

30A LOW VF SCHOTTKY BARRIER RECTIFIER



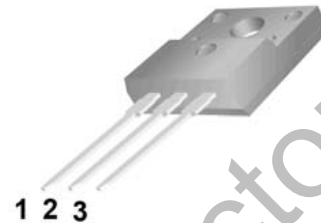
MBRF30100VCT

Features:

- Low power loss, high efficiency.
- High surge capacity.
- High frequency operation.
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.
- Metal silicon junction, majority carrier conduction.
- High current Capability, low forward voltage drop.
- Guard ring for over voltage protection.

RoHS
COMPLIANT

TO-220F
(ITO-220AB)



1. Anode 2. Cathode 3. Anode

Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|----------------|-------------|------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 100 | V |
| Maximum average forward rectified current | Per leg | 15 | A |
| | Total device | 30 | |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL) | I_{FSM} | 250 | A |
| Operating junction and Storage temperature range | T_J, T_{stg} | -55 to +150 | °C |

Electrical Characteristics (Ta=25°C Unless otherwise noted)

| Parameter | Test Conditions | Symbol | TYP. | MAX. | Unit | |
|---|-----------------|------------|-------------------|------|------|---------|
| Instantaneous forward voltage (Per leg) | IF=3.0A | $V_F^{1)}$ | 0.45 | - | V | |
| | IF=5.0A | | 0.49 | - | | |
| | IF=10.0A | | 0.58 | - | | |
| | IF=15.0A | | 0.68 | 0.72 | | |
| Reverse Current | VR=100V | $I_R^{2)}$ | $T_A=25^\circ C$ | 20 | 50 | μA |
| | | | $T_A=125^\circ C$ | 8 | - | mA |

Notes: 1.Pulse test: 300 μs pulse width,1% duty cycle
2.Pulse test: pulse width $\leq 40ms$

Thermal Characteristics

| Parameter | Symbol | Value | Unit |
|--|-----------------|-------|------|
| Typical thermal resistance ³⁾ | $R_{\theta JC}$ | 4.5 | °C/W |

3.Thermal resistance from junction to case

RATING AND CHARACTERISTIC CURVES

FIG. 1- FORWARD CURRENT DERATING CURVE

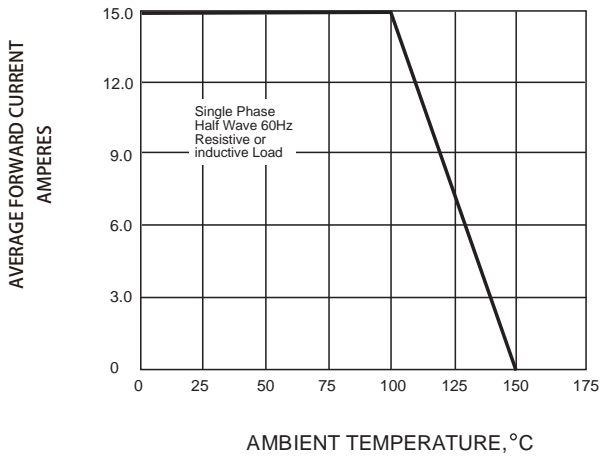


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

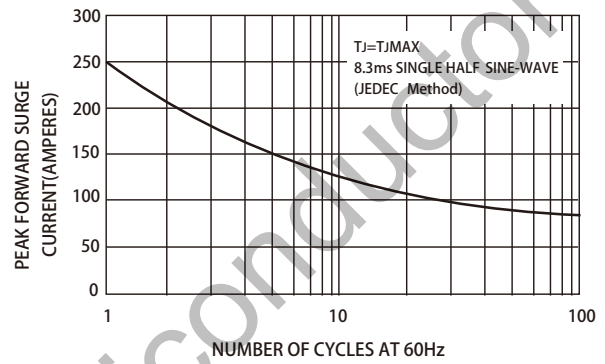


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

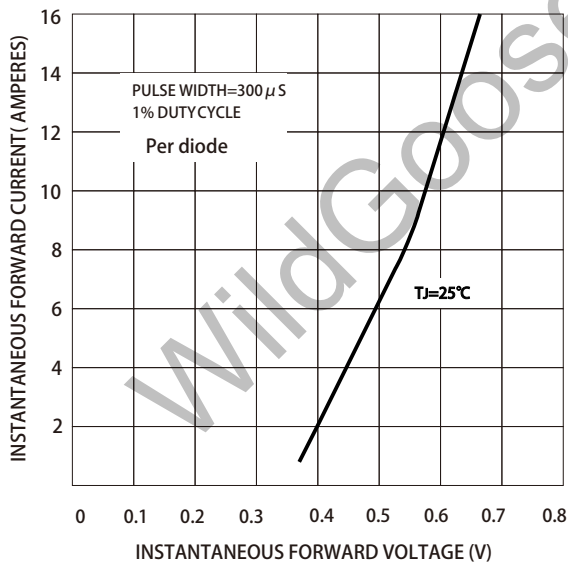
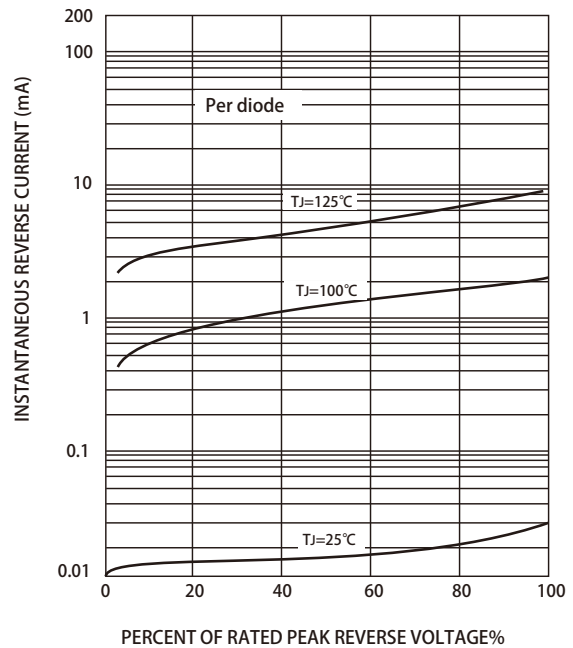
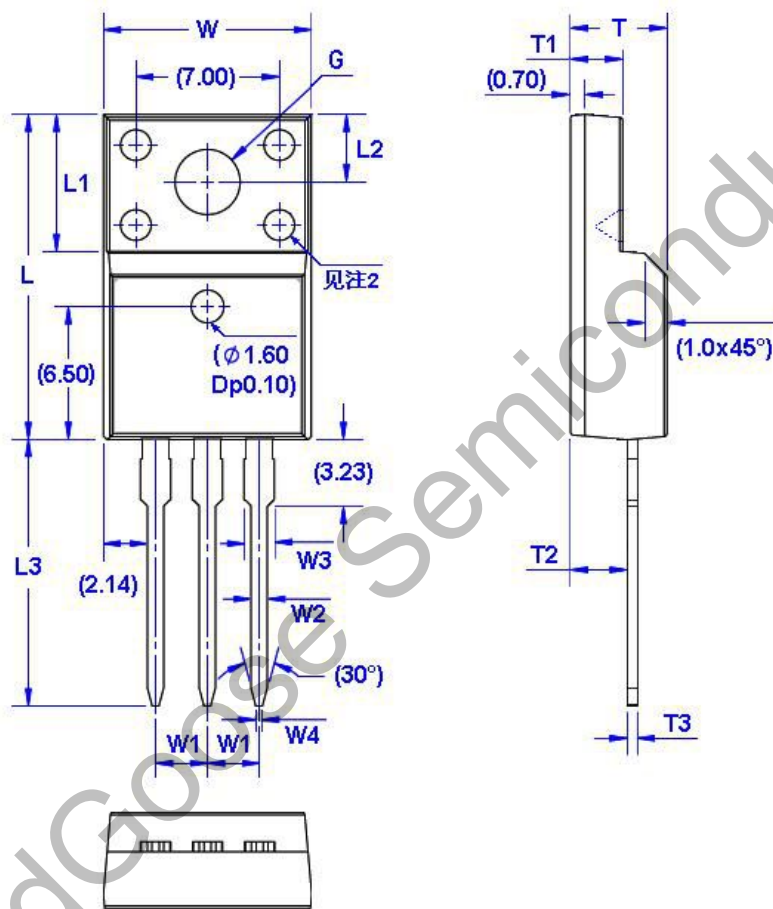


FIG. 4-TYPICAL REVERSE CHARACTERISTICS



Package Dimension

**TO-220F
(ITO-220AB)**



| Symbol | Size | | Symbol | Size | | Symbol | Size | | Symbol | Size | |
|--------|------------|-------|--------|-------|-------|--------|-------|-------|--------|------|------|
| | Min | Max | | Min | Max | | Min | Max | | Min | Max |
| W | 9.96 | 10.36 | W4 | 0.25 | 0.45 | L3 | 12.78 | 13.18 | T3 | 0.45 | 0.60 |
| W1 | 2.54 (TYP) | | L | 15.67 | 16.07 | T | 4.50 | 4.90 | G(Φ) | 3.08 | 3.28 |
| W2 | 0.70 | 0.90 | L1 | 6.48 | 6.88 | T1 | 2.34 | 2.74 | | | |
| W3 | 1.24 | 1.47 | L2 | 3.20 | 3.40 | T2 | 2.56 | 2.96 | | | |

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