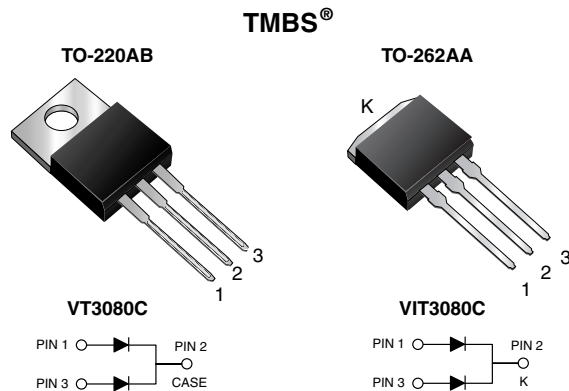


## Dual Trench MOS Barrier Schottky Rectifier

Ultra Low  $V_F = 0.46\text{ V}$  at  $I_F = 5\text{ A}$



### FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Solder bath temperature 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- **Halogen-free according to IEC 61249-2-21 definition**



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

### TYPICAL APPLICATIONS

For use in high frequency DC/DC converters, switching power supplies, freewheeling diodes, OR-ing diode, and reserve battery protection.

### PRIMARY CHARACTERISTICS

|                              |          |
|------------------------------|----------|
| $I_{F(AV)}$                  | 2 x 15 A |
| $V_{RRM}$                    | 80 V     |
| $I_{FSM}$                    | 150 A    |
| $V_F$ at $I_F = 15\text{ A}$ | 0.65 V   |
| $T_J$ max.                   | 150 °C   |

### 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, and commercial grade

Base P/NHM3 - halogen-free, RoHS compliant, and 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

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

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

| PARAMETER  | SYMBOL         | VT3080C       | VIT3080C | UNIT       |
|--|----------------|---------------|----------|------------|
| Maximum repetitive peak reverse voltage  | $V_{RRM}$      | 80            |          | 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 | $I_{FSM}$      | 150           |          | A          |
| Voltage rate of change (rated $V_R$ )  | dV/dt          | 10 000        |          | V/ $\mu$ s |
| Operating junction and storage temperature range                                   | $T_J, T_{STG}$ | - 55 to + 150 |          | °C         |

## VT3080C, VIT3080C



Vishay General Semiconductor

| ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) |                      |                                   |             |      |      |               |
|---|----------------------|-----------------------------------|-------------|------|------|---------------|
| PARAMETER   | TEST CONDITIONS      |                                   | SYMBOL      | TYP. | MAX. | UNIT          |
| Instantaneous forward voltage per diode   | $I_F = 5\text{ A}$   | $T_A = 25\text{ }^\circ\text{C}$  | $V_F^{(1)}$ | 0.52 | -    | V             |
|   | $I_F = 7.5\text{ A}$ |                                   |             | 0.58 | -    |               |
|   | $I_F = 15\text{ A}$  |                                   |             | 0.75 | 0.82 |               |
|   | $I_F = 5\text{ A}$   | $T_A = 125\text{ }^\circ\text{C}$ |             | 0.46 | -    |               |
|   | $I_F = 7.5\text{ A}$ |                                   |             | 0.52 | -    |               |
|   | $I_F = 15\text{ A}$  |                                   |             | 0.65 | 0.70 |               |
| Reverse current per diode   | $V_R = 80\text{ V}$  | $T_A = 25\text{ }^\circ\text{C}$  | $I_R^{(2)}$ | 30   | 700  | $\mu\text{A}$ |
|   |                      | $T_A = 125\text{ }^\circ\text{C}$ |             | 20   | 35   | 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          | VT3080C | VIT3080C | UNIT               |
| Typical thermal resistance   | per diode  | $R_{\theta JC}$ | 2.5     |          | $^\circ\text{C/W}$ |
|  | per device |                 | 2.0     |          |                    |

| ORDERING INFORMATION (Example) |                |                 |              |               |               |
|--------------------------------|----------------|-----------------|--------------|---------------|---------------|
| PACKAGE                        | PREFERRED P/N  | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| TO-220AB                       | VT3080C-M3/4W  | 1.89            | 4W           | 50/tube       | Tube          |
| TO-262AA                       | VIT3080C-M3/4W | 1.46            | 4W           | 50/tube       | Tube          |
| TO-220AB <sup>(1)</sup>        | VT3080CHM3/4W  | 1.89            | 4W           | 50/tube       | Tube          |
| TO-262AA <sup>(1)</sup>        | VIT3080CHM3/4W | 1.46            | 4W           | 50/tube       | Tube          |

**Note**

(1) AEC-Q101 qualified



**RATINGS AND CHARACTERISTICS CURVES**

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

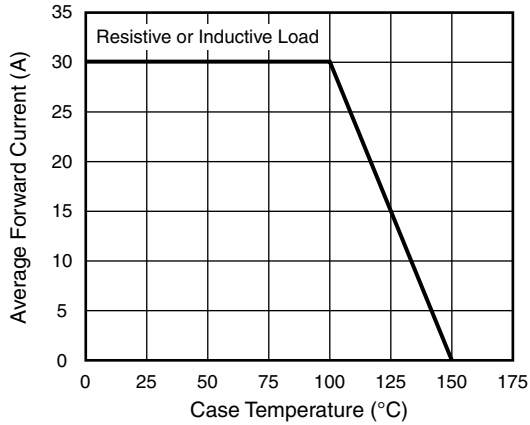


Fig. 1 - Maximum Forward Current Derating Curve

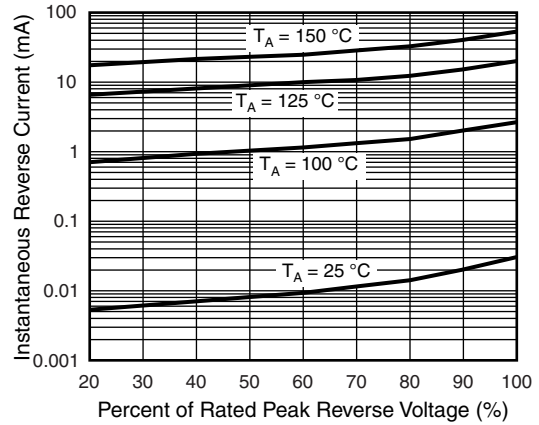


Fig. 4 - Typical Reverse Characteristics

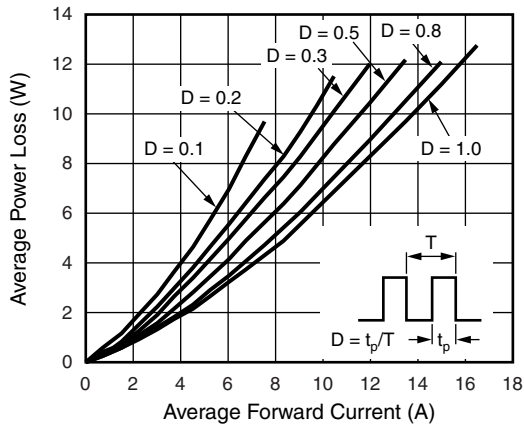


Fig. 2 - Forward Power Dissipation Characteristics

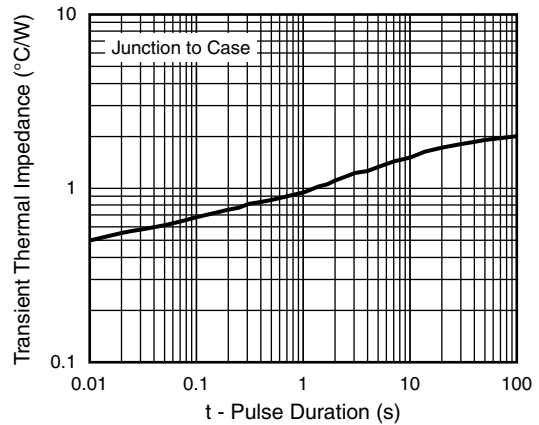


Fig. 5 - Typical Transient Thermal Impedance

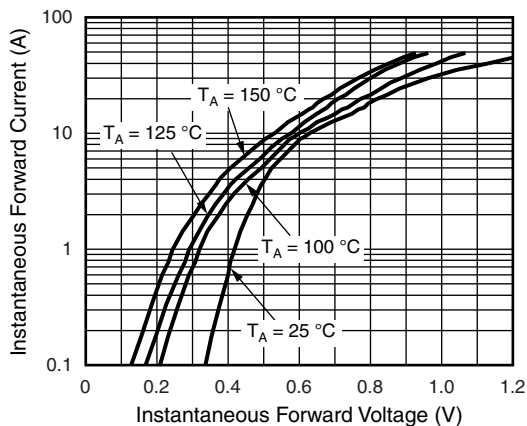


Fig. 3 - Typical Instantaneous Forward Characteristics

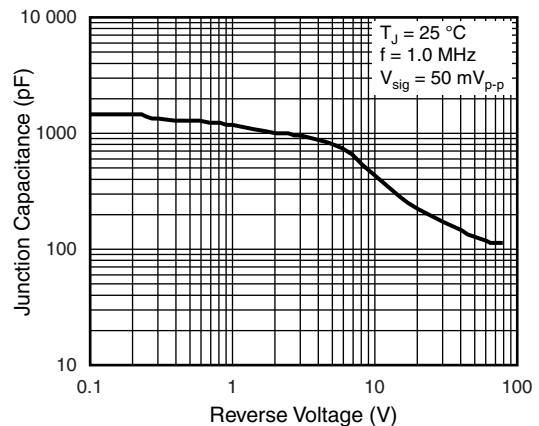


Fig. 6 - Typical Junction Capacitance

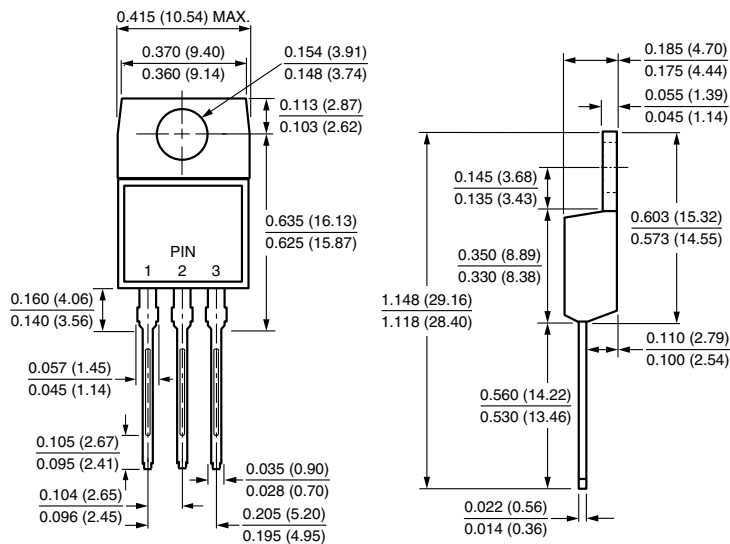
# VT3080C, VIT3080C

Vishay General Semiconductor

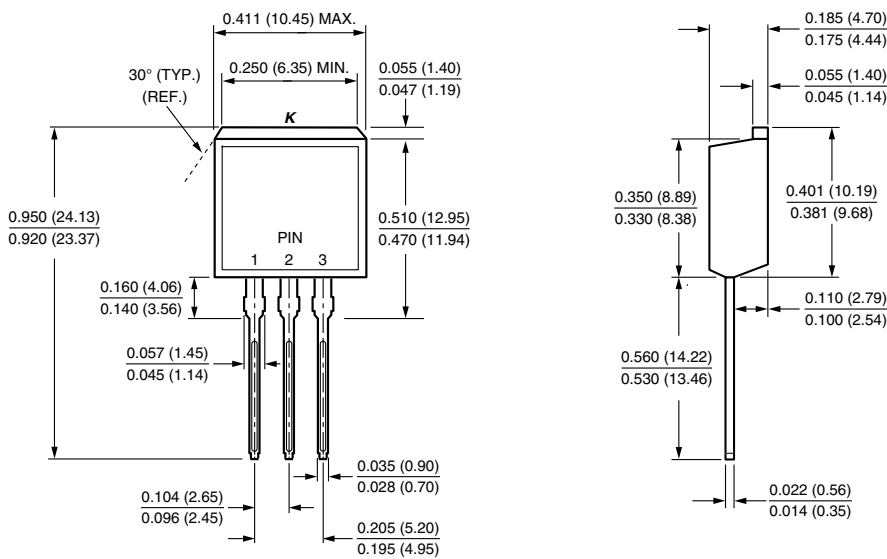


## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### TO-220AB



### TO-262AA





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