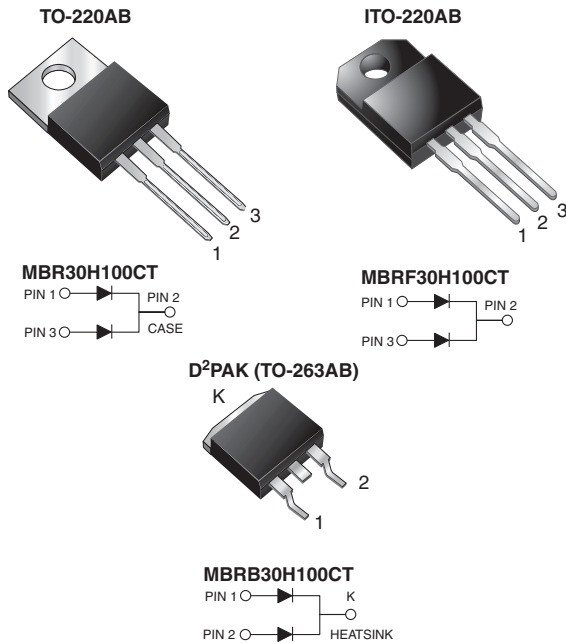




Dual Common Cathode High Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



FEATURES

- Power pack
- Guardring for overvoltage protection
- Low power loss, high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AB and ITO-220AB package)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters, and polarity protection application.

MECHANICAL DATA

Case: TO-220AB, ITO-220AB, D²PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

DESIGN SUPPORT TOOLS

[click logo to get started](#)



| PRIMARY CHARACTERISTICS | |
|-------------------------|--|
| $I_{F(AV)}$ | 2 x 15 A |
| V_{RRM} | 100 V |
| I_{FSM} | 275 A |
| V_F | 0.67 V |
| I_R | 5.0 μ A |
| T_J max. | 175 °C |
| Package | TO-220AC, ITO-220AC, D ² PAK (TO-263AB) |
| Circuit configuration | Dual common cathode |

| MAXIMUM RATINGS ($T_C = 25$ °C unless otherwise noted) | | | |
|--|----------------|-------------|------------|
| PARAMETER | SYMBOL | MBR30H100CT | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 100 | V |
| Working peak reverse voltage | V_{RWM} | 100 | |
| Maximum DC blocking voltage | V_{DC} | 100 | |
| Maximum average forward rectified current (fig.1) | total device | 30 | A |
| | per diode | 15 | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | I_{FSM} | 275 | |
| Peak repetitive reverse surge current per diode at $t_p = 2.0$ μ s, 1 kHz | I_{RRM} | 1.0 | |
| Voltage rate of change (rated V_R) | dV/dt | 10 000 | V/ μ s |
| Operating junction and storage temperature range | T_J, T_{STG} | -65 to +175 | °C |
| Isolation voltage (ITO-220AB only) from terminal to heatsink $t = 1$ min | V_{AC} | 1500 | V |



| ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | |
|--|-----------|---------------------|-----------------------------------|-------|---------------|
| PARAMETER | SYMBOL | TEST CONDITIONS | | VALUE | UNIT |
| Maximum instantaneous forward voltage per diode | V_F (1) | $I_F = 15\text{ A}$ | $T_J = 25\text{ }^\circ\text{C}$ | 0.82 | V |
| | | $I_F = 15\text{ A}$ | $T_J = 125\text{ }^\circ\text{C}$ | 0.67 | |
| | | $I_F = 30\text{ A}$ | $T_J = 25\text{ }^\circ\text{C}$ | 0.93 | |
| | | $I_F = 30\text{ A}$ | $T_J = 125\text{ }^\circ\text{C}$ | 0.80 | |
| Maximum reverse current per diode | I_R (2) | Rated V_R | $T_J = 25\text{ }^\circ\text{C}$ | 5.0 | μA |
| | | | $T_J = 125\text{ }^\circ\text{C}$ | 6.0 | mA |

Note

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width, $\leq 40\text{ ms}$

| THERMAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | |
|---|-----------------|-----|------|------|--------------------|
| PARAMETER | SYMBOL | MBR | MBRF | MBRB | UNIT |
| Typical thermal resistance per diode | $R_{\theta JC}$ | 1.9 | 4.6 | 1.9 | $^\circ\text{C/W}$ |

| ORDERING INFORMATION (Example) | | | | | |
|---------------------------------------|--------------------|-----------------|--------------|---------------|---------------|
| PACKAGE | PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| TO-220AB | MBR30H100CT-E3/45 | 1.85 | 45 | 50/tube | Tube |
| ITO-220AB | MBRF30H100CT-E3/45 | 1.99 | 45 | 50/tube | Tube |
| TO-263AB | MBRB30H100CT-E3/45 | 1.35 | 45 | 50/tube | Tube |
| TO-263AB | MBRB30H100CT-E3/81 | 1.35 | 81 | 800/reel | Tape and reel |



RATINGS AND CHARACTERISTICS CURVES ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)

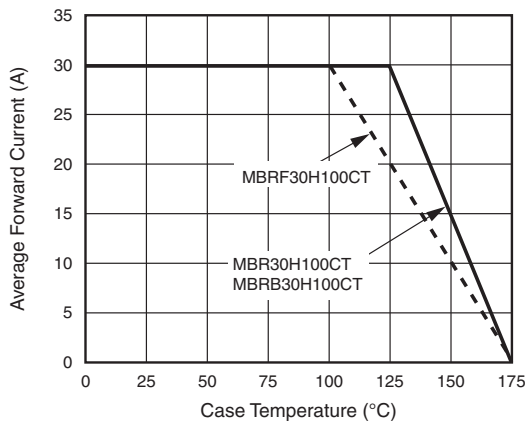


Fig. 1 - Forward Derating Curve Per Diode

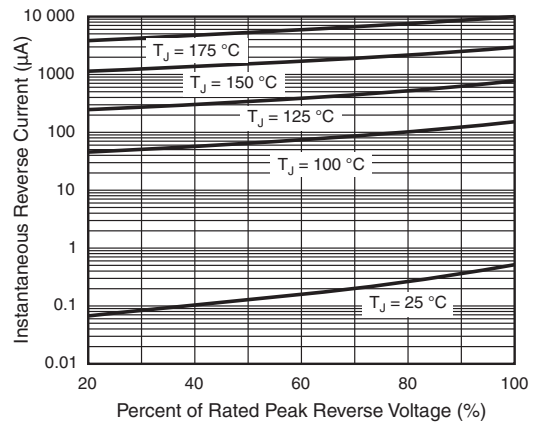


Fig. 4 - Typical Reverse Characteristics Per Diode

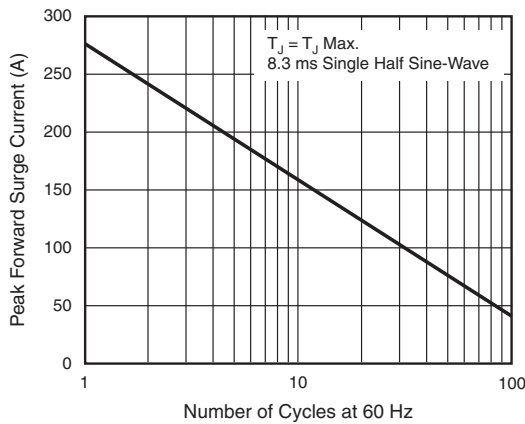


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

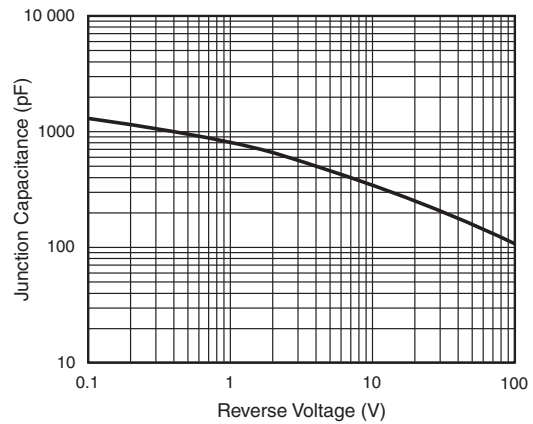


Fig. 5 - Typical Junction Capacitance Per Diode

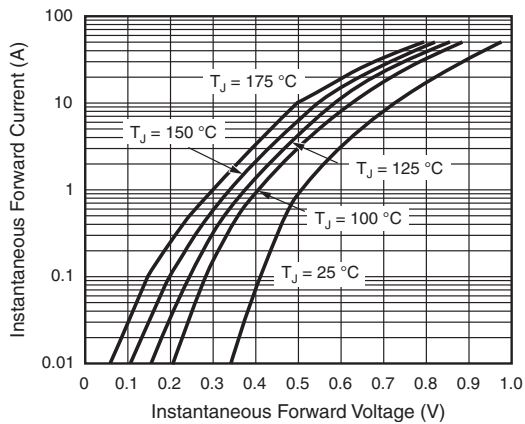


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

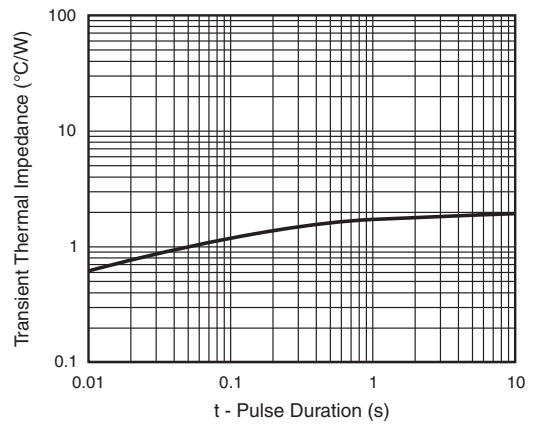
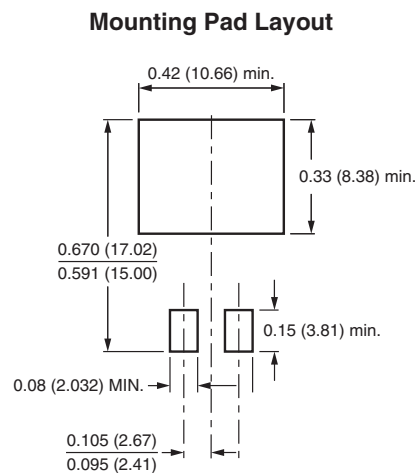
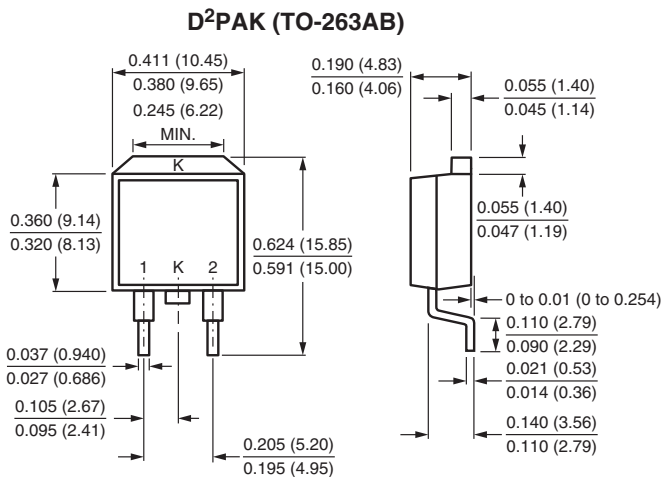
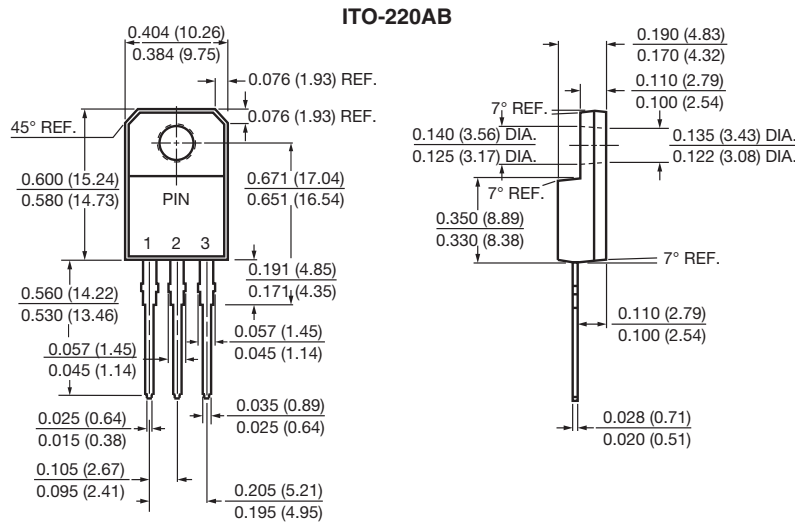
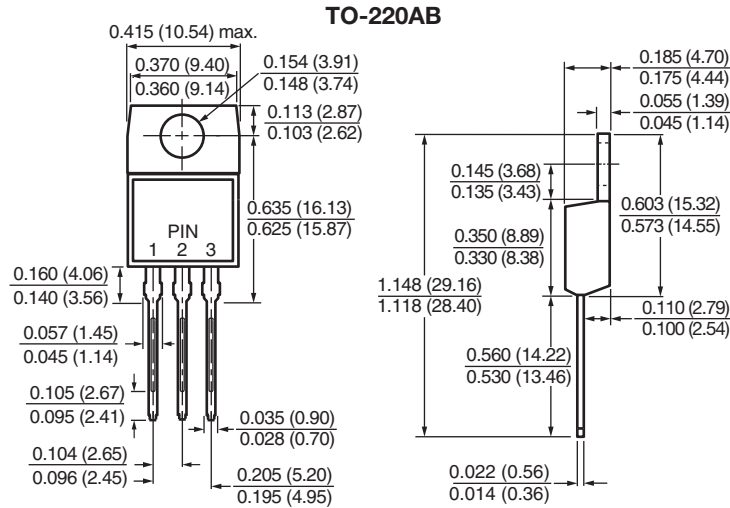


Fig. 6 - Typical Transient Thermal Impedance Per Diode



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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