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7A, 35V - 150V Isolated Schottky Barrier Rectifiers

FEATURES

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



MECHANICAL DATA

Case: ITO-220AC

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

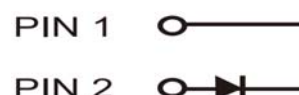
Meet JESD 201 class 2 whisker test

Polarity: As marked

Mounting torque: 0.56 Nm max.

Weight: 1.7 g (approximately)

ITO-220AC



| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted) | | | | | | | | | |
|--|--------------------|---------------------------|------------------------|-------------|------------------------|-------------|------------------------|--------------|------|
| PARAMETER | SYMBOL | MBRF 735 | MBRF 745 | MBRF 750 | MBRF 760 | MBRF 790 | MBRF 7100 | MBRF 7150 | UNIT |
| 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)} | 7.5 | | | | | | | A |
| Peak repetitive forward current (Rated V _R , Square wave, 20KHz) | I _{FRM} | 15 | | | | | | | 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 | | 0.5 | | | | | A |
| Maximum instantaneous forward voltage (Note 2) I _F =7.5A, T _J =25°C I _F =7.5A, T _J =125°C I _F =15A, T _J =25°C I _F =15A, T _J =125°C | V _F | - 0.57 0.84 0.72 | 0.75 0.65 - - | | 0.92 0.82 - - | | 1.02 0.92 - - | | V |
| Maximum reverse current @ rated V _R T _J =25°C T _J =125°C | I _R | 0.1 | | | | | | | mA |
| | | 15 | | 10 | | 5 | | | |
| Voltage rate of change (Rated V _R) | dV/dt | 10000 | | | | | | | V/μs |
| Typical thermal resistance | R _{θJC} | 7 | | | | | | | °C/W |
| Operating junction temperature range | T _J | - 55 to +150 | | | | | | | °C |
| Storage temperature range | T _{STG} | - 55 to +175 | | | | | | | °C |

Note 1: t_p = 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 |
|---------------------|-----------------|--------------|-------------------------|-----------|-----------|
| MBRF7xx (Note 1) | H | C0 | G | ITO-220AC | 50 / Tube |

Note 1: "xx" defines voltage from 35V (MBRF735) to 150V (MBRF7150)

*: Optional available

EXAMPLE

| EXAMPLE P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
|-------------|----------|-----------------|--------------|---------------------|--------------------------------------|
| MBRF760HC0G | MBRF760 | H | C0 | G | AEC-Q101 qualified Green compound |

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

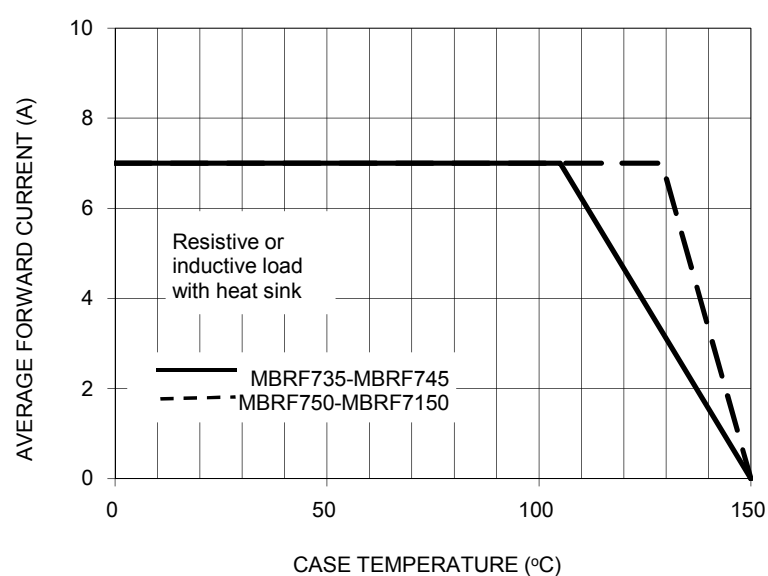


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

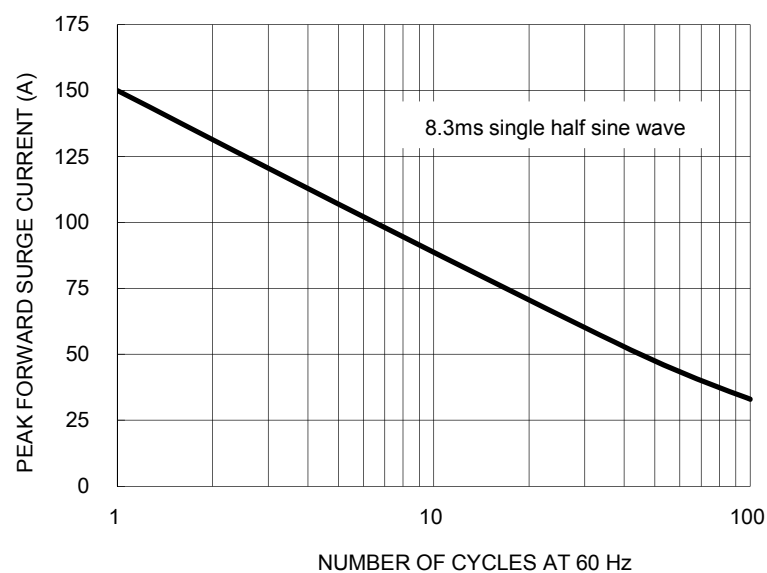


FIG. 3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

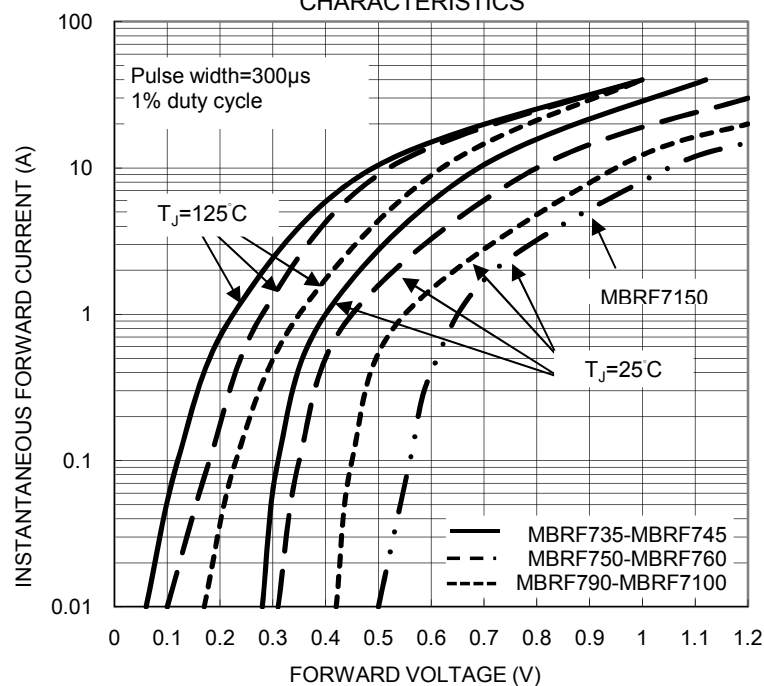


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

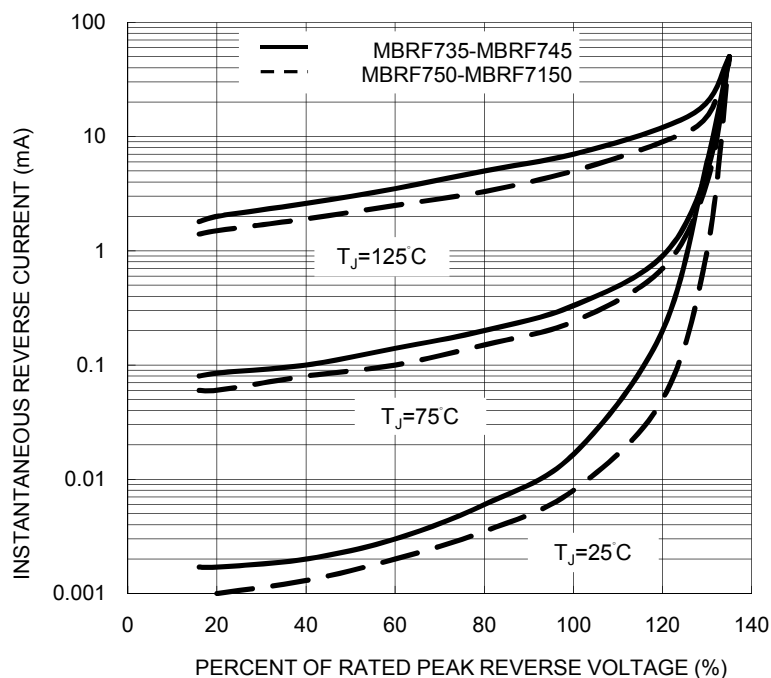


FIG. 5 TYPICAL JUNCTION CAPACITANCE

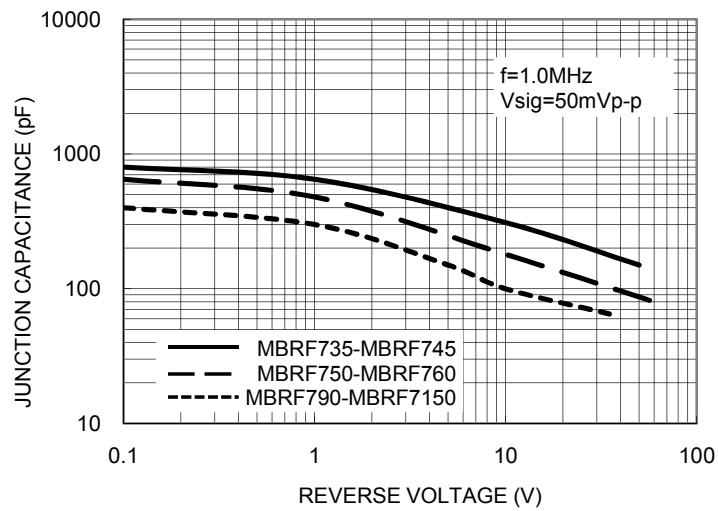
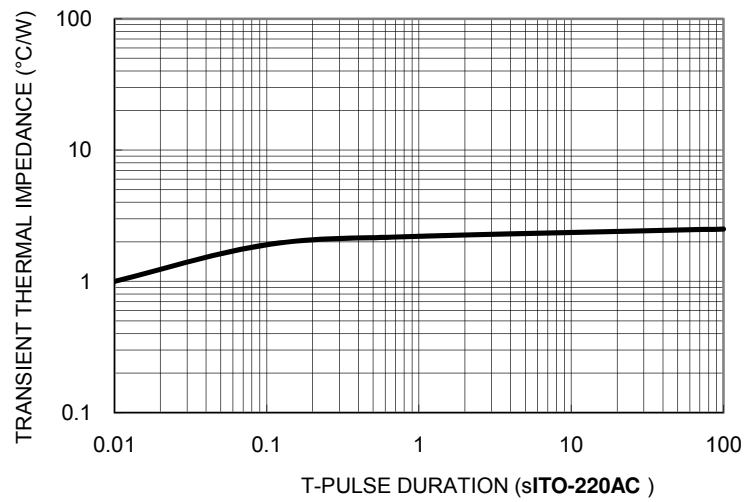
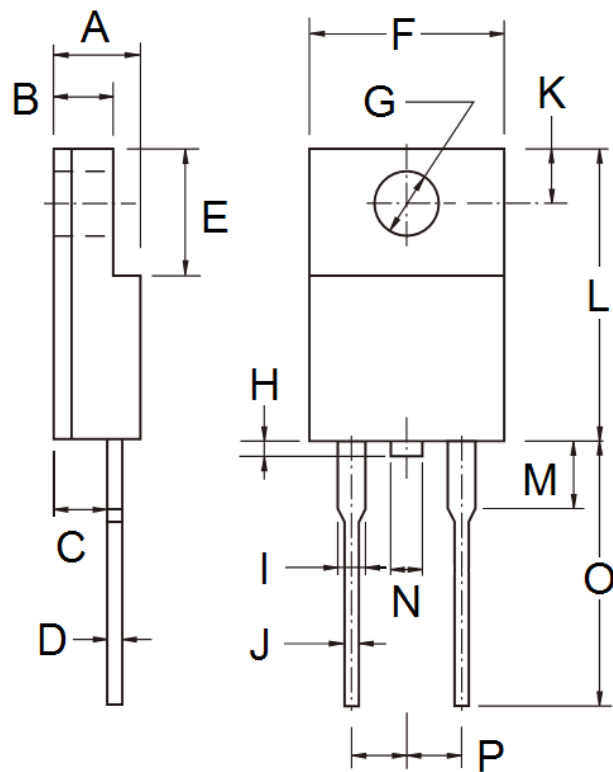


FIG. 6 TYPICAL TRANSIENT THERMAL CHARACTERISTICS

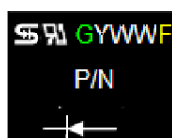


PACKAGE OUTLINE DIMENSIONS ITO-220AC



| 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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