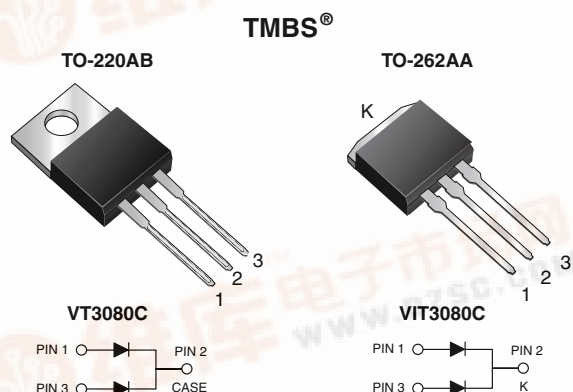


## Dual Trench MOS Barrier Schottky Rectifier

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
- 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

**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

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)                                 | $I_{F(AV)}$    | 30            |          | A          |
|                                                                                    |                | 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 <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 A   | T <sub>A</sub> = 25 °C  | V <sub>F</sub> <sup>(1)</sup> | 0.52 | -    | V    |
|                                                                            | I <sub>F</sub> = 7.5 A |                         |                               | 0.58 | -    |      |
|                                                                            | I <sub>F</sub> = 15 A  |                         |                               | 0.75 | 0.82 |      |
|                                                                            | I <sub>F</sub> = 5 A   | T <sub>A</sub> = 125 °C |                               | 0.46 | -    |      |
|                                                                            | I <sub>F</sub> = 7.5 A |                         |                               | 0.52 | -    |      |
|                                                                            | I <sub>F</sub> = 15 A  |                         |                               | 0.65 | 0.70 |      |
| Reverse current per diode                                                  | V <sub>R</sub> = 80 V  | T <sub>A</sub> = 25 °C  | I <sub>R</sub> <sup>(2)</sup> | 30   | 700  | μA   |
|                                                                            |                        | T <sub>A</sub> = 125 °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 <sub>A</sub> = 25 °C unless otherwise noted) |            |                  |         |          |      |
|-------------------------------------------------------------------------|------------|------------------|---------|----------|------|
| PARAMETER                                                               |            | SYMBOL           | VT3080C | VIT3080C | UNIT |
| Typical thermal resistance                                              | per diode  | R <sub>θJC</sub> | 2.5     |          | °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          |

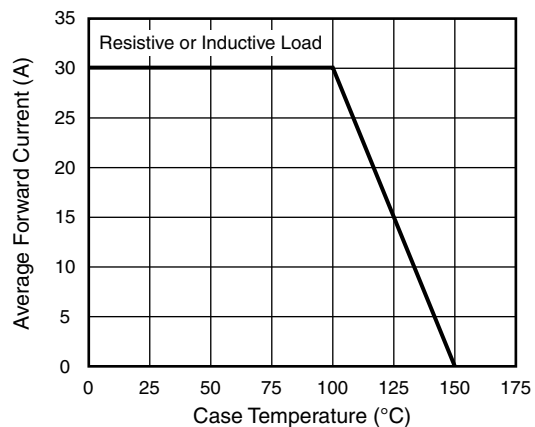
**RATINGS AND CHARACTERISTICS CURVES**(T<sub>A</sub> = 25 °C unless otherwise noted)

Fig. 1 - Maximum Forward Current Derating Curve

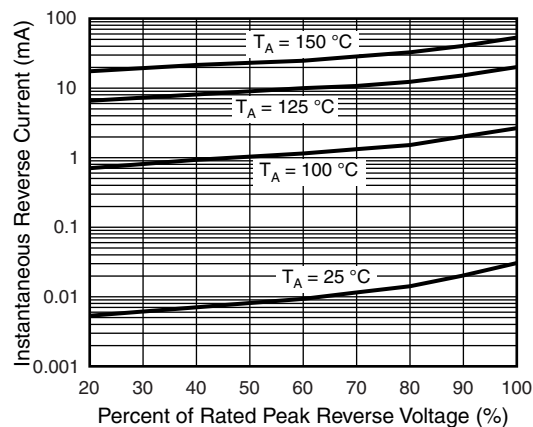


Fig. 4 - Typical Reverse Characteristics

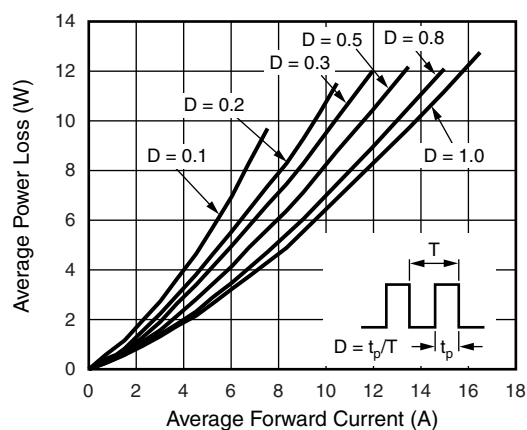


Fig. 2 - Forward Power Dissipation Characteristics

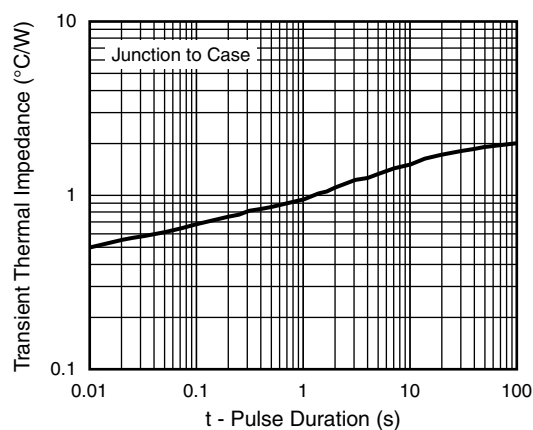


Fig. 5 - Typical Transient Thermal Impedance

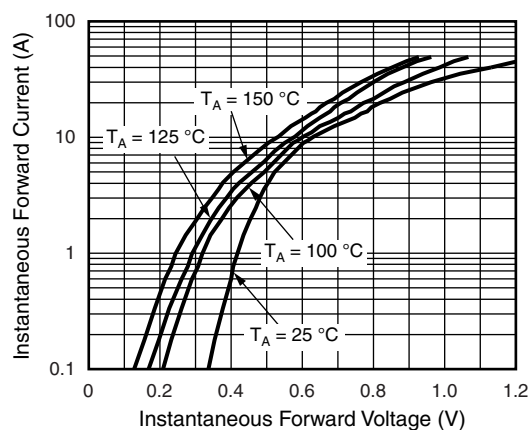


Fig. 3 - Typical Instantaneous Forward Characteristics

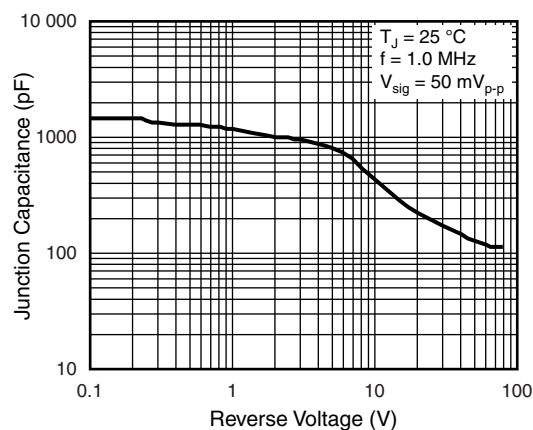


Fig. 6 - Typical Junction Capacitance

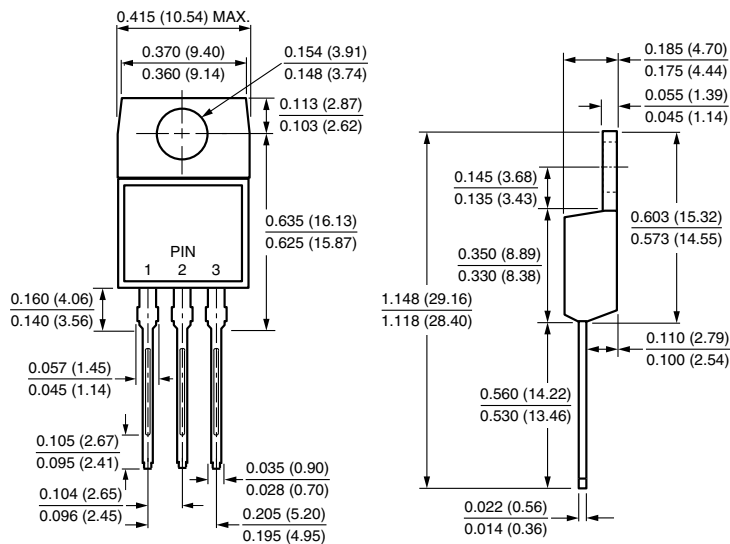
## VT3080C, VIT3080C

Vishay General Semiconductor

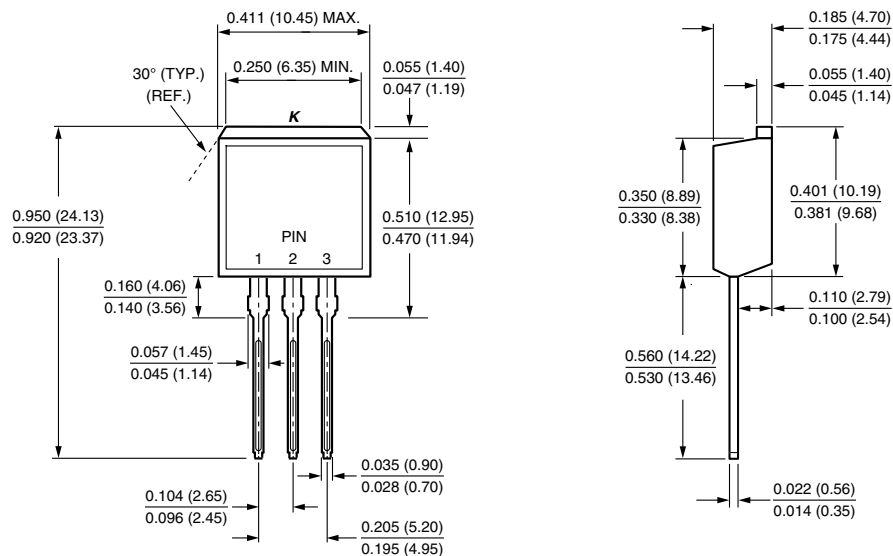


## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

## TO-220AB



## TO-262AA



## Disclaimer

All product specifications and data are subject to change without notice.

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