

■ APPLICATIONS

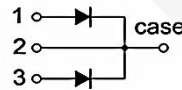
The MBR3045CT meet the ROHS and Green Product requirement with full function reliability approved.

■ FEATURE

- * Low Power Loss,High Efficiency
- *Guard Ring Die Construction for Transient Protection
- * High Current Capability and Low Forward Voltage Drop



- 1. ANODE
- 2. CATHODE
- 3. ANODE



■ ABSOLUTE MAXIMUM RATINGS(TA=25°C, unless otherwise specified.)

| SYMBOL | PARAMETER | VALUE | UNIT |
|----------------|--|----------|------|
| V_{RRM} | Peak repetitive reverse voltage | 45 | V |
| V_{RWM} | Working peak reverse voltage | | |
| V_R | DC blocking voltage | | |
| $V_{R(RMS)}$ | RMS reverse voltage | 31.5 | V |
| I_o | Average rectified output current | 30(15*2) | A |
| I_{FSM} | Non-Repetitive peak forward surge current (8.3ms half sine wave) | 200*2 | A |
| $R_{\theta J}$ | Thermal resistance from junction to case , Tc=25°C | 3.0 | °C/W |
| $R_{\theta J}$ | Thermal resistance from junction to ambient | 62.5 | °C/W |
| T_j | Junction temperature | 150 | °C |
| T_{stg} | Storage temperature | -55~+150 | °C |

Notes: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

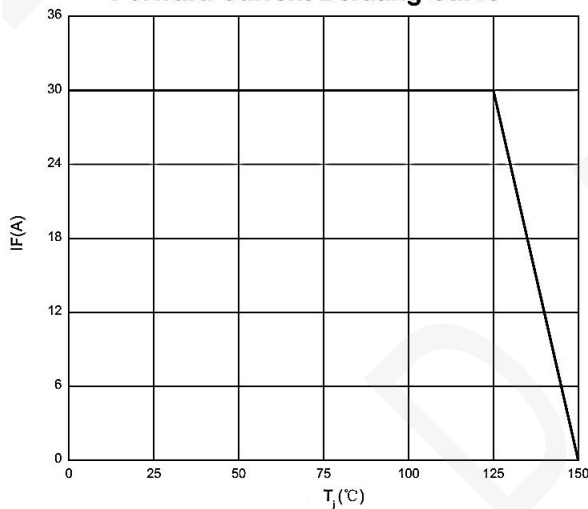
■ ELECTRICAL CHARACTERISTICS (TA=25°C, unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|-----------------|------------|--------------------|---------------------------|-------|------|---------------|
| Reverse voltage | $V_{(BR)}$ | $I_R = \text{mA}$ | 45 | | | V |
| Reverse current | I_R | $V_R = 45\text{V}$ | $T_j = 25^\circ\text{C}$ | 40 | 150 | μA |
| | | | $T_j = 125^\circ\text{C}$ | 23 | | mA |
| Forward voltage | V_F | $I_F = 10\text{A}$ | $T_j = 25^\circ\text{C}$ | 0.556 | 0.58 | V |
| | | | $T_j = 125^\circ\text{C}$ | 0.37 | | V |
| | | $I_F = 15\text{A}$ | $T_j = 25^\circ\text{C}$ | 0.48 | 0.55 | V |
| | | | $T_j = 125^\circ\text{C}$ | 0.44 | | V |

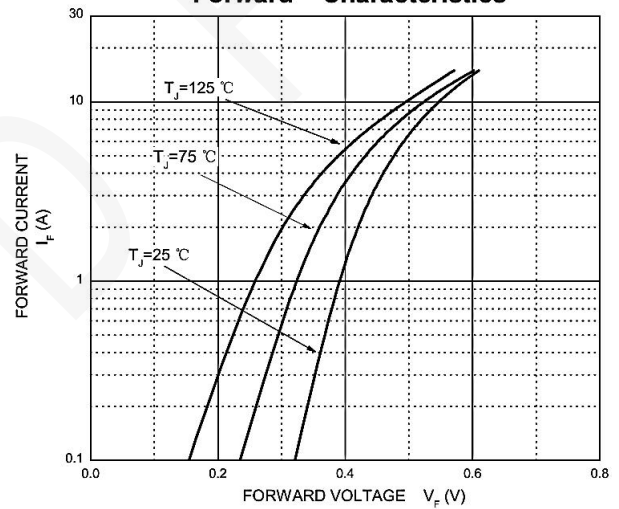
Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2.0\%$.

■ TYPICAL CHARACTERISTICS

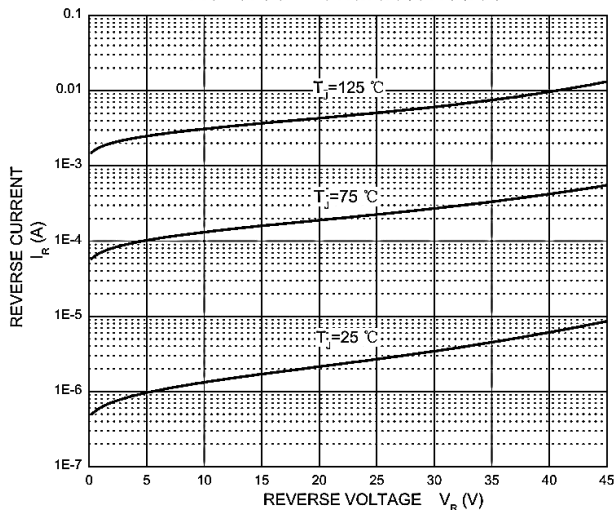
Forward Current Derating Curve



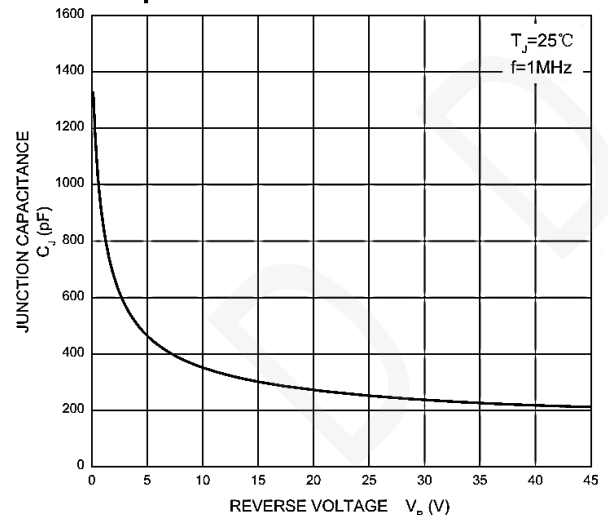
Forward Characteristics



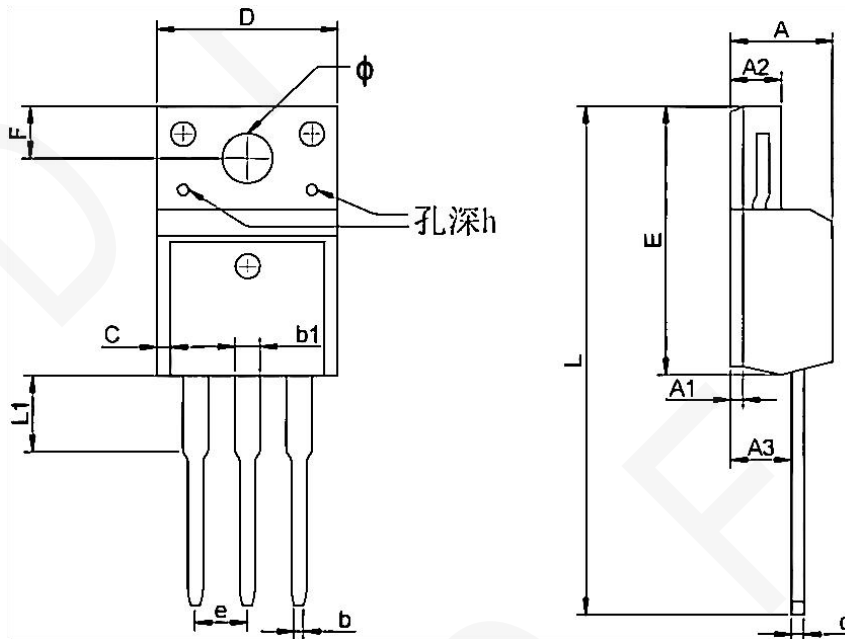
Reverse Characteristics



Capacitance Characteristics Per Diode



TO-220F PACKAGE OUTLINE DIMENSIONS



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|--------|----------------------|-------|
| | Min. | Max | Min | Max |
| A | 4.300 | 4.750 | 0.169 | 0.185 |
| A1 | 1.830 REF | | 0.072 REF | |
| A2 | 2.300 | 2.850 | 0.090 | 0.112 |
| A3 | 2.500 | 2.900 | 0.098 | 0.114 |
| b | 0.400 | 0.420 | 0.016 | 0.016 |
| b1 | 1.220 | 1.280 | 0.048 | 0.050 |
| C | 0.690 | 0.720 | 0.027 | 0.028 |
| c | 0.490 | 0.510 | 0.019 | 0.020 |
| D | 9.960 | 10.200 | 0.392 | 0.400 |
| E | 15.000 | 15.950 | 0.588 | 0.625 |
| e | 2.574 TYP | | 0.101 TYP | |
| F | 3.470 REF | | 0.136 REF | |
| y | 3.200 REF | | 0.125 REF | |
| h | 0.000 | 0.300 | 0.000 | 0.012 |
| L | 28.780 | 28.900 | 1.128 | 1.133 |
| L1 | 2.990 | 3.100 | 0.117 | 0.122 |