

## 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,

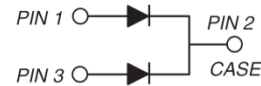
with prefix "H" on packing code meet JESD 201 class 2 whisker test

**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             | MBR20L100CT  |      | MBR20L120CT |      | UNIT |
| Maximum repetitive peak reverse voltage  | V <sub>RRM</sub>   | 100          |      | 120         |      | V    |
| Maximum RMS voltage  | V <sub>RMS</sub>   | 70           |      | 84          |      | V    |
| Maximum DC blocking voltage  | V <sub>DC</sub>    | 100          |      | 120         |      | V    |
| Maximum average forward rectified current  | I <sub>F(AV)</sub> | 20           |      |             |      | A    |
| Peak repetitive forward current<br>(Rated V <sub>R</sub> , Square Wave, 20KHz)   | I <sub>FRM</sub>   | 20           |      |             |      | A    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load  | I <sub>FSM</sub>   | 150          |      |             |      | 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> = 10A, T <sub>J</sub> =25°C<br>I <sub>F</sub> = 10A, T <sub>J</sub> =125°C<br>I <sub>F</sub> = 20A, T <sub>J</sub> =25°C<br>I <sub>F</sub> = 20A, T <sub>J</sub> =125°C | V <sub>F</sub>     | TYP          | MAX  | TYP         | MAX  | V    |
|  |                    | 0.72         | 0.75 | 0.78        | 0.83 |      |
|  |                    | 0.58         | 0.68 | 0.63        | 0.72 |      |
|  |                    | 0.81         | 0.85 | 0.86        | 0.90 |      |
| Maximum reverse current @ rated V <sub>R</sub><br>T <sub>J</sub> =25 °C<br>T <sub>J</sub> =125 °C  | I <sub>R</sub>     | TYP          | MAX  | TYP         | MAX  |      |
|  |                    | 1.10         | 20   | 1.00        | 20   | μA   |
|  |                    | 1.20         | 15   | 1.40        | 10   | mA   |
| Voltage rate of change (Rated V <sub>R</sub> )   | dV/dt              | 10000        |      |             |      | V/μs |
| Typical thermal resistance   | R <sub>θJC</sub>   | 2.8          |      | 3.0         |      | °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: t<sub>p</sub> = 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   |
| MBR20L1xxCT          | Prefix "H"         | C0           | Suffix "G"          | TO-220AB | 50 / Tube |

Note 1: "xx" defines voltage from 100V (MBR20L100CT) to 120V (MBR20L120CT)

| EXAMPLE         |             |                    |              |                     |                    |
|-----------------|-------------|--------------------|--------------|---------------------|--------------------|
| PREFERRED P/N   | PART NO.    | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION        |
| MBR20L100CT C0  | MBR20L100CT |                    | C0           |                     |                    |
| MBR20L100CT C0G | MBR20L100CT |                    | C0           | G                   | Green compound     |
| MBR20L100CTHC0  | MBR20L100CT | H                  | C0           |                     | AEC-Q101 qualified |

**RATINGS AND CHARACTERISTICS CURVES**

(TA=25°C unless otherwise noted)

FIG. 1 FORWARD CURRENT DERATING CURVE

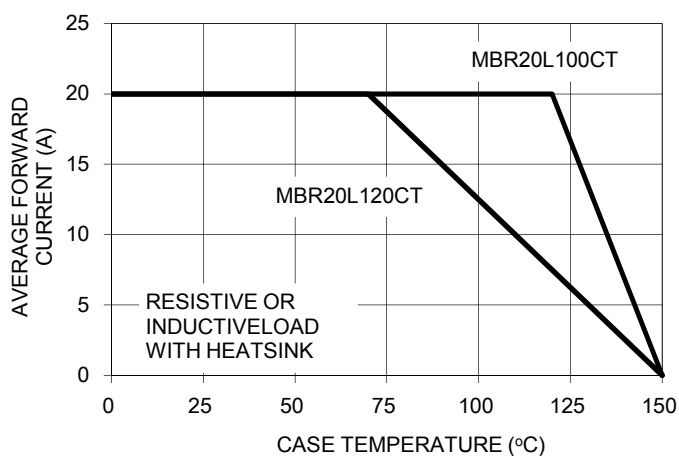


FIG. 2 MAXIMUM FORWARD SURGE CURRENT PER LEG

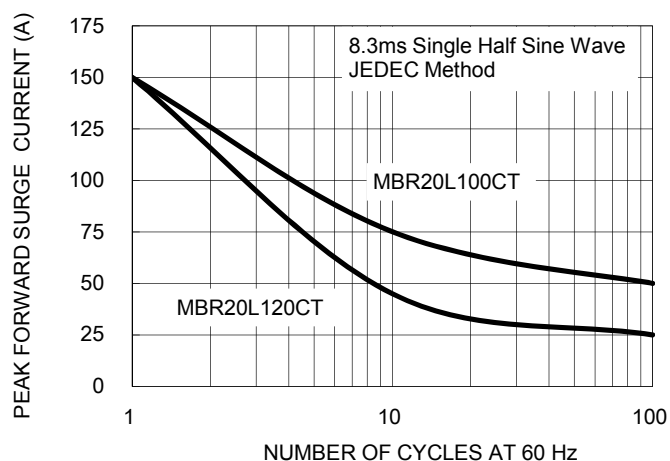


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

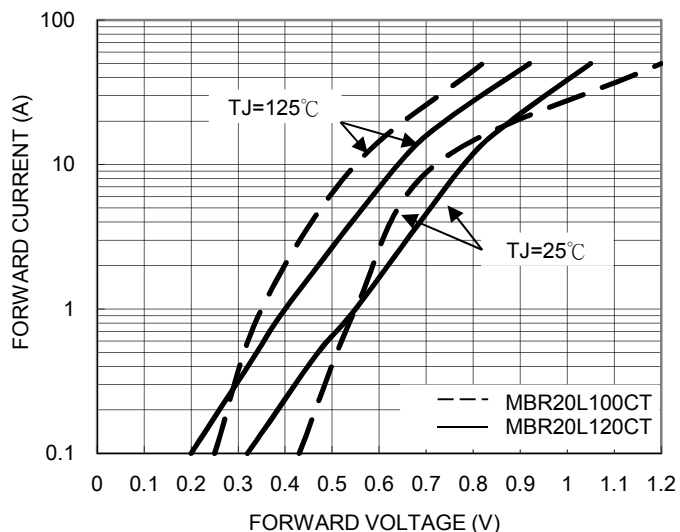


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

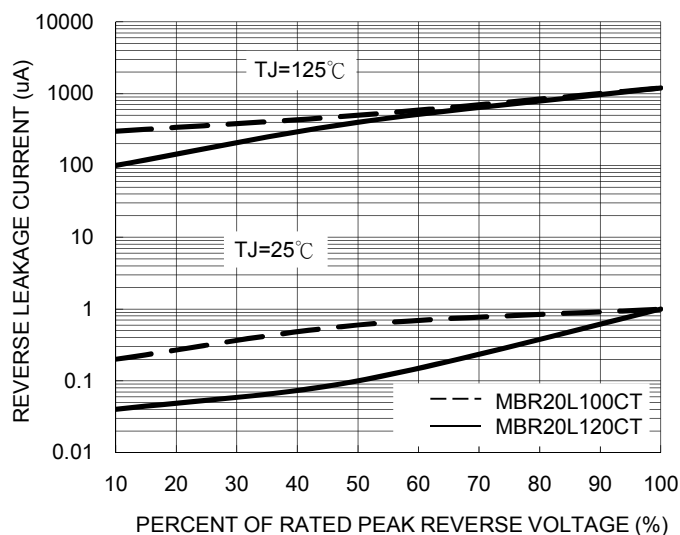


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

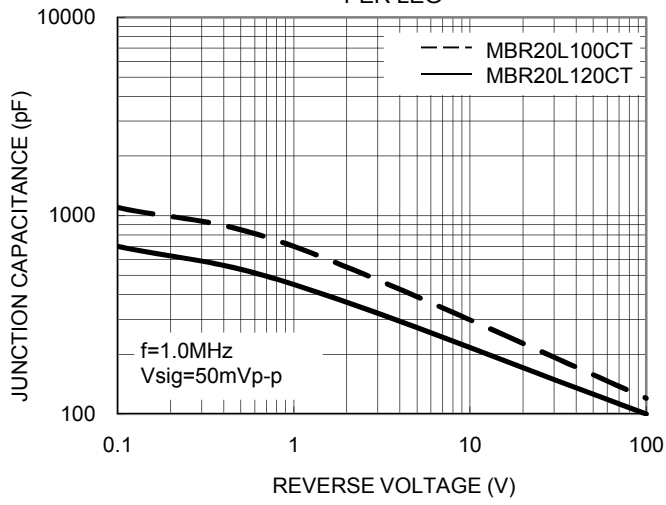
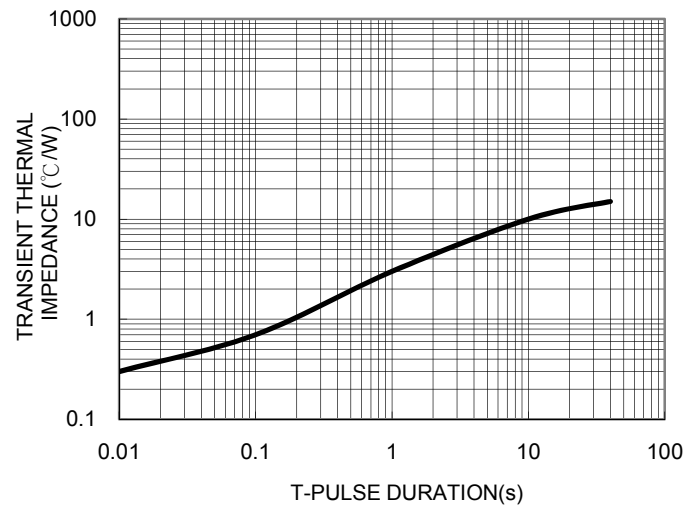
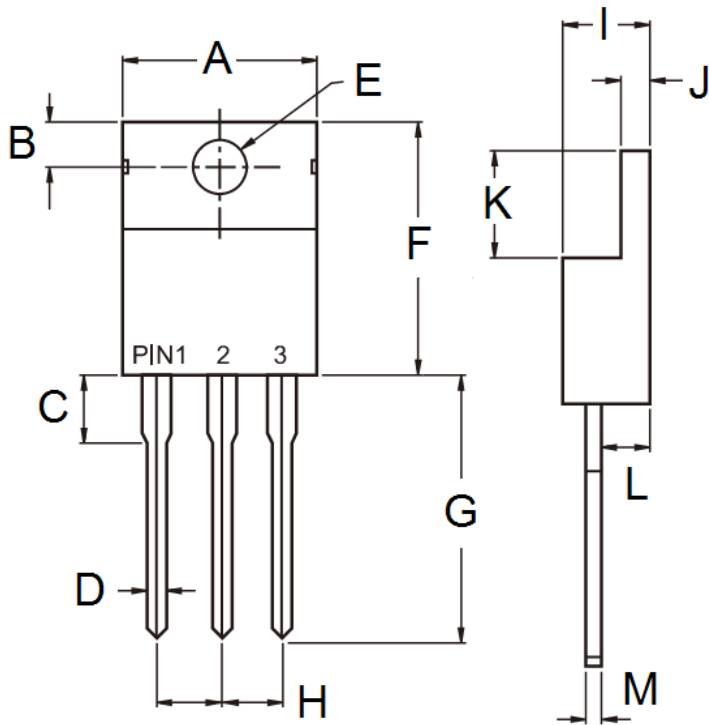


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

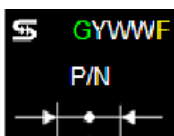


PACKAGE OUTLINE DIMENSIONS



| 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
- YW = Date Code
- F = Factory Code

## Notice

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