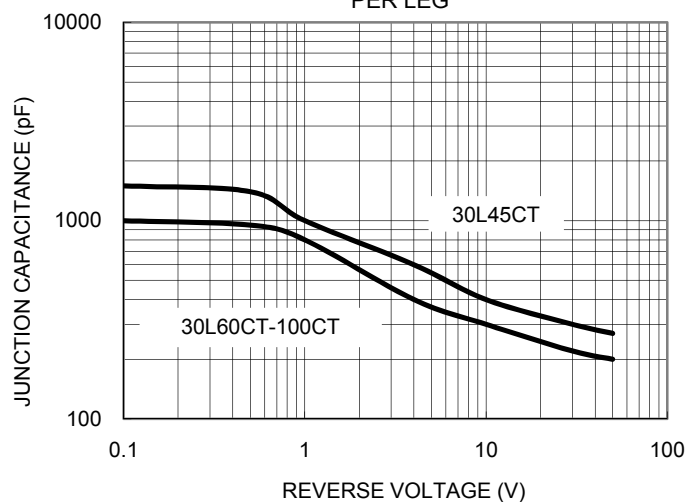
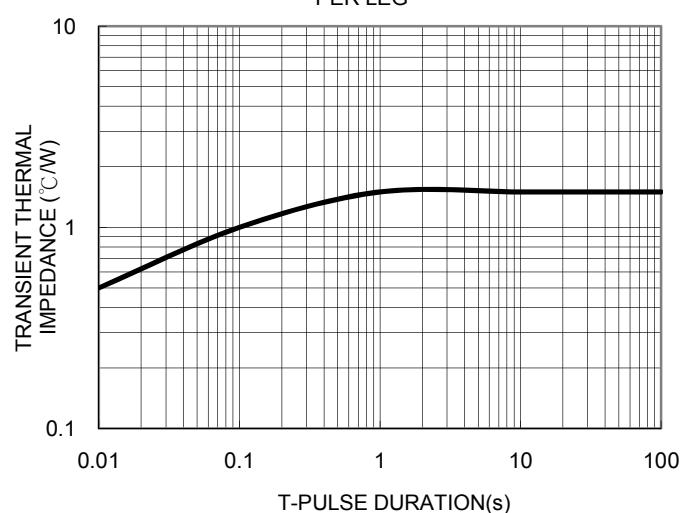
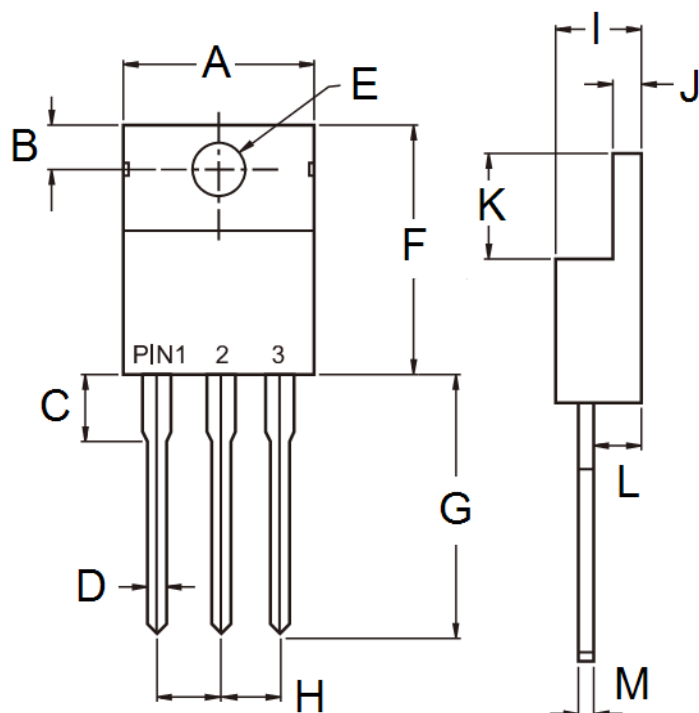


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

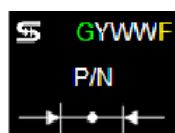


## PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) |       | Unit (inch) |       |
|------|-----------|-------|-------------|-------|
|      | Min       | Max   | Min         | Max   |
| A    | -         | 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 = Specific Device Code  
G = Green Compound  
YWW = Date Code  
F = Factory Code

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