# 30A, 80V Schottky Barrier Rectifier

## FEATURES

- AEC-Q101 qualified available
- Low power loss, high efficiency
- Guard ring for overvoltage protection
- High surge current capability
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

## APPLICATIONS

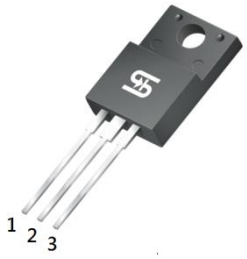
- Switching mode power supply (SMPS)
- Adapters
- DC to DC converters

## MECHANICAL DATA

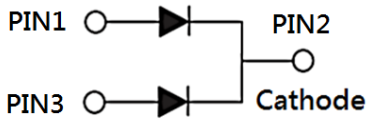
- Case: ITO-220AB
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.70g (approximately)

| KEY PARAMETERS | | |
|---|---|---|
| **PARAMETER** | **VALUE** | **UNIT** |
| $I_F$ | 30 | A |
| $V_{RRM}$ | 80 | V |
| $I_{FSM}$ | 200 | A |
| $T_{J\ MAX}$ | 150 | °C |
| Package | ITO-220AB | |
| Configuration | Dual dies | |

Pb-Free RoHS COMPLIANT HALOGEN FREE




**ITO-220AB**




| **ABSOLUTE MAXIMUM RATINGS** ($T_A$ = 25°C unless otherwise noted) | | | |
|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **MBRF3080CT** | **UNIT** |
| Marking code on the device | | MBRF3080CT | |
| Repetitive peak reverse voltage | $V_{RRM}$ | 80 | V |
| Reverse voltage, total rms value | $V_{R(RMS)}$ | 56 | V |
| Forward current | $I_F$ | 30 | A |
| Surge peak forward current, 8.3ms single half sine wave superimposed on rated load | $I_{FSM}$ | 200 | A |
| Peak repetitive reverse surge current(1) | $I_{RRM}$ | 0.5 | A |
| Critical rate of rise of off-state voltage | dv/dt | 10,000 | V/μs |
| Junction temperature | $T_J$ | -55 to +150 | °C |
| Storage temperature | $T_{STG}$ | -55 to +150 | °C |

**Notes:**
1. tp = 2.0μs, 1.0KHz

## THERMAL PERFORMANCE

| PARAMETER | SYMBOL | TYP | UNIT |
|---|---|---|---|
| Junction-to-case thermal resistance | $R_{\Theta JC}$ | 5 | °C/W |

## ELECTRICAL SPECIFICATIONS ($T_A$ = 25°C unless otherwise noted)

| PARAMETER | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
|---|---|---|---|---|---|
| Forward voltage per diode[1] | $I_F$ = 15A,$T_J$ = 25°C | $V_F$ | - | 0.84 | V |
| | $I_F$ = 30A,$T_J$ = 25°C | | - | 0.94 | V |
| | $I_F$ = 15A,$T_J$ = 125°C | | - | 0.70 | V |
| | $I_F$ = 30A,$T_J$ = 125°C | | - | 0.82 | V |
| Reverse current @ rated $V_R$ per diode[2] | $T_J$ = 25°C | $I_R$ | - | 200 | μA |
| | $T_J$ = 125°C | | - | 10 | mA |

**Notes:**

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

## ORDERING INFORMATION

| ORDERING CODE[1] | PACKAGE | PACKING |
|---|---|---|
| MBRF3080CT | ITO-220AB | 50 / Tube |
| MBRF3080CTH | ITO-220AB | 50 / Tube |

**Notes:**

1. "H" means AEC-Q101 qualified

## CHARACTERISTICS CURVES

($T_A$ = 25°C unless otherwise noted)

**Fig.1 Forward Current Derating Curve**

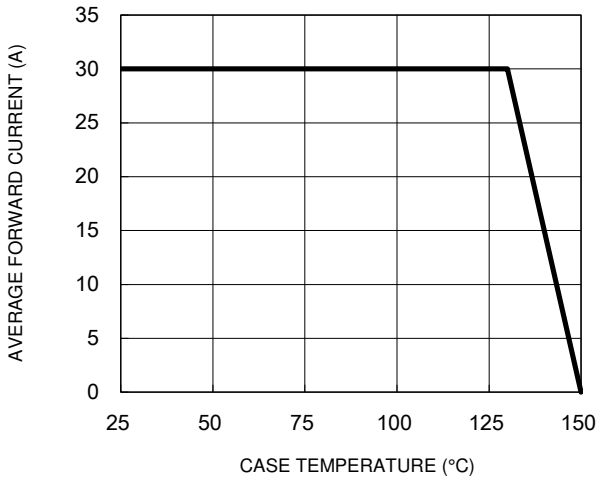



**Fig.2 Typical Junction Capacitance**

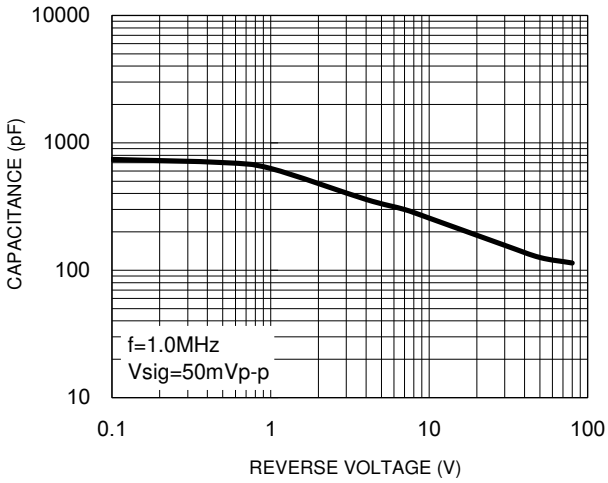



**Fig.3 Typical Reverse Characteristics**

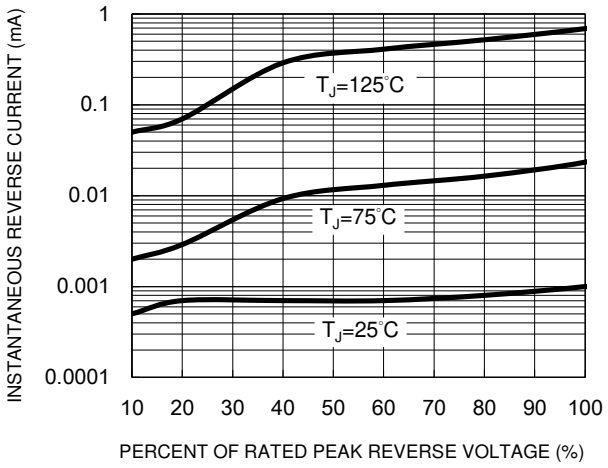



**Fig.4 Typical Forward Characteristics**

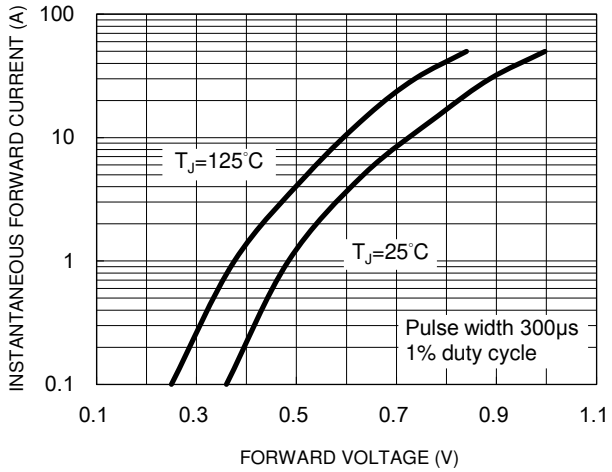
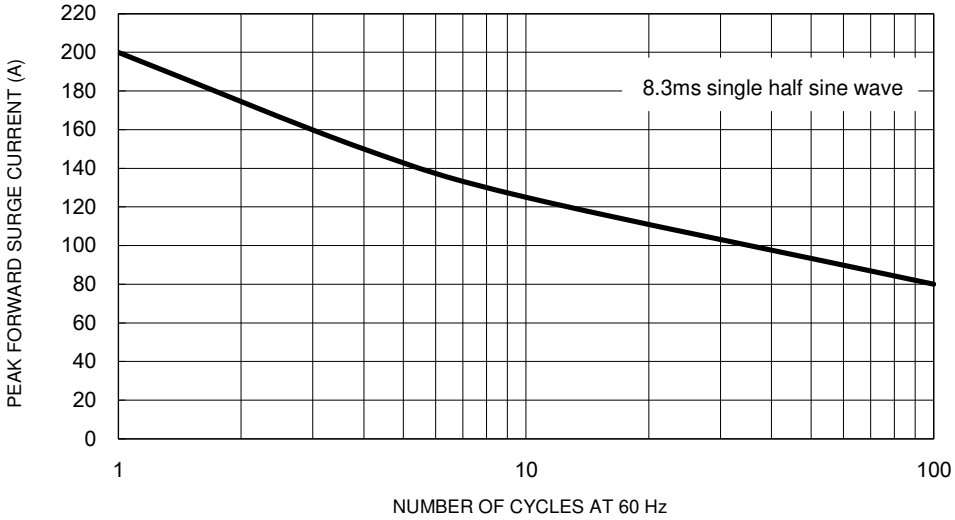


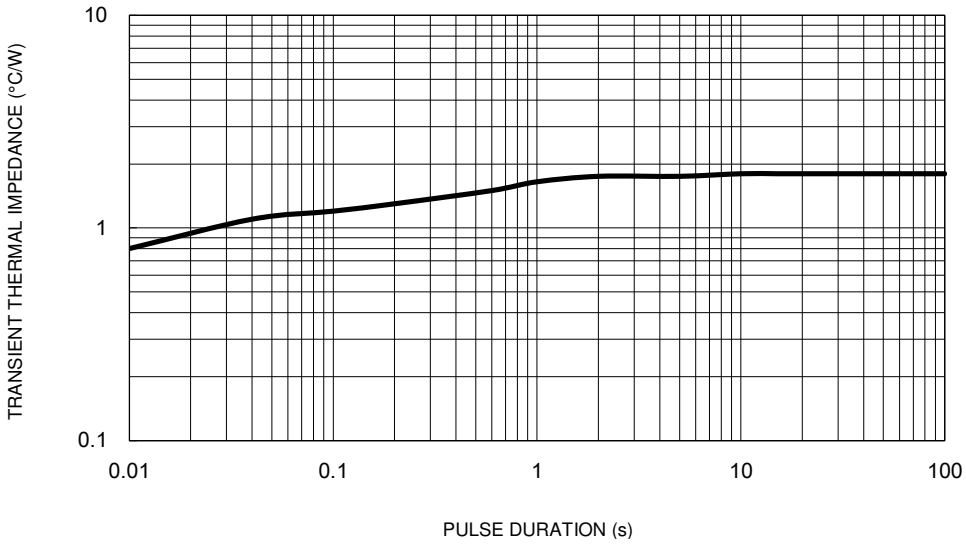

**Fig.5 Maximum Non-Repetitive Forward Surge Current**



## CHARACTERISTICS CURVES

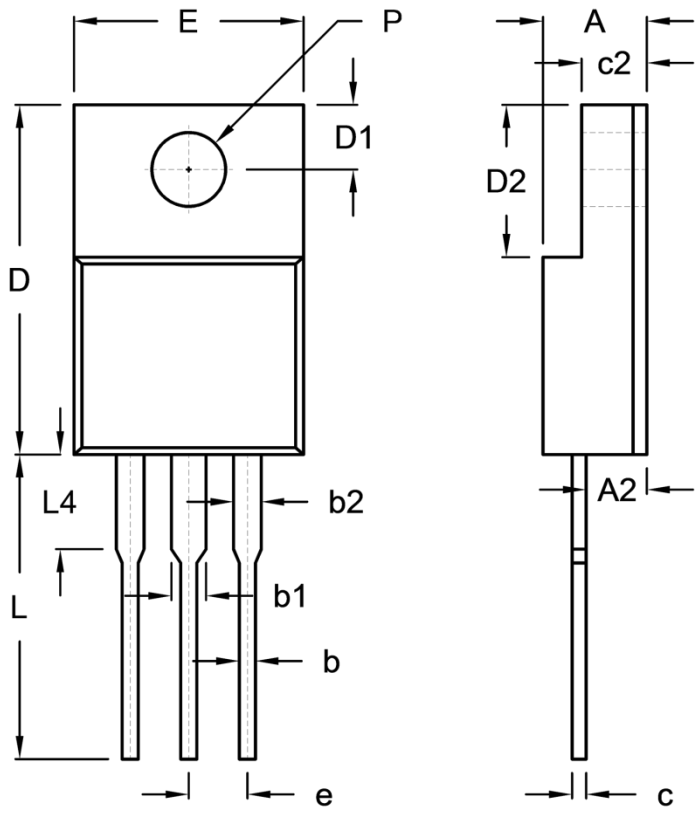
($T_A$ = 25°C unless otherwise noted)

**Fig.6 Typical Transient Thermal Impedance**



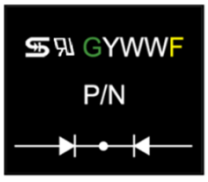
## PACKAGE OUTLINE DIMENSIONS

ITO-220AB




| DIM. | Unit (mm) | | Unit (inch) | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 4.30 | 4.70 | 0.169 | 0.185 |
| A2 | 2.30 | 2.96 | 0.091 | 0.117 |
| b | 0.50 | 0.90 | 0.020 | 0.035 |
| b1 | - | 1.80 | - | 0.071 |
| b2 | 0.95 | 1.45 | 0.037 | 0.057 |
| c | 0.46 | 0.76 | 0.018 | 0.030 |
| c2 | 2.50 | 3.16 | 0.098 | 0.124 |
| D | 14.80 | 15.50 | 0.583 | 0.610 |
| D1 | 2.40 | 3.20 | 0.094 | 0.126 |
| D2 | 6.30 | 6.90 | 0.248 | 0.272 |
| E | 9.60 | 10.30 | 0.378 | 0.406 |
| e | 2.41 | 2.67 | 0.095 | 0.105 |
| L | 12.60 | 13.80 | 0.496 | 0.543 |
| L4 | - | 4.10 | - | 0.161 |
| P | 3.00 | 3.40 | 0.118 | 0.134 |

## MARKING DIAGRAM




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

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