

10A, 35V - 200V Dual Common Cathode Schottky Rectifiers

FEATURES

- Low power loss, high efficiency
- Guard ring for over-voltage 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



MECHANICAL DATA

Case: TO-220AB

Molding compound, UL flammability classification rating 94V-0

Part No. with suffix "H" means AEC-Q101 qualified

Packing code with suffix "G" means green compound (halogen-free)

Terminal: Matte tin plated leads, solderable per JESD22-B102

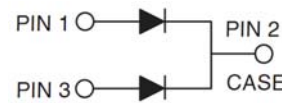
Meet JESD 201 class 2 whisker test

Polarity: As marked

Mounting torque: 0.56 Nm max.

Weight: 1.88 g (approximately)

TO-220AB



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

| PARAMETER | SYMBOL | MBR 1035 CT | MBR 1045 CT | MBR 1050 CT | MBR 1060 CT | MBR 1090 CT | MBR 10100 CT | MBR 10150 CT | MBR 10200 CT | UNIT |
|--|--------------------|------------------------------|-------------|------------------------------|-------------|------------------------------|--------------|------------------------------|--------------|------|
| Maximum repetitive peak reverse voltage | V _{RRM} | 35 | 45 | 50 | 60 | 90 | 100 | 150 | 200 | V |
| Maximum RMS voltage | V _{RMS} | 24 | 31 | 35 | 42 | 63 | 70 | 105 | 140 | V |
| Maximum DC blocking voltage | V _{DC} | 35 | 45 | 50 | 60 | 90 | 100 | 150 | 200 | V |
| Maximum average forward rectified current | I _{F(AV)} | 10 | | | | | | | | A |
| Peak repetitive forward current (Rated V _R , Square Wave, 20KHz) | I _{FRM} | 10 | | | | | | | | A |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | I _{FSM} | 120 | | | | | | | | A |
| Peak repetitive reverse surge current (Note 1) | I _{RRM} | 1 | 0.5 | | | | | | | A |
| Maximum instantaneous forward voltage (Note 2) I _F = 5 A, T _J =25°C I _F = 5 A, T _J =125°C I _F = 10 A, T _J =25°C I _F = 10 A, T _J =125°C | V _F | 0.70 0.57 0.80 0.67 | | 0.80 0.65 0.90 0.75 | | 0.85 0.75 0.95 0.85 | | 0.88 0.78 0.98 0.88 | | V |
| Maximum reverse current @ rated V _R T _J =25°C T _J =125°C | I _R | 0.1 | | | | | | | | mA |
| | | 15 | | 10 | | 2 | | 5 | | |
| Voltage rate of change (Rated V _R) | dV/dt | 10000 | | | | | | | | V/μs |
| Typical thermal resistance | R _{θJC} | 1.5 | | | | | | | | °C/W |
| Operating junction temperature range | T _J | - 55 to +150 | | | | | | | | °C |
| Storage temperature range | T _{STG} | - 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. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX (*) | PACKAGE | PACKING |
|-----------------------|-----------------|--------------|-------------------------|----------|-----------|
| MBR10xxCT (Note 1) | H | C0 | G | TO-220AB | 50 / Tube |

Note 1: "xx" defines voltage from 35V (MBR1035CT) to 200V (MBR10200CT)

*: Optional available

EXAMPLE

| EXAMPLE PART NO. | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
|------------------|-----------|-----------------|--------------|---------------------|--------------------------------------|
| MBR1060CTHC0G | MBR1060CT | H | C0 | G | AEC-Q101 qualified Green compound |

RATINGS AND CHARACTERISTICS CURVES

($T_A=25^\circ\text{C}$ unless otherwise noted)

FIG. 1 FORWARD CURRENT DERATING CURVE

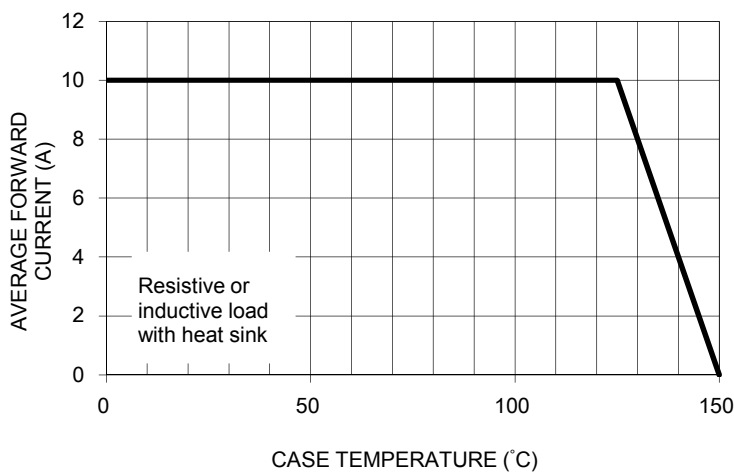


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

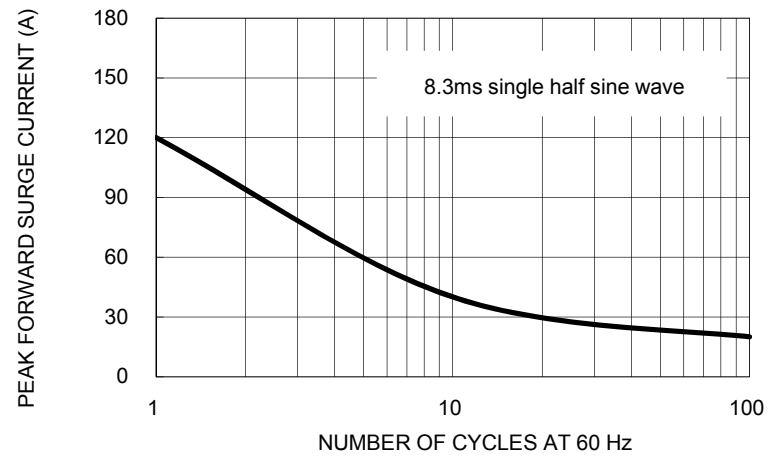


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

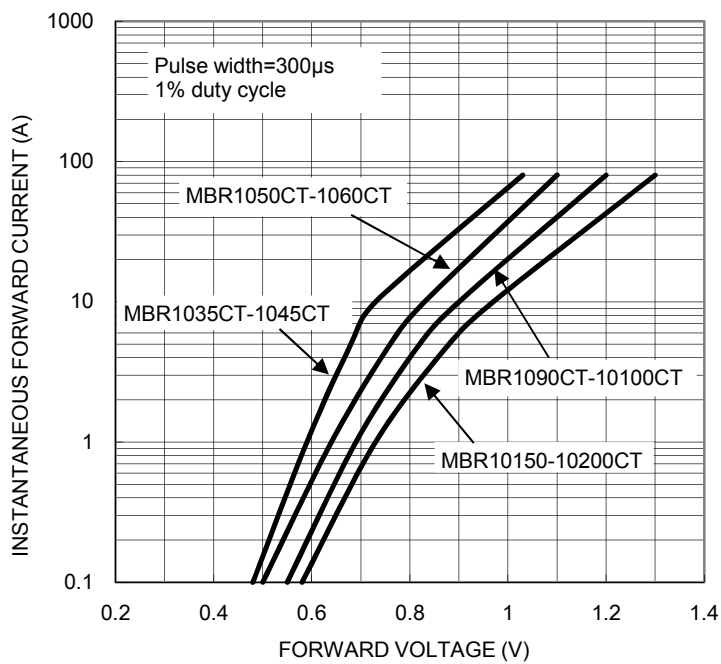


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

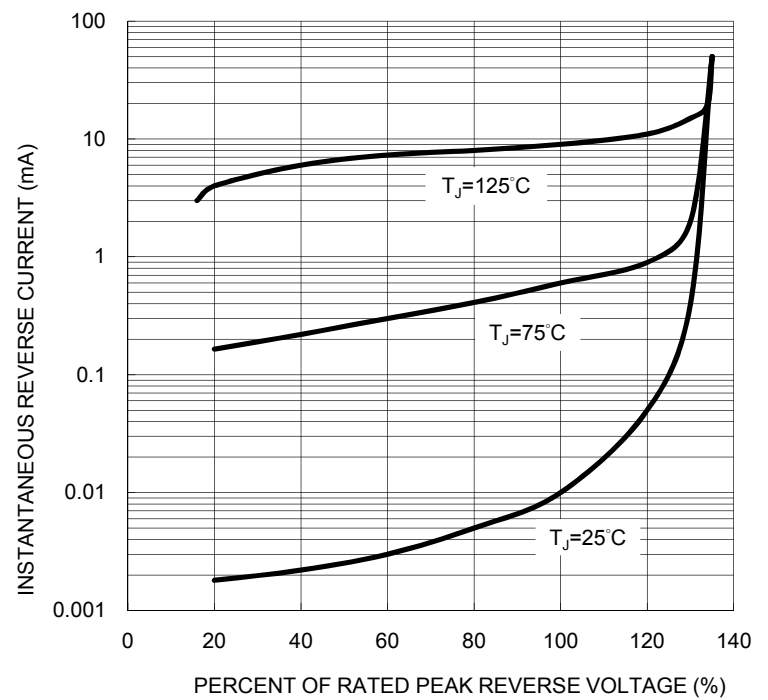


FIG. 5 TYPICAL JUNCTION CAPACITANCE

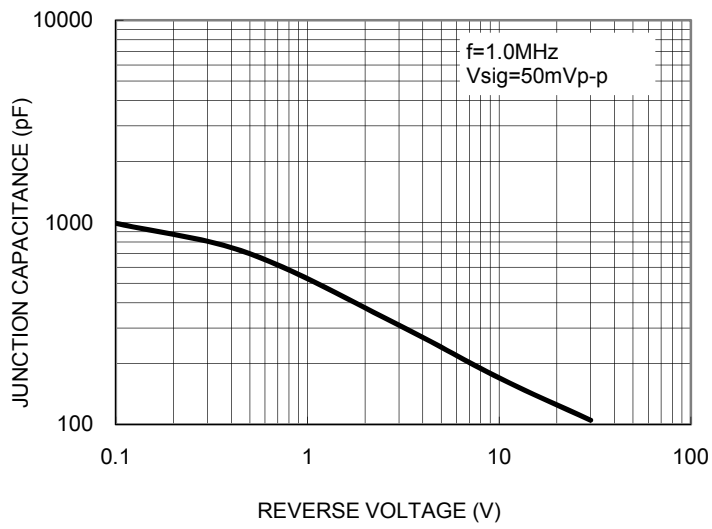
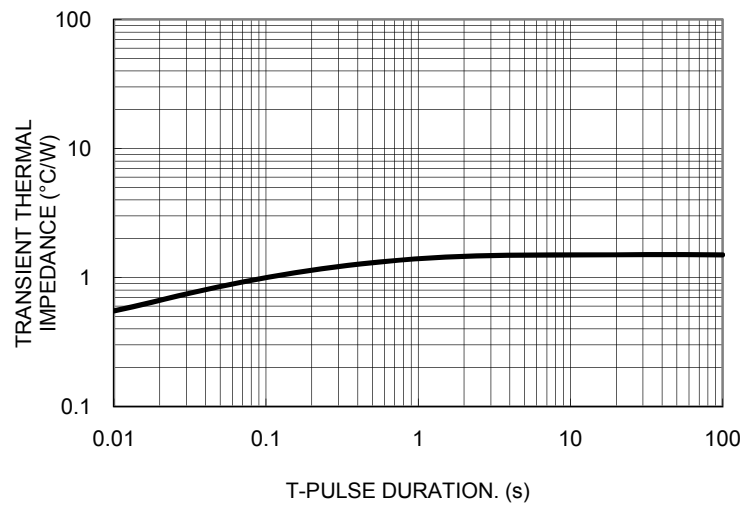
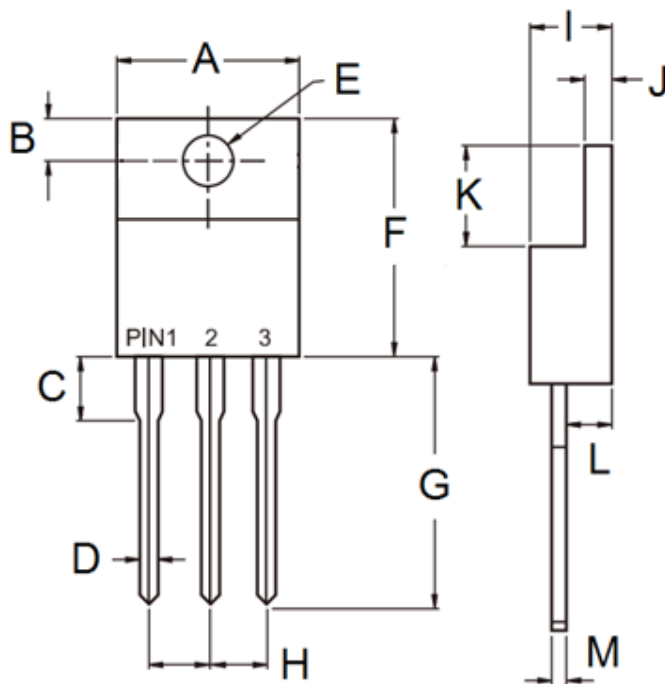


FIG. 6 TYPICAL TRANSIENT THERMAL CHARACTERISTICS PER LEG



PACKAGE OUTLINE DIMENSIONS
TO-220AB



| 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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