

Isolated Schottky Barrier Rectifiers

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



MECHANICAL DATA

Case: ITO-220AC

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,

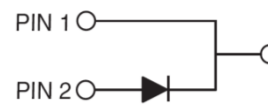
with prefix "H" on packing code meet JESD 201 class 2 whisker test

Polarity: As marked

Mounting torque: 5 in-lbs maximum

Weight: 1.7 g (approximately)

ITO-220AC



| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted) | | | | | | | | | |
|---|--------------------|--------------|------|--------------|------|--------------|-------|--------------|------|
| PARAMETER | SYMBOL | MBRF | MBRF | MBRF | MBRF | MBRF | MBRF | MBRF | UNIT |
| | | 1635 | 1645 | 1650 | 1660 | 1690 | 16100 | 16150 | |
| Maximum repetitive peak reverse voltage | V _{RRM} | 35 | 45 | 50 | 60 | 90 | 100 | 150 | V |
| Maximum RMS voltage | V _{RMS} | 24 | 31 | 35 | 42 | 63 | 70 | 105 | V |
| Maximum DC blocking voltage | V _{DC} | 35 | 45 | 50 | 60 | 90 | 100 | 150 | V |
| Maximum average forward rectified current | I _{F(AV)} | 16 | | | | | | | A |
| Peak repetitive forward current (Rated VR, square wave, 20KHz) | I _{FRM} | 32 | | | | | | | A |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | I _{FSM} | 150 | | | | | | | A |
| Peak repetitive reverse surge current (Note 1) | I _{RRM} | 1 | | 0.5 | | | | A | |
| Maximum instantaneous forward voltage (Note 2) I _F =16A, T _J =25°C I _F =16A, T _J =125°C | V _F | 0.63 0.57 | | 0.75 0.65 | | 0.85 0.75 | | 0.95 0.92 | V |
| Maximum reverse current @ Rated V _R T _J =25 °C T _J =125 °C | I _R | 0.5 | | | 0.3 | | 0.1 | | mA |
| | | 15 | | 10 | | 7.5 | | 5 | |
| Voltage rate of change (Rated V _R) | dV/dt | 10000 | | | | | | | V/μs |
| Typical thermal resistance | R _{θJC} | 3 | | | | | | | °C/W |
| Operating junction temperature range | T _J | - 55 to +150 | | | | | | | °C |
| Storage temperature range | T _{STG} | - 55 to +150 | | | | | | | °C |

Note 1: t_p = 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 |
| MBRF16xx (Note 1) | Prefix "H" | C0 | Suffix "G" | ITO-220AC | 50 / Tube |

Note 1: "xx" defines voltage from 35V (MBRF1635) to 150V (MBRF16150)

| EXAMPLE | | | | | |
|---------------|----------|--------------------|--------------|---------------------|--------------------|
| PREFERRED P/N | PART NO. | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION |
| MBRF1660 C0 | MBRF1660 | | C0 | | |
| MBRF1660 C0G | MBRF1660 | | C0 | G | Green compound |
| MBRF1660HC0 | MBRF1660 | H | C0 | | AEC-Q101 qualified |

RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

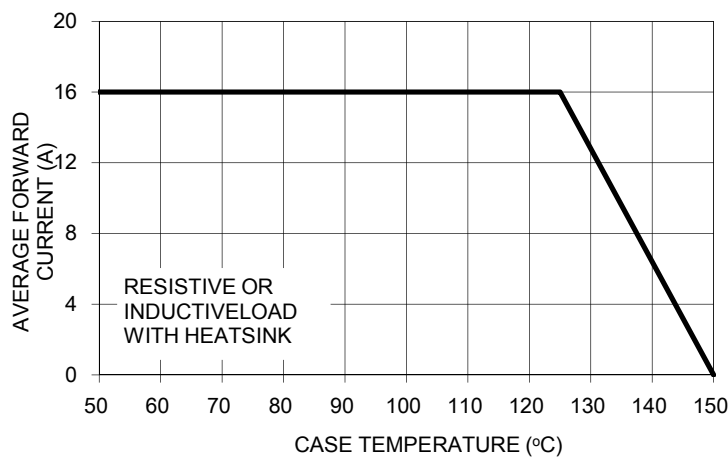


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

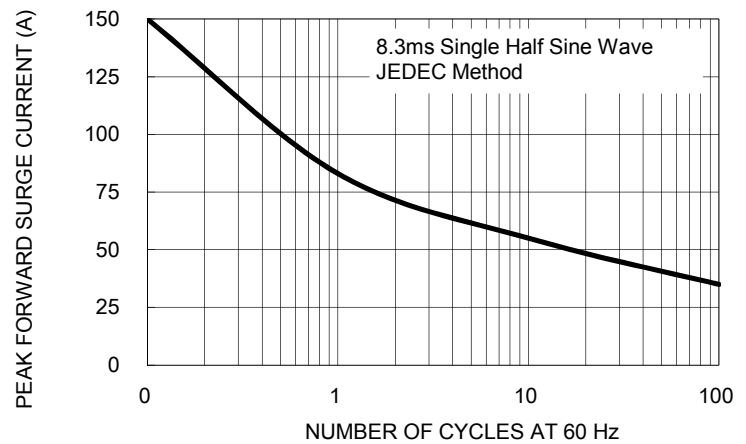


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

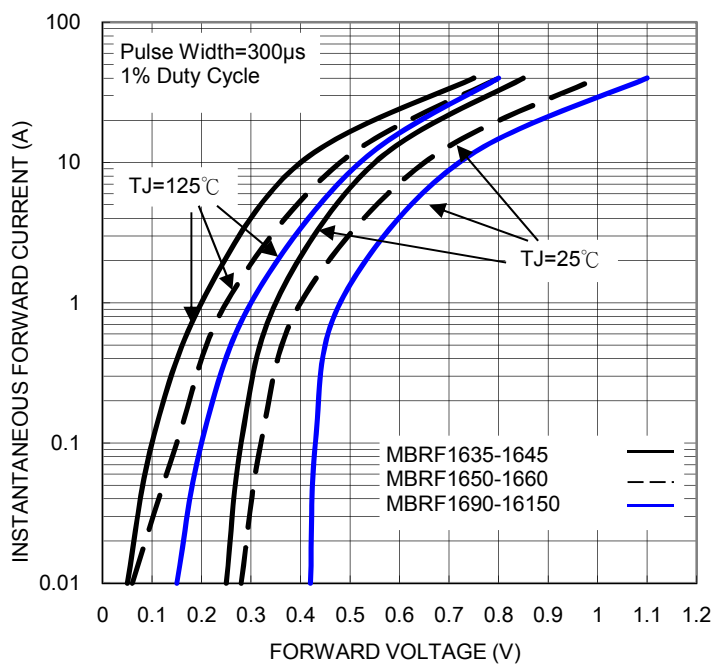


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

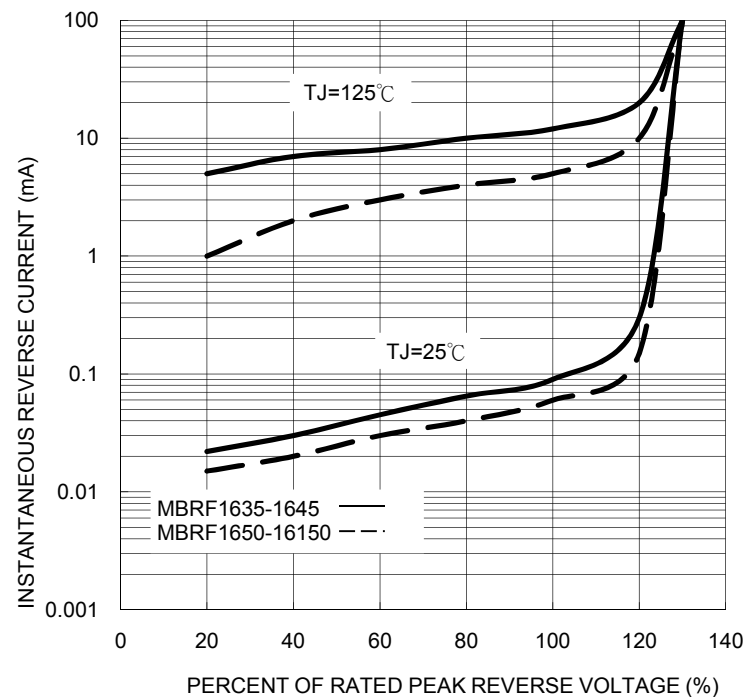


FIG. 5 TYPICAL JUNCTION CAPACITANCE

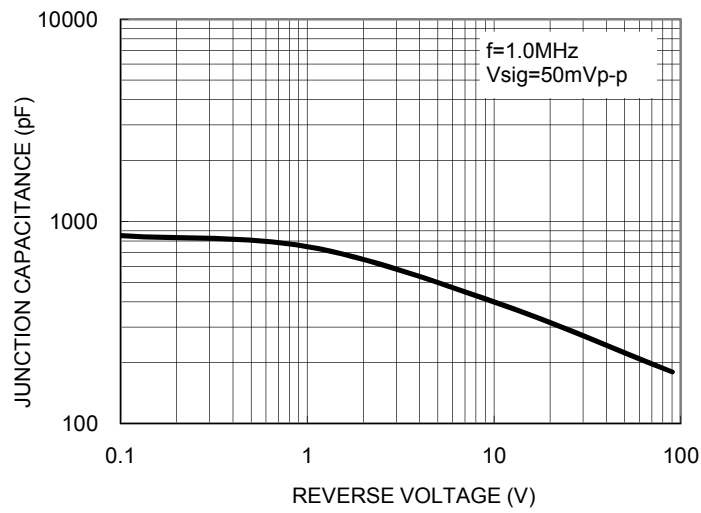
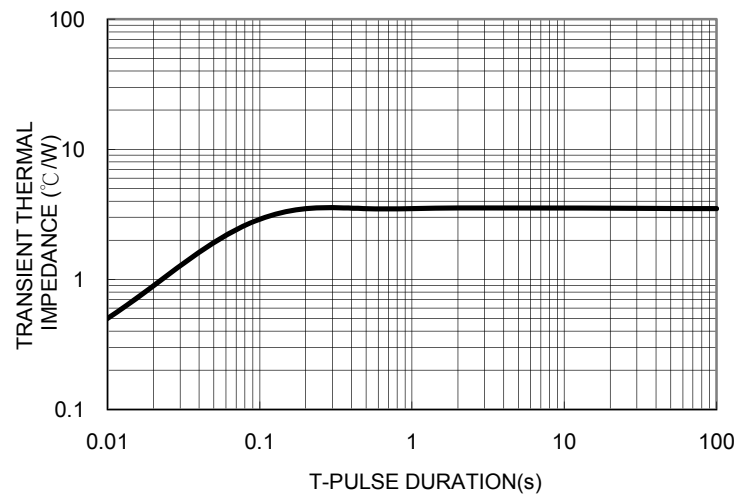
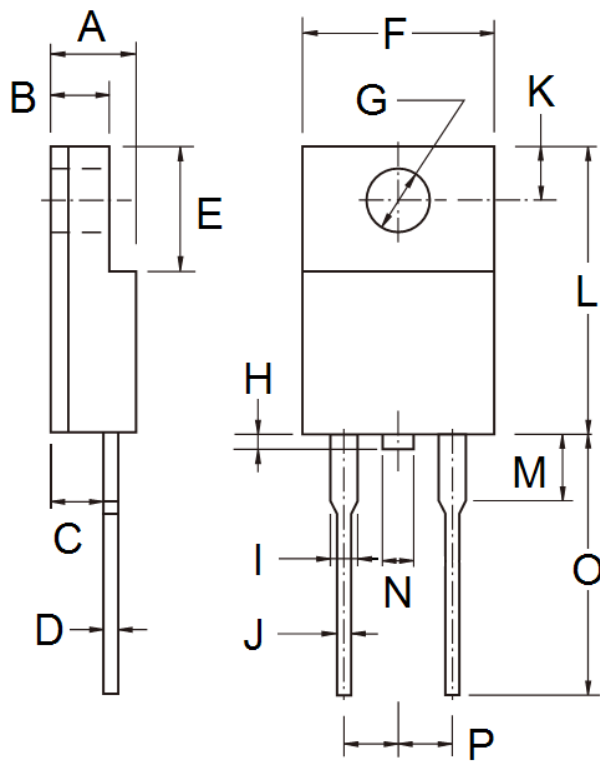


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE



PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|-------|-------------|-------|
| | Min | Max | Min | Max |
| A | 4.30 | 4.70 | 0.169 | 0.185 |
| B | 2.50 | 3.10 | 0.098 | 0.122 |
| C | 2.30 | 2.90 | 0.091 | 0.114 |
| 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 | 0.00 | 1.60 | 0.000 | 0.063 |
| I | 0.95 | 1.45 | 0.037 | 0.057 |
| J | 0.50 | 0.90 | 0.020 | 0.035 |
| K | 2.40 | 3.20 | 0.094 | 0.126 |
| L | 14.80 | 15.50 | 0.583 | 0.610 |
| M | - | 4.10 | - | 0.161 |
| N | - | 1.80 | - | 0.071 |
| O | 12.60 | 13.80 | 0.496 | 0.543 |
| P | 4.95 | 5.20 | 0.195 | 0.205 |

MARKING DIAGRAM



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

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