

# ANTREX Electronics

Electronic Components Sourcing Information

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## Product Reference Information

**Part Number:** MBRB30H60CTHM3/I  
**Manufacturer:** Vishay General Semiconductor - Diodes Division  
**Package:** Tape & Reel (TR)  
**Availability:** Please confirm with sales

**Product Page:**

<https://antrexco.com/product/details/vishay-general-semiconductor-diodes-division/mbrb30h60cthm3-i.html>



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## Contact Information

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## Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

**Note:**

This PDF includes an ANTREX product reference cover page.

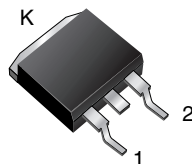
The original manufacturer datasheet follows from the next page.

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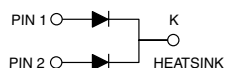
## Dual Common Cathode Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance

**D<sup>2</sup>PAK (TO-263AB)**



**MBRB30HxxCT**



### FEATURES

- Power pack
- Guardring for overvoltage protection
- Lower power losses, 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
- AEC-Q101 qualified available
- Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

### TYPICAL APPLICATIONS

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

### MECHANICAL DATA

**Case:** D<sup>2</sup>PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating  
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

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

**Polarity:** as marked

| PRIMARY CHARACTERISTICS |                               |
|-------------------------|-------------------------------|
| $I_{F(AV)}$             | 2 x 15 A                      |
| $V_{RRM}$               | 45 V, 60 V                    |
| $I_{FSM}$               | 150 A                         |
| $V_F$                   | 0.56 V, 0.59 V                |
| $I_R$                   | 80 $\mu$ A, 60 $\mu$ A        |
| $T_J$ max.              | 175 °C                        |
| Package                 | D <sup>2</sup> PAK (TO-263AB) |
| Circuit configuration   | Common cathode                |

| MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)                                 |                                   |             |             |      |
|-------------------------------------------------------------------------------------------------|-----------------------------------|-------------|-------------|------|
| PARAMETER                                                                                       | SYMBOL                            | MBRB30H45CT | MBRB30H60CT | UNIT |
| Maximum repetitive peak reverse voltage                                                         | V <sub>RRM</sub>                  | 45          | 60          | V    |
| Working peak reverse voltage                                                                    | V <sub>RWM</sub>                  | 45          | 60          | V    |
| Maximum DC blocking voltage                                                                     | V <sub>DC</sub>                   | 45          | 60          | V    |
| Maximum average forward rectified current (fig. 1) <div>total device</div> <div>per diode</div> | I <sub>F(AV)</sub>                | 30          |             | A    |
|                                                                                                 |                                   | 15          |             |      |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode    | I <sub>FSM</sub>                  | 150         |             | A    |
| Peak repetitive reverse surge current per diode at t <sub>p</sub> = 2 μs, 1 kHz                 | I <sub>RRM</sub>                  | 1.0         | 0.5         | A    |
| Peak non-repetitive reverse energy (8/20 μs waveform)                                           | E <sub>RSM</sub>                  | 25          | 20          | mJ   |
| Non-repetitive avalanche energy per diode at 25 °C, I <sub>AS</sub> = 4 A, L = 10 mH            | E <sub>AS</sub>                   | 80          |             | mJ   |
| Electrostatic discharge capacitor voltage human body model: C = 100 pF, R = 1.5 kΩ              | V <sub>C</sub>                    | 25          |             | kV   |
| Voltage rate of change (rated V <sub>R</sub> )                                                  | dV/dt                             | 10 000      |             | V/μs |
| Operating junction and storage temperature range                                                | T <sub>J</sub> , T <sub>STG</sub> | -65 to +175 |             | °C   |

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

| PARAMETER                                                         | TEST CONDITIONS       |                         | SYMBOL                        | MBRB30H45CT |      | MBRB30H60CT |      | UNIT |
|-------------------------------------------------------------------|-----------------------|-------------------------|-------------------------------|-------------|------|-------------|------|------|
|                                                                   |                       |                         |                               | TYP.        | MAX. | TYP.        | MAX. |      |
| Maximum instantaneous forward voltage per diode                   | I <sub>F</sub> = 15 A | T <sub>C</sub> = 25 °C  | V <sub>F</sub> <sup>(1)</sup> | -           | 0.62 | -           | 0.68 | V    |
|                                                                   | I <sub>F</sub> = 15 A | T <sub>C</sub> = 125 °C |                               | 0.49        | 0.56 | 0.55        | 0.59 |      |
|                                                                   | I <sub>F</sub> = 30 A | T <sub>C</sub> = 25 °C  |                               | -           | 0.73 | -           | 0.83 |      |
|                                                                   | I <sub>F</sub> = 30 A | T <sub>C</sub> = 125 °C |                               | 0.62        | 0.67 | 0.68        | 0.71 |      |
| Maximum reverse current per diode at working peak reverse voltage |                       | T <sub>J</sub> = 25 °C  | I <sub>R</sub> <sup>(2)</sup> | -           | 80   | -           | 60   | μA   |
|                                                                   |                       | T <sub>J</sub> = 125 °C |                               | 5.0         | 15   | 4.0         | 15   | mA   |

**Notes**(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle(2) Pulse test: pulse width  $\leq 40\text{ ms}$ **THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

| PARAMETER                                             | SYMBOL          | MBRB30H45CT | MBRB30H60CT | UNIT                 |
|-------------------------------------------------------|-----------------|-------------|-------------|----------------------|
| Typical thermal resistance junction to case per diode | $R_{\theta JC}$ | 1.5         |             | $^{\circ}\text{C/W}$ |

**ORDERING INFORMATION** (Example)

| PACKAGE                       | PREFERRED P/N                   | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|-------------------------------|---------------------------------|-----------------|--------------|---------------|---------------|
| D <sup>2</sup> PAK (TO-263AB) | MBRB30H45CT-M3/I                | 1.35            | I            | 800/reel      | Tape and reel |
| D <sup>2</sup> PAK (TO-263AB) | MBRB30H45CTHM3/I <sup>(1)</sup> | 1.35            | I            | 800/reel      | Tape and reel |

**Notes**

(1) AEC-Q101 qualified



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

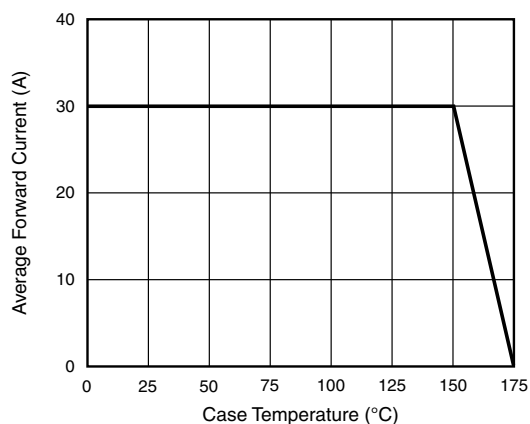


Fig. 1 - Forward Derating Curve

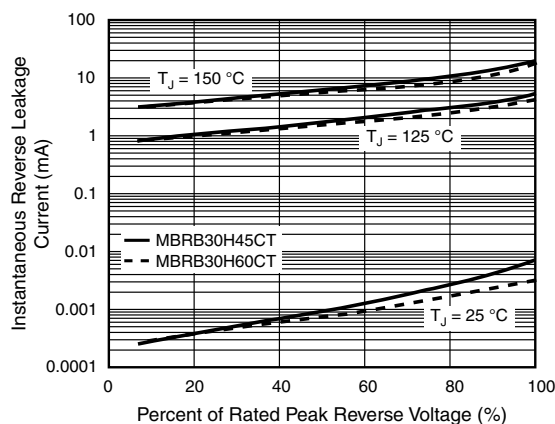


Fig. 4 - Typical Reverse Characteristics Per Diode

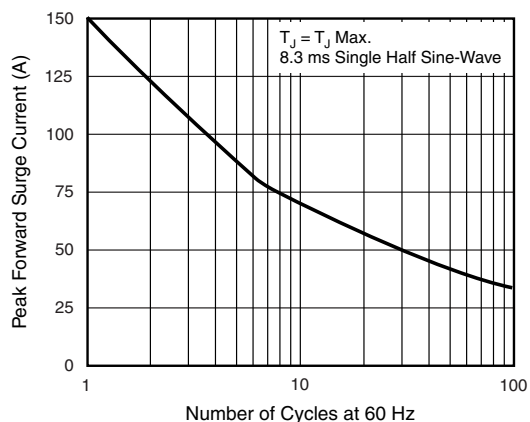


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

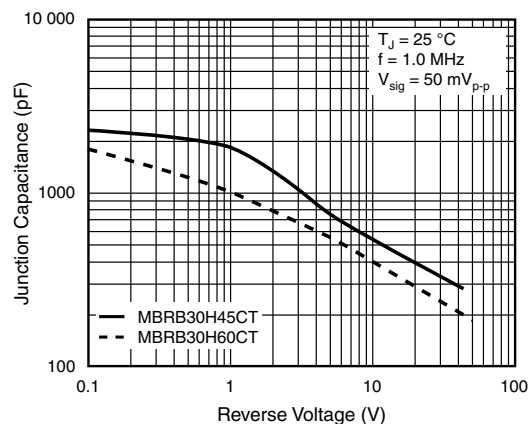


Fig. 5 - Typical Junction Capacitance Per Diode

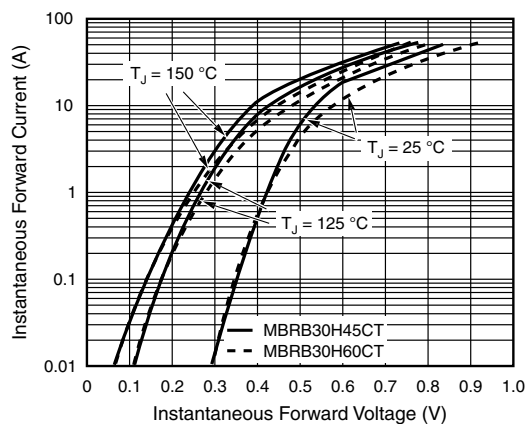


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

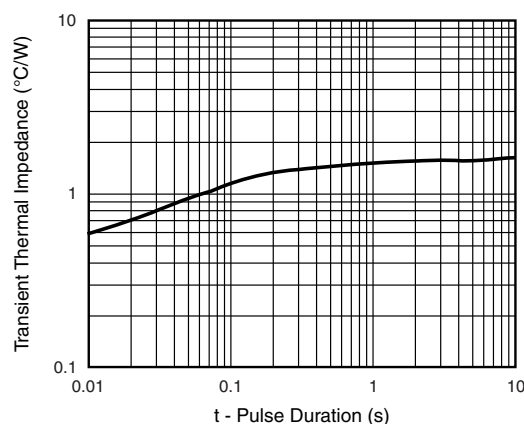
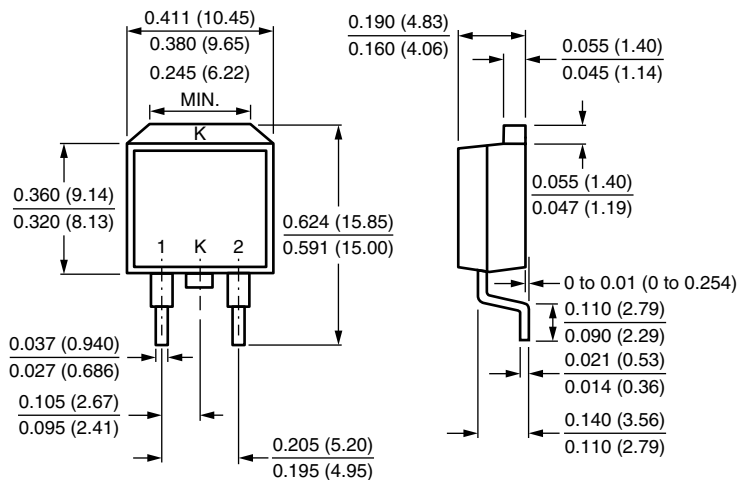


Fig. 6 - Typical Transient Thermal Impedance Per Diode

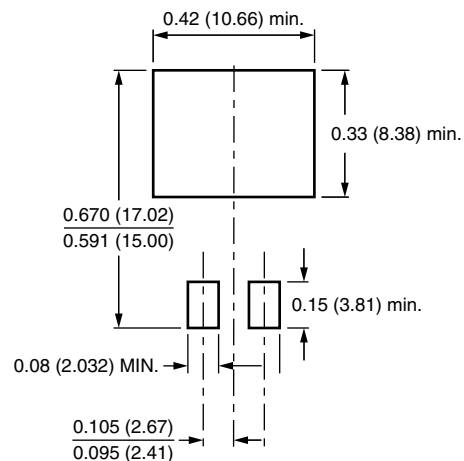


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

D<sup>2</sup>PAK (TO-263AB)



Mounting Pad Layout





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