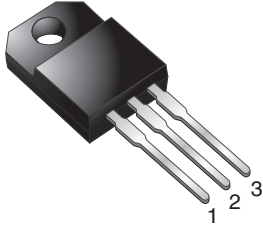
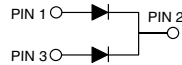
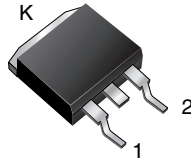
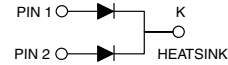




**THE DATASHEET OF
MBRB1560CTHE3_B/P**



Dual Common Cathode Schottky Rectifier

ITO-220AB

MBRF15xxCT

D²PAK (TO-263AB)

MBRB15xxCT


RoHS
COMPLIANT
HALOGEN
FREE
Available

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 available
 - Automotive ordering code:
 - Base P/NHE3 (for ITO-220AB)
 - Base P/NHM3 (for D²PAK (TO-263AB) package)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

LINKS TO ADDITIONAL RESOURCES



| 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 |
| $T_J \text{ max.}$ | 150 °C |
| Package | ITO-220AB, D ² PAK (TO-263AB) |
| Circuit configuration | Common cathode |

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,...)

Base P/N-M3 - RoHS-compliant, halogen-free, commercial grade

Base P/NHM3 - RoHS-compliant, halogen-free, AEC-Q101 qualified

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

E3 and M3 suffix meets JESD 201 class 1A whisker test, HE3 and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs maximum



| MAXIMUM RATINGS (T _C = 25 °C unless otherwise noted) | | | | |
|--|--------------------|--------------------------|--------------------------|------|
| PARAMETER | SYMBOL | MBRB1545CT MBRF1545CT | MBRB1560CT MBRF1560CT | 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 °C | I _{F(AV)} | total device | | A |
| | | per diode | | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | I _{FSM} | 15 | | |
| | | 7.5 | | |
| Peak repetitive reverse surge current per diode at t _p = 2.0 μs, 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 min | V _{AC} | 1500 | | V |

| ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted) | | | | | | |
|--|-------------------------------|------------------------|-------------------------|--------------------------|--------------------------|------|
| PARAMETER | SYMBOL | TEST CONDITIONS | | MBRB1545CT MBRF1545CT | MBRB1560CT MBRF1560CT | UNIT |
| Maximum instantaneous forward voltage per diode | V _F ⁽¹⁾ | I _F = 7.5 A | T _C = 25 °C | - | 0.75 | V |
| | | I _F = 7.5 A | T _C = 125 °C | 0.57 | 0.65 | |
| | | I _F = 15 A | T _C = 25 °C | 0.84 | - | |
| | | I _F = 15 A | T _C = 125 °C | 0.72 | - | |
| Maximum instantaneous reverse current at DC blocking voltage per diode | I _R ⁽²⁾ | Rated V _R | T _C = 25 °C | 0.1 | 1.0 | mA |
| | | | T _C = 125 °C | 15 | 50 | |

Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: pulse width ≤ 40 ms

| THERMAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted) | | | | |
|---|------------------|------|------|------|
| PARAMETER | SYMBOL | MBRF | MBRB | UNIT |
| Maximum thermal resistance per diode | R _{θJA} | - | 60 | °C/W |
| | R _{θJC} | 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 |
| D ² PAK (TO-263AB) | MBRB1545CT-M3/I | 1.35 | I | 800/reel | Tape and reel |
| ITO-220AB | MBRF1545CTHE3_A/P ⁽¹⁾ | 1.99 | P | 50/tube | Tube |
| D ² PAK (TO-263AB) | MBRB1545CTHM3/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)

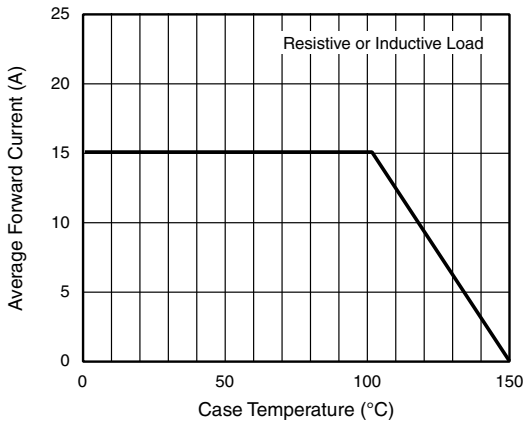


Fig. 1 - Forward Current Derating Curve

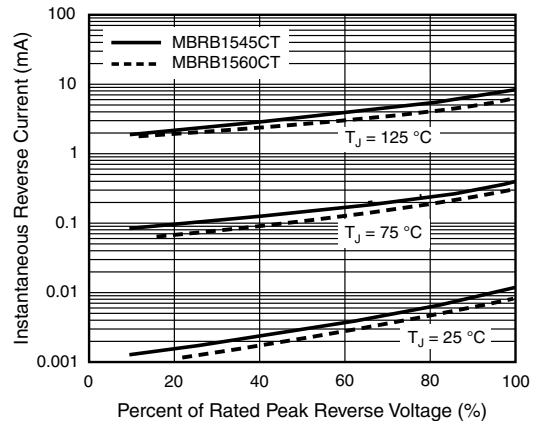


Fig. 4 - Typical Reverse Characteristics Per Diode

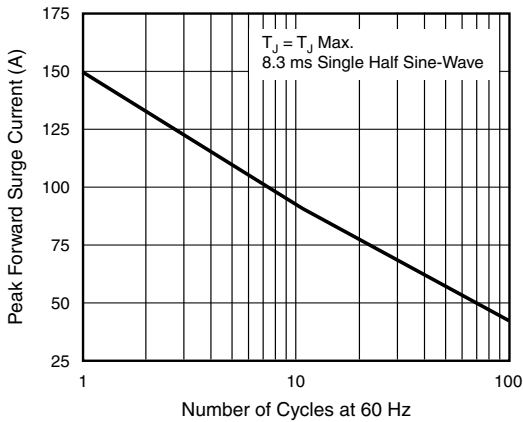


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

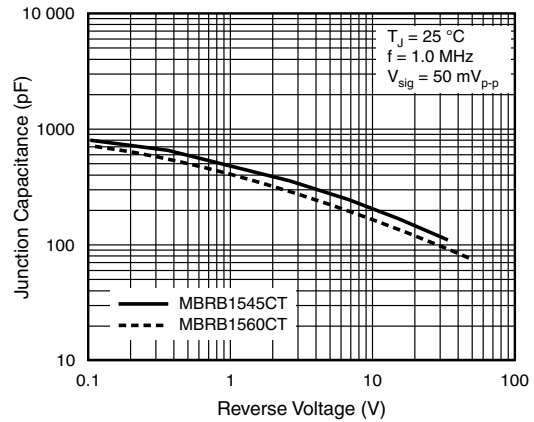


Fig. 5 - Typical Junction Capacitance Per Diode

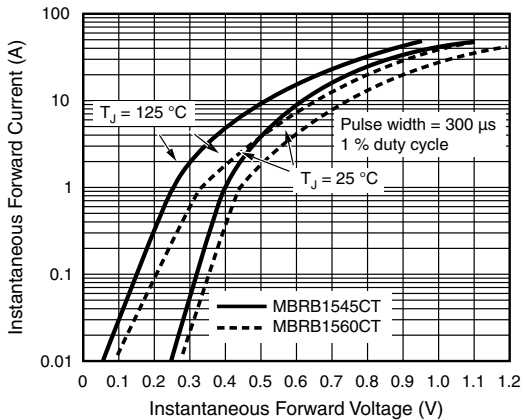


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

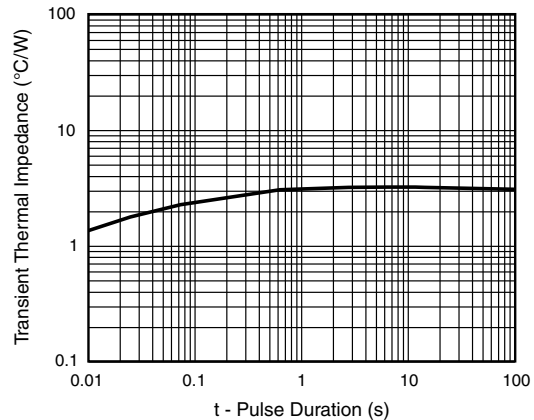
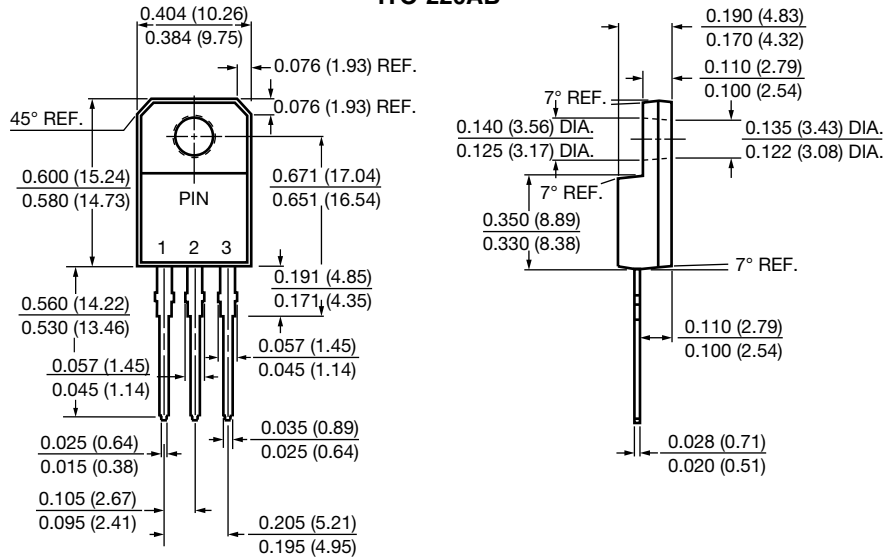


Fig. 6 - Typical Transient Thermal Impedance Per Diode

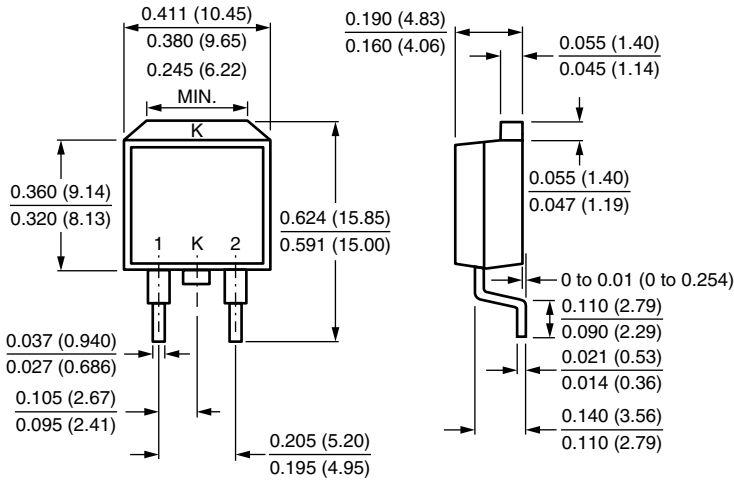


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

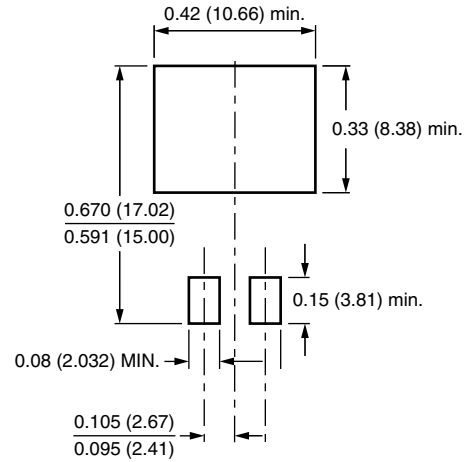
ITO-220AB



D²PAK (TO-263AB)



Mounting Pad Layout





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