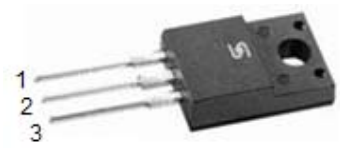
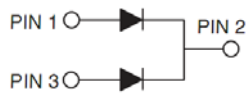
# Dual Common Cathode Schottky Rectifier

## 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




**ITO-220AB**




Pb-Free

RoHS COMPLIANT

## MECHANICAL DATA

**Case:** ITO-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:** 1.7 g (approximately)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ($T_A$=25℃ unless otherwise noted)

| PARAMETER | SYMBOL | MBRF 3035 CT | MBRF 3045 CT | MBRF 3050 CT | MBRF 3060 CT | MBRF 3090 CT | MBRF 30100 CT | MBRF 30150 CT | MBRF 30200 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 | $I_{F(AV)}$ | 30 | | | | | | | | A |
| Peak repetitive forward current (Rated VR, Square wave, 20KHz) | $I_{FRM}$ | 30 | | | | | | | | A |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$ | 200 | | | | | | | | A |
| Peak repetitive reverse surge current (Note 1) | $I_{RRM}$ | 1 | | | 0.5 | | | | | A |
| Maximum instantaneous forward voltage (Note 2)<br>$I_F$=15A, $T_J$=25℃<br>$I_F$=15A, $T_J$=125℃<br>$I_F$=30A, $T_J$=25℃<br>$I_F$=30A, $T_J$=125℃ | $V_F$ | <br>0.70<br>0.60<br>0.82<br>0.73 | | 0.75<br>0.65<br>0.90<br>0.78 | | 0.84<br>0.70<br>0.94<br>0.82 | | 0.95<br>0.80<br>1.05<br>0.92 | | V |
| Maximum reverse current @ rated VR $T_J$=25 ℃ | $I_R$ | 0.2 | | | | | | | | mA |
| $T_J$=125 ℃ | | 20 | | 15 | | 10 | | | | |
| Voltage rate of change (Rated $V_R$) | dV/dt | 10000 | | | | | | | | V/μs |
| Typical thermal resistance | $R_{\theta JC}$ | 4 | | | | | | | | $^{O}$C/W |
| Operating junction temperature range | $T_J$ | - 55 to +150 | | | | | | | | $^{O}$C |
| Storage temperature range | $T_{STG}$ | - 55 to +150 | | | | | | | | $^{O}$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 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | PACKAGE | PACKING |
|---|---|---|---|---|---|
| MBRF30xxCT (Note 1) | Prefix "H" | C0 | Suffix "G" | ITO-220AB | 50 / Tube |

Note 1: "xx" defines voltage from 35V (MBRF3035CT) to 200V (MBRF30200CT)

## EXAMPLE

| PREFERRED P/N | PART NO. | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION |
|---|---|---|---|---|---|
| MBRF3060CT C0 | MBRF3060CT | | C0 | | |
| MBRF3060CT C0G | MBRF3060CT | | C0 | G | Green compound |
| MBRF3060CTHC0 | MBRF3060CT | H | C0 | | AEC-Q101 qualified |

## RATINGS AND CHARACTERISTICS CURVES

(TA=25℃ unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

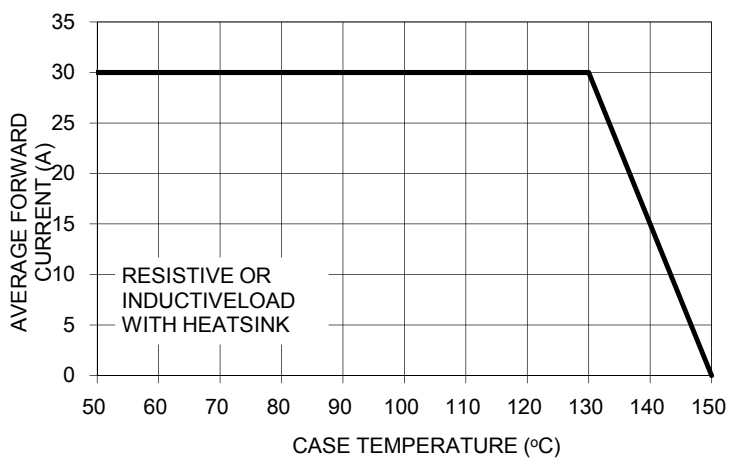



FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

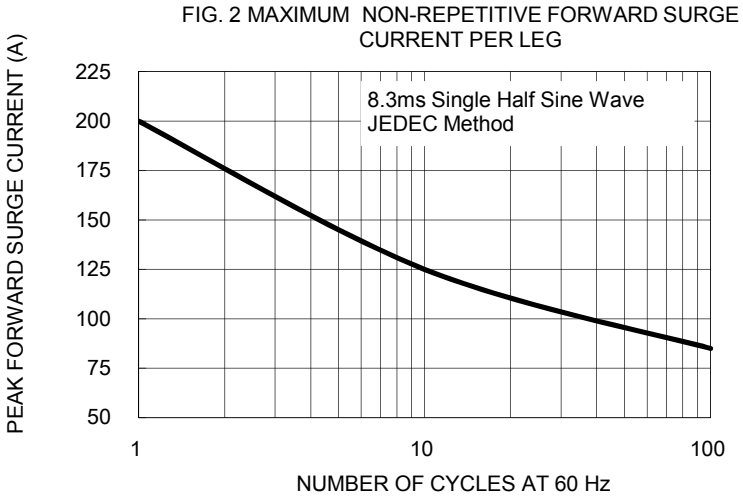



FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

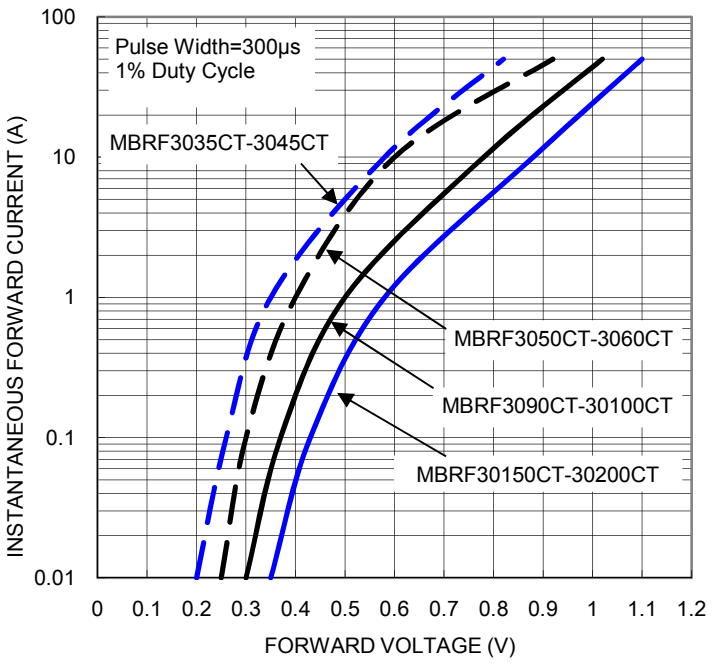



FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

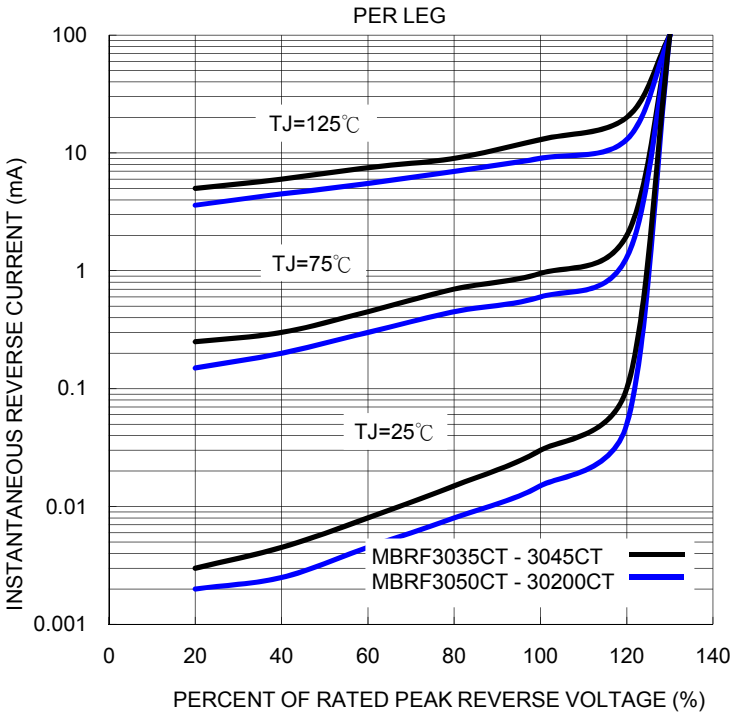


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

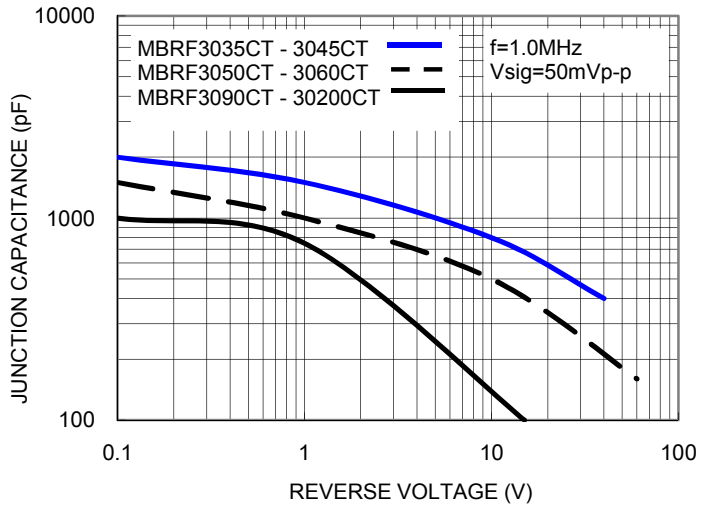
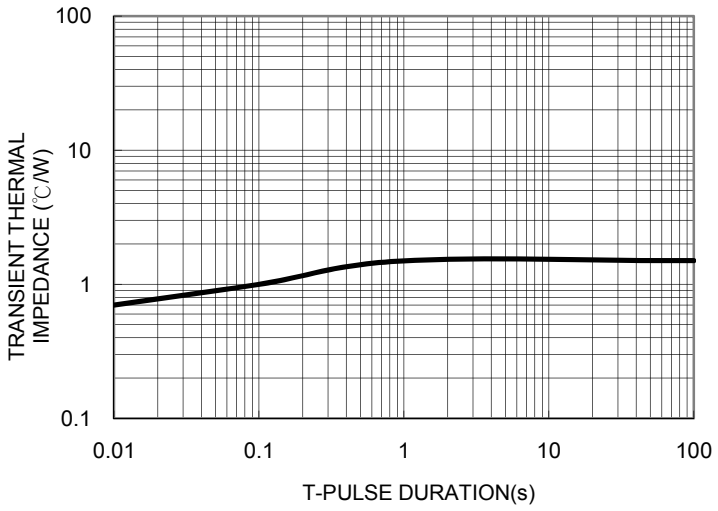
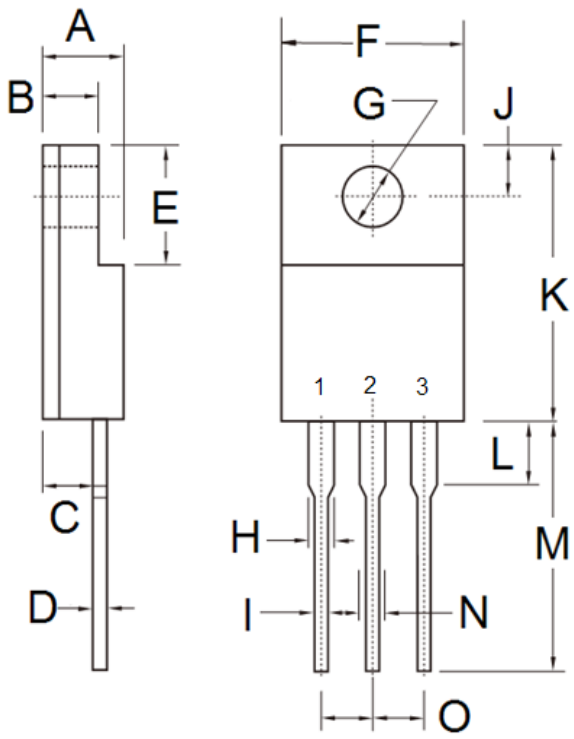



FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG




## PACKAGE OUTLINE DIMENSIONS




| DIM. | Unit (mm) | | Unit (inch) | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 4.30 | 4.70 | 0.169 | 0.185 |
| B | 2.50 | 3.16 | 0.098 | 0.124 |
| C | 2.30 | 2.96 | 0.091 | 0.117 |
| 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 | 0.95 | 1.45 | 0.037 | 0.057 |
| I | 0.50 | 0.90 | 0.020 | 0.035 |
| J | 2.40 | 3.20 | 0.094 | 0.126 |
| K | 14.80 | 15.50 | 0.583 | 0.610 |
| L | - | 4.10 | - | 0.161 |
| M | 12.60 | 13.80 | 0.496 | 0.543 |
| N | - | 1.80 | - | 0.071 |
| O | 2.41 | 2.67 | 0.095 | 0.105 |

## MARKING DIAGRAM

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

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