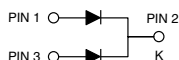
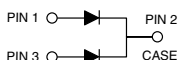
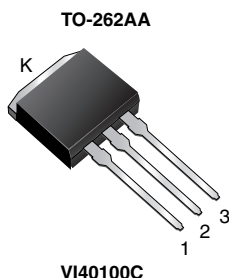
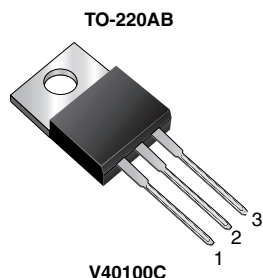


Dual High Voltage TMBS® (Trench MOS Barrier Schottky) Rectifier

Ultra Low $V_F = 0.38 \text{ V}$ at $I_F = 5 \text{ A}$



FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Low thermal resistance
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

TYPICAL APPLICATIONS

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

PRIMARY CHARACTERISTICS

| | |
|-------------------------------|--------------------|
| $I_{F(AV)}$ | 2 x 20 A |
| V_{RRM} | 100 V |
| I_{FSM} | 250 A |
| V_F at $I_F = 20 \text{ A}$ | 0.61 V |
| $T_J \text{ max.}$ | 150 °C |
| Package | TO-220AB, TO-262AA |
| Circuit configurations | Common cathode |

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 max.

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

| PARAMETER | SYMBOL | V40100C | VI40100C | UNIT |
|--|-------------|-------------|----------|------------|
| Max. repetitive peak reverse voltage | V_{RRM} | 100 | | V |
| Max. average forward rectified current (fig. 1) | $I_{F(AV)}$ | 40 | | A |
| | | 20 | | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | I_{FSM} | 250 | | A |
| Voltage rate of change (rated V_R) | dV/dt | 10 000 | | V/ μ s |
| Operating junction temperature range | T_J | -40 to +150 | | °C |
| Storage temperature range | T_{stg} | -55 to +150 | | °C |

**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 A | T _A = 25 °C | V _F ⁽¹⁾ | 0.47 | - | V |
| | I _F = 10 A | | | 0.54 | - | |
| | I _F = 20 A | | | 0.67 | 0.73 | |
| | I _F = 5 A | T _A = 125 °C | | 0.38 | - | |
| | I _F = 10 A | | | 0.45 | - | |
| | I _F = 20 A | | | 0.61 | 0.67 | |
| Reverse current at rated V _R per diode | V _R = 70 V | T _A = 25 °C | I _R ⁽²⁾ | 9 | - | μA |
| | | T _A = 125 °C | | 10 | - | mA |
| | V _R = 100 V | T _A = 25 °C | | - | 1000 | μA |
| | | T _A = 125 °C | | 21 | 45 | mA |

Notes(1) Pulse test: 300 μs 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 | V40100C | VI40100C | UNIT |
|--------------------------------------|-----------------|---------|----------|----------------------|
| Typical thermal resistance per diode | $R_{\theta JC}$ | 2.0 | | $^{\circ}\text{C/W}$ |

ORDERING INFORMATION (Example)

| PACKAGE | PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|----------|----------------|-----------------|--------------|---------------|---------------|
| TO-220AB | V40100C-M3/4W | 1.85 | 4W | 50/tube | Tube |
| TO-262AA | VI40100C-M3/4W | 1.45 | 4W | 50/tube | Tube |



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

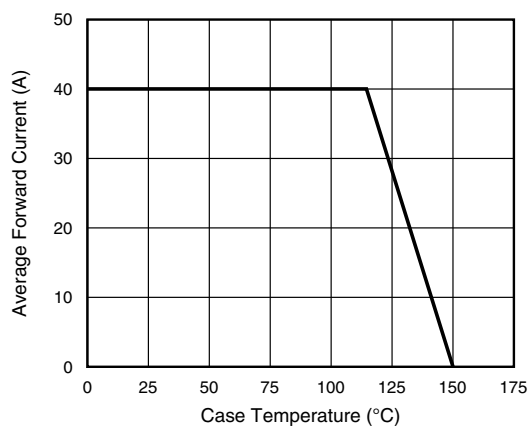


Fig. 1 - Forward Current Derating Curve

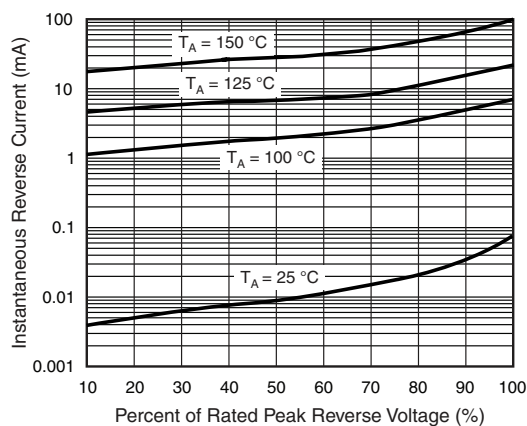


Fig. 4 - Typical Reverse Characteristics Per Diode

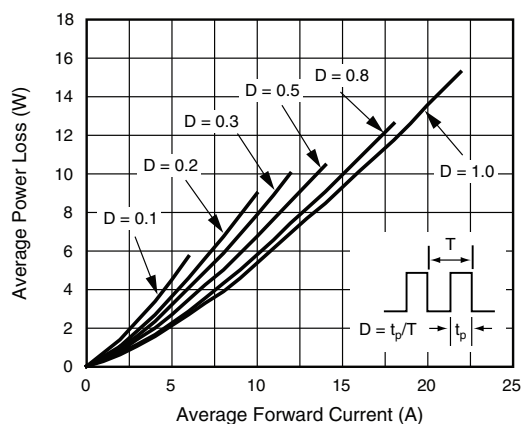


Fig. 2 - Forward Power Loss Characteristics Per Diode

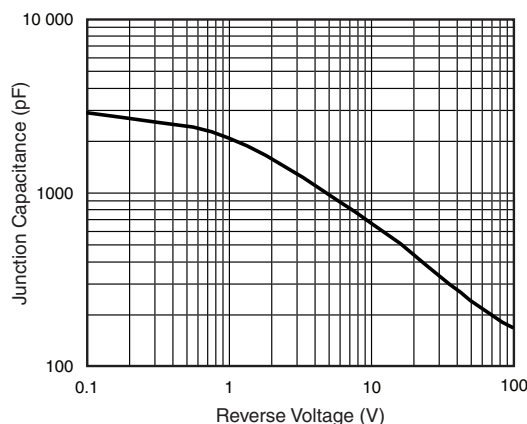


Fig. 5 - Typical Junction Capacitance Per Diode

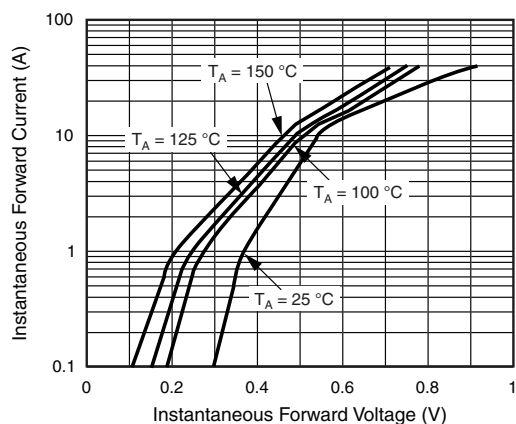


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

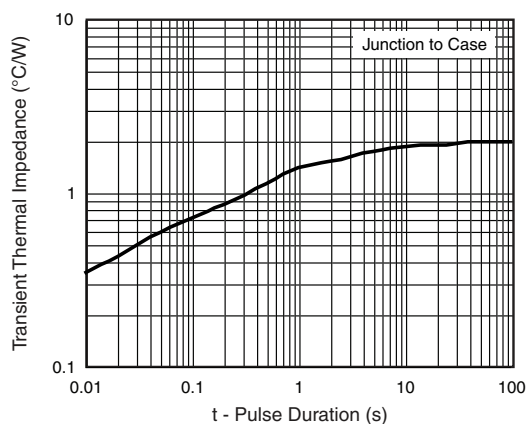
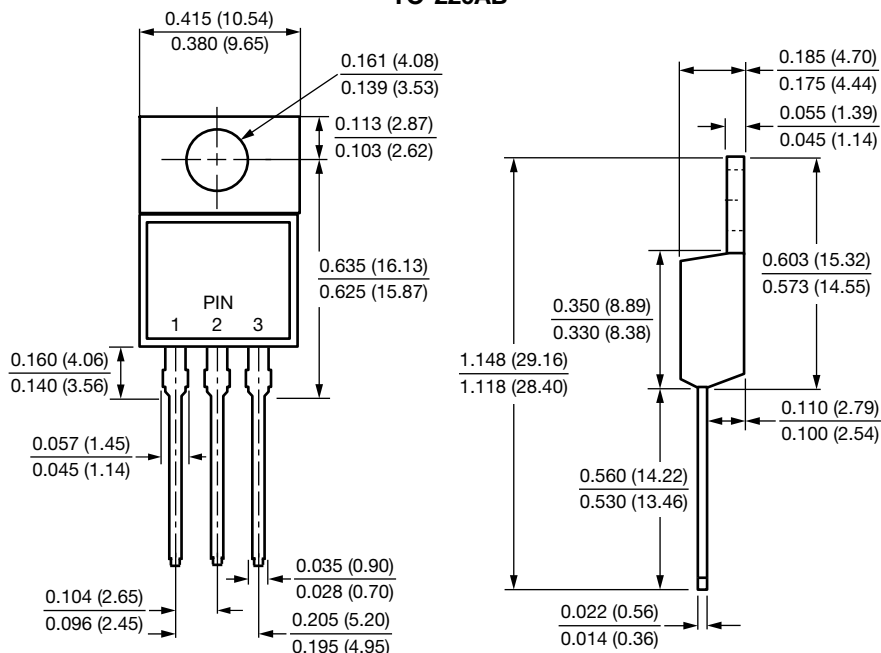


Fig. 6 - Typical Transient Thermal Impedance Per Diode

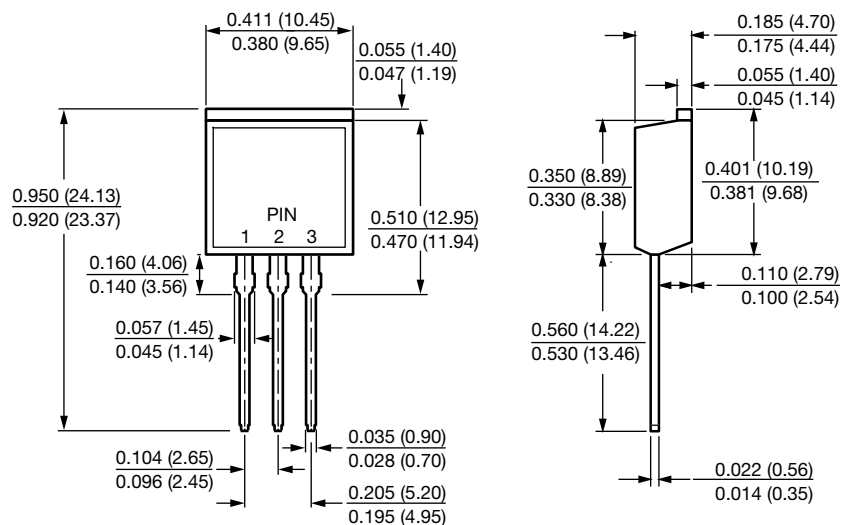


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB



TO-262AA





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