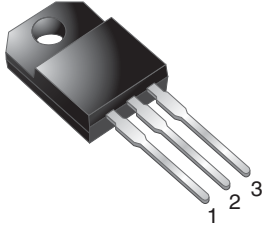
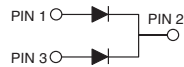
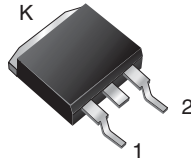
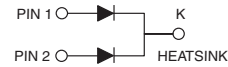


Dual Common Cathode Schottky Rectifier

ITO-220AB

MBRF15xxCT

D²PAK (TO-263AB)

MBRB15xxCT


FEATURES

- Power pack
- Guardring for overvoltage protection
- Low power loss, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for D²PAK (TO-263AB)) package
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for ITO-220AB package)
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

DESIGN SUPPORT TOOLS

[click logo to get started](#)
3D
Models
Available

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: ITO-220AB, D²PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating
 Base P/N-E3 - RoHS-compliant, commercial grade
 Base P/NHE3_X - RoHS-compliant, AEC-Q101 qualified
 (“_X” denotes revision code, e.g. A, B,...)

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

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs maximum

| PRIMARY CHARACTERISTICS | |
|-------------------------|--|
| $I_{F(AV)}$ | 2 x 7.5 A |
| V_{RRM} | 45 V, 60 V |
| I_{FSM} | 150 A |
| V_F | 0.57 V, 0.65 V |
| T_J max. | 150 °C |
| Package | ITO-220AB, D ² PAK (TO-263AB) |
| Circuit configuration | Common cathode |

| MAXIMUM RATINGS ($T_C = 25\text{ °C}$ unless otherwise noted) | | | | |
|--|--------------|-------------|------------|------------------|
| PARAMETER | SYMBOL | MBRB1545CT | MBRB1560CT | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 45 | 60 | V |
| Working peak reverse voltage | V_{RWM} | 45 | 60 | |
| Maximum DC blocking voltage | V_{DC} | 45 | 60 | |
| Maximum average forward rectified current at $T_C = 105\text{ °C}$ | $I_{F(AV)}$ | 15 | | A |
| | total device | 7.5 | | |
| | per diode | 150 | | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | I_{FSM} | 150 | | A |
| Peak repetitive reverse surge current per diode at $t_p = 2.0\text{ }\mu\text{s}$, 1 kHz | I_{RRM} | 1.0 | 0.5 | |
| Voltage rate of change (rated V_R) | dV/dt | 10 000 | | V/ μs |
| Operating junction temperature range | T_J | -65 to +150 | | °C |
| Storage temperature range | T_{STG} | -65 to +175 | | |
| Isolation voltage (ITO-220AB only) from terminal to heatsink $t = 1\text{ min}$ | V_{AC} | 1500 | | V |



| ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | |
|--|-------------|----------------------|-----------------------------------|------------|------------|------|
| PARAMETER | SYMBOL | TEST CONDITIONS | | MBRB1545CT | MBRB1560CT | UNIT |
| Maximum instantaneous forward voltage per diode | $V_F^{(1)}$ | $I_F = 7.5\text{ A}$ | $T_C = 25\text{ }^\circ\text{C}$ | - | 0.75 | V |
| | | $I_F = 7.5\text{ A}$ | $T_C = 125\text{ }^\circ\text{C}$ | 0.57 | 0.65 | |
| | | $I_F = 15\text{ A}$ | $T_C = 25\text{ }^\circ\text{C}$ | 0.84 | - | |
| | | $I_F = 15\text{ A}$ | $T_C = 125\text{ }^\circ\text{C}$ | 0.72 | - | |
| Maximum instantaneous reverse current at DC blocking voltage per diode | $I_R^{(2)}$ | Rated V_R | $T_C = 25\text{ }^\circ\text{C}$ | 0.1 | 1.0 | mA |
| | | | $T_C = 125\text{ }^\circ\text{C}$ | 15 | 50 | |

Notes(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 | MBRF | MBRB | UNIT |
| Maximum thermal resistance per diode | $R_{\theta JA}$ | - | 60 | $^\circ\text{C/W}$ |
| | $R_{\theta JC}$ | 5.0 | 3.0 | |

| ORDERING INFORMATION (Example) | | | | | |
|---------------------------------------|----------------------------------|-----------------|--------------|---------------|---------------|
| PACKAGE | PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| ITO-220AB | MBRF1545CT-E3/45 | 1.99 | 45 | 50/tube | Tube |
| TO-263AB | MBRB1545CT-E3/45 | 1.35 | 45 | 50/tube | Tube |
| TO-263AB | MBRB1545CT-E3/81 | 1.35 | 81 | 800/reel | Tape and reel |
| ITO-220AB | MBRF1545CTHE3_A/P ⁽¹⁾ | 1.99 | P | 50/tube | Tube |
| TO-263AB | MBRB1545CTHE3_B/P ⁽¹⁾ | 1.35 | P | 50/tube | Tube |
| TO-263AB | MBRB1545CTHE3_B/I ⁽¹⁾ | 1.35 | I | 800/reel | Tape and reel |

Note

(1) AEC-Q101 qualified



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

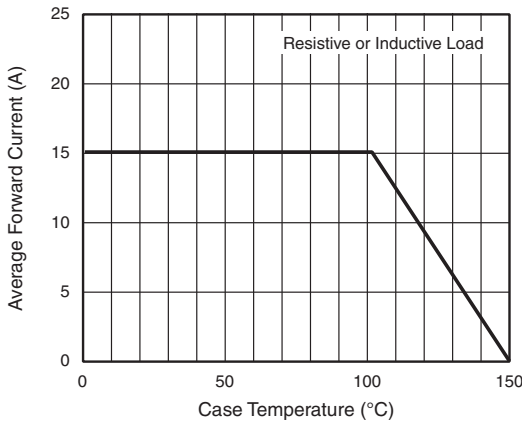


Fig. 1 - Forward Current Derating Curve

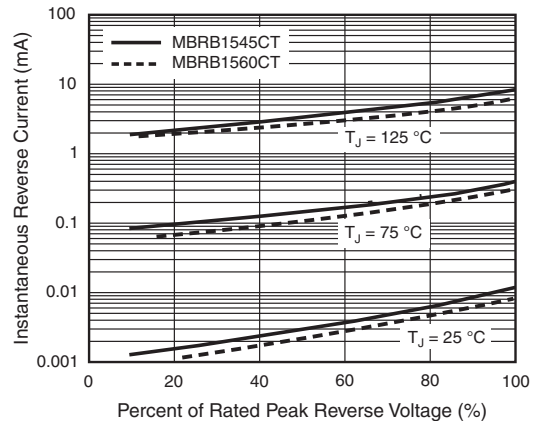


Fig. 4 - Typical Reverse Characteristics Per Diode

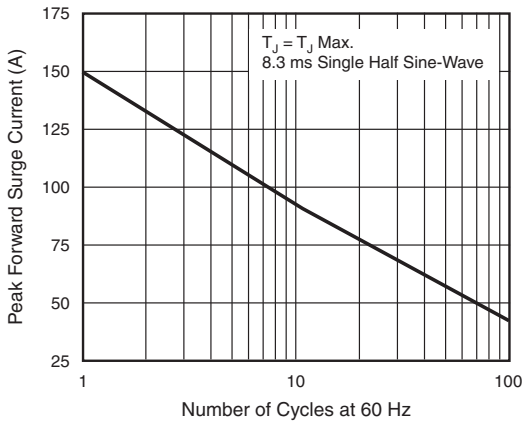


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

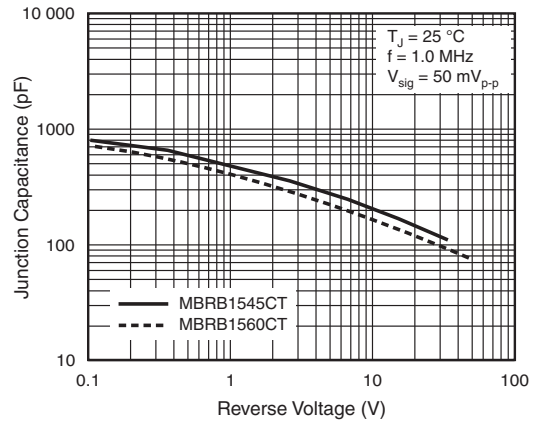


Fig. 5 - Typical Junction Capacitance Per Diode

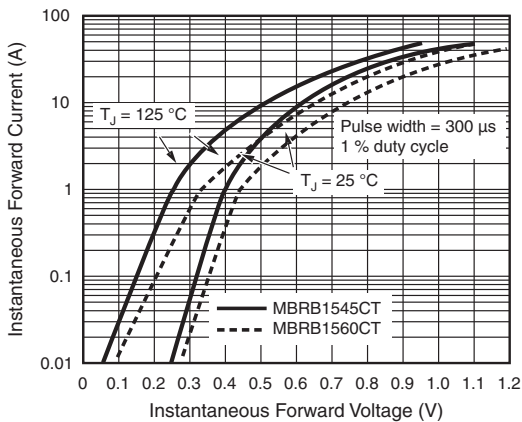


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

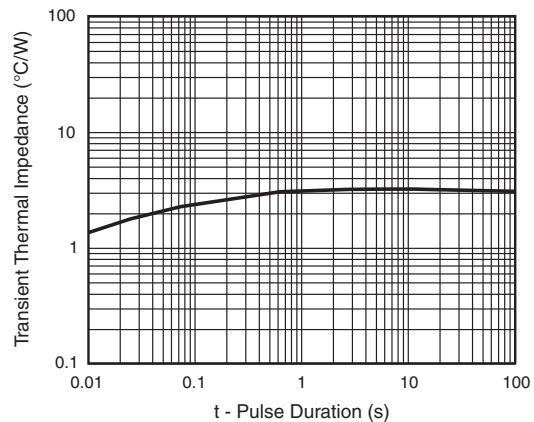
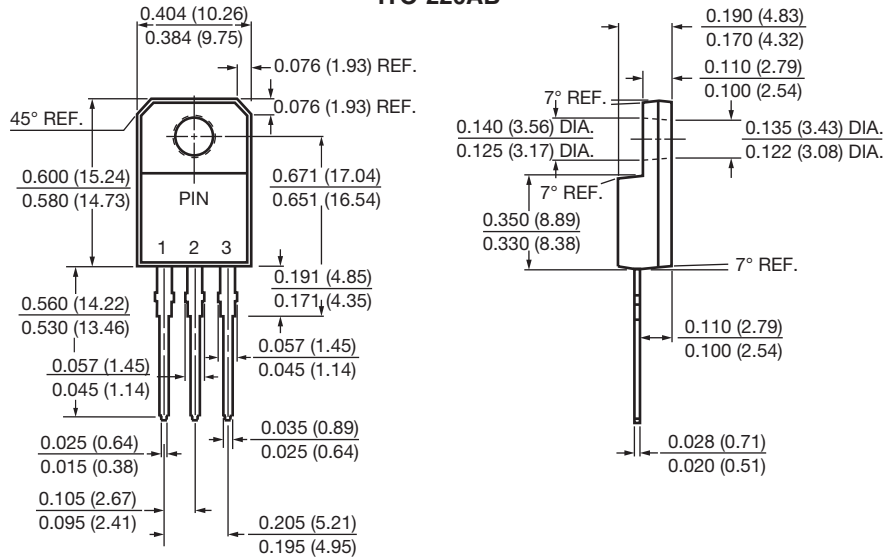


Fig. 6 - Typical Transient Thermal Impedance Per Diode

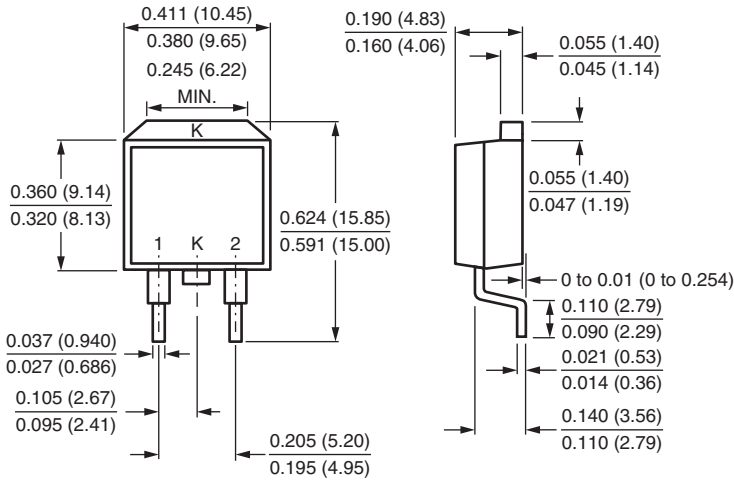


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

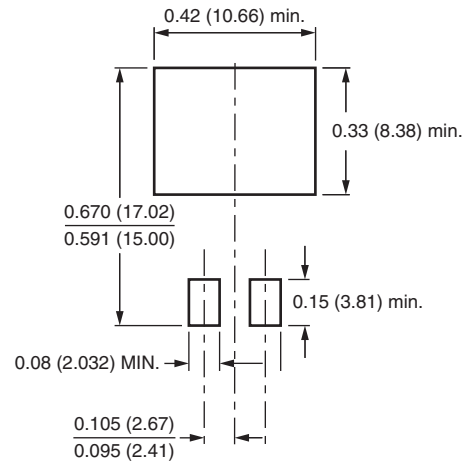
ITO-220AB



D²PAK (TO-263AB)



Mounting Pad Layout





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