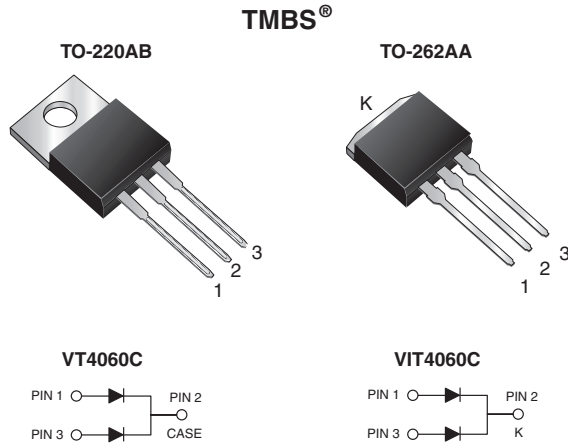


## Dual Trench MOS Barrier Schottky Rectifier

 Ultra Low  $V_F = 0.32\text{ V}$  at  $I_F = 5.0\text{ A}$ 


### FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- 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 high frequency converters, switching power supplies, freewheeling diodes, OR-ing diode, DC/DC converters, and reverse battery protection.

### MECHANICAL DATA

**Case:** TO-220AB and TO-262AA

Molding compound meets UL 94 V-0 flammability rating  
 Base P/N-M3 - halogen-free, RoHS-compliant

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

M3 suffix meets JESD 201 class 1A whisker test

**Polarity:** as marked

**Mounting Torque:** 10 in-lbs maximum

### PRIMARY CHARACTERISTICS

|                              |                    |
|------------------------------|--------------------|
| $I_{F(AV)}$                  | 2 x 15 A           |
| $V_{RRM}$                    | 60 V               |
| $I_{FSM}$                    | 200 A              |
| $V_F$ at $I_F = 15\text{ A}$ | 0.45 V             |
| $T_J$ max.                   | 150 °C             |
| Package                      | TO-220AB, TO-262AA |
| Diode variation              | Common cathode     |

### MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)

| PARAMETER  | SYMBOL         | VT30L60C    | VIT30L60C | UNIT       |
|--|----------------|-------------|-----------|------------|
| Maximum repetitive peak reverse voltage  | $V_{RRM}$      | 60          |           | V          |
| Maximum average forward rectified current (fig. 1)                                 | $I_{F(AV)}$    | per device  | 30        | A          |
|  |                | per diode   | 15        |            |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$      | 200         |           | A          |
| Voltage rate of change (rated $V_R$ )  | $dV/dt$        | 10 000      |           | V/ $\mu$ s |
| Operating junction and storage temperature range                                   | $T_J, T_{STG}$ | -40 to +150 |           | °C         |



| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                        |                         |                               |      |      |      |
|--|------------------------|-------------------------|-------------------------------|------|------|------|
| PARAMETER  | TEST CONDITIONS        |                         | SYMBOL                        | TYP. | MAX. | UNIT |
| Instantaneous forward voltage per diode                                    | I <sub>F</sub> = 5.0 A | T <sub>A</sub> = 25 °C  | V <sub>F</sub> <sup>(1)</sup> | 0.43 | -    | V    |
|  | I <sub>F</sub> = 7.5 A |                         |                               | 0.46 | -    |      |
|  | I <sub>F</sub> = 15 A  |                         |                               | 0.51 | 0.60 |      |
|  | I <sub>F</sub> = 5.0 A | T <sub>A</sub> = 125 °C |                               | 0.32 | -    |      |
|  | I <sub>F</sub> = 7.5 A |                         |                               | 0.36 | -    |      |
|  | I <sub>F</sub> = 15 A  |                         |                               | 0.45 | 0.57 |      |
| Reverse current per diode  | V <sub>R</sub> = 60 V  | T <sub>A</sub> = 25 °C  | I <sub>R</sub> <sup>(2)</sup> | -    | 4.0  | mA   |
|  |                        | T <sub>A</sub> = 125 °C |                               | 27   | 110  |      |

Notes

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

| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |            |                  |          |           |      |
|---|------------|------------------|----------|-----------|------|
| PARAMETER   |            | SYMBOL           | VT30L60C | VIT30L60C | UNIT |
| Typical thermal resistance  | per diode  | R <sub>θJC</sub> | 1.8      |           | °C/W |
|   | per device |                  | 0.8      |           |      |

| ORDERING INFORMATION (Example) |                 |                 |              |               |               |
|--------------------------------|-----------------|-----------------|--------------|---------------|---------------|
| PACKAGE                        | PREFERRED P/N   | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| TO-220AB                       | VT30L60C-M3/4W  | 1.89            | 4W           | 50/tube       | Tube          |
| TO-262AA                       | VIT30L60C-M3/4W | 1.46            | 4W           | 50/tube       | Tube          |

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

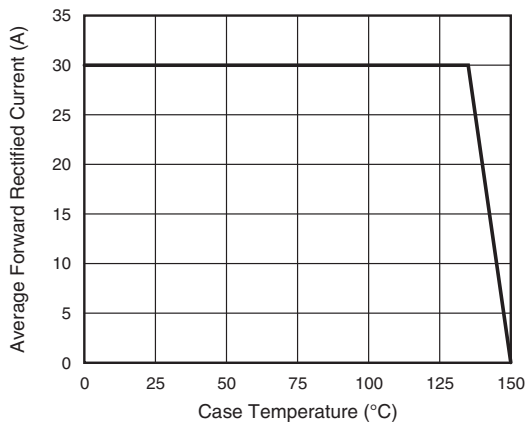


Fig. 1 - Maximum Forward Current Derating Curve

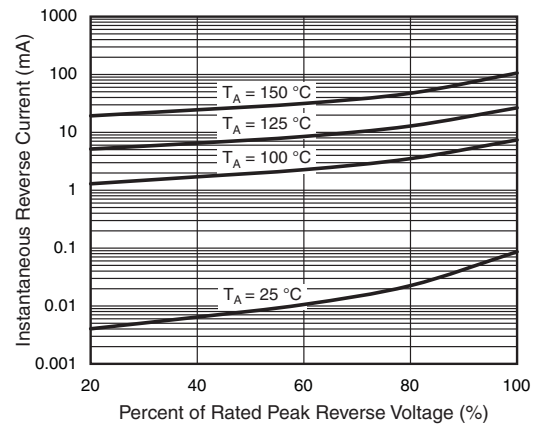


Fig. 4 - Typical Reverse Characteristics Per Diode

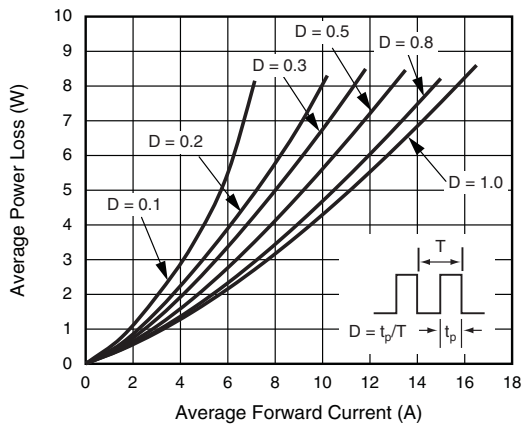


Fig. 2 - Forward Power Dissipation Characteristics Per Diode

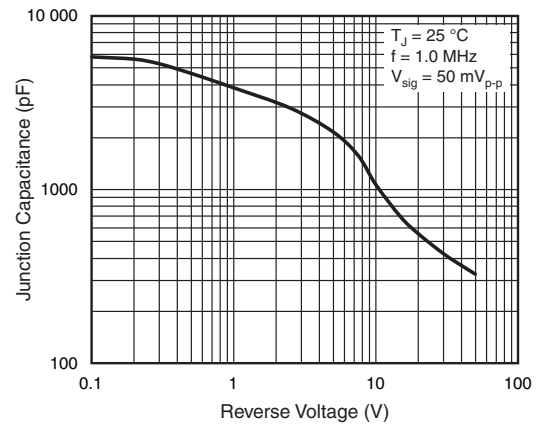


Fig. 5 - Typical Transient Thermal Impedance Per Diode

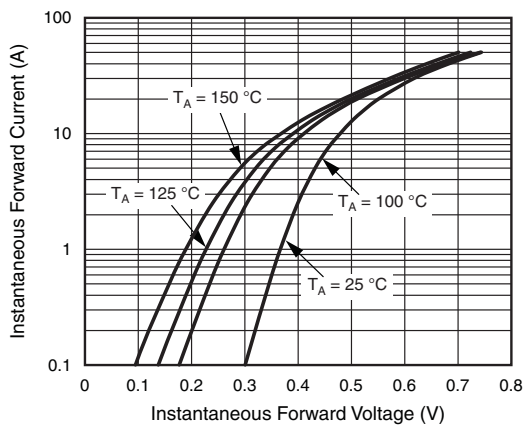


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

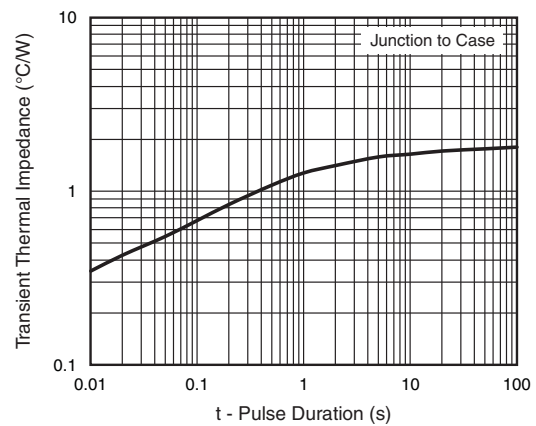
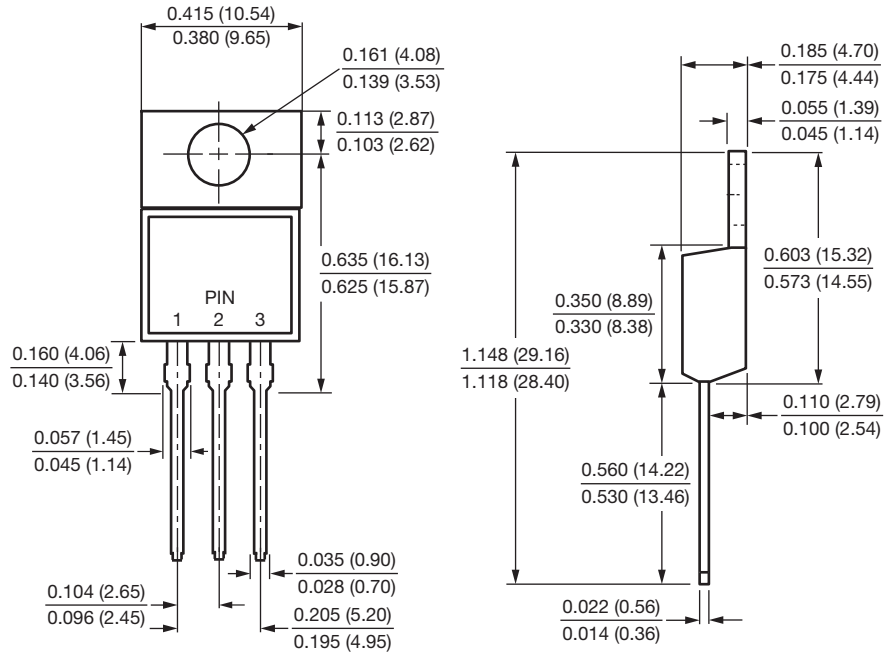


Fig. 6 - Typical Junction Capacitance Per Diode

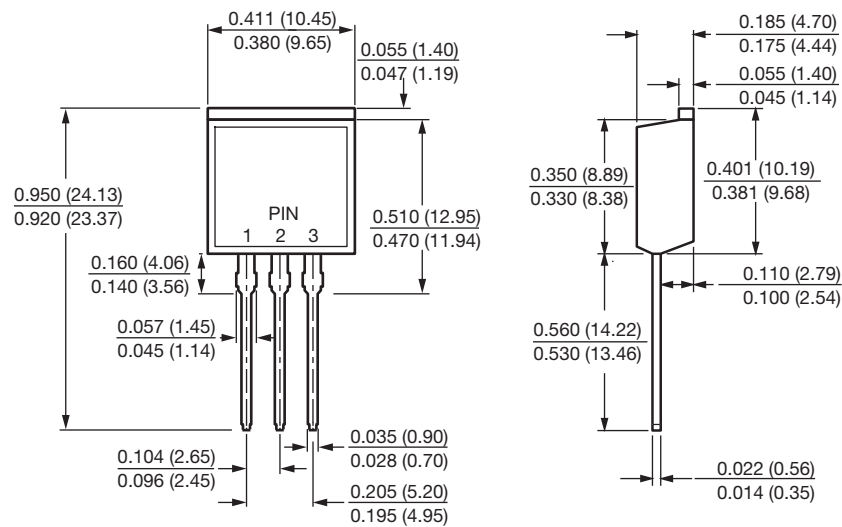


## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### TO-220AB



### TO-262AA





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