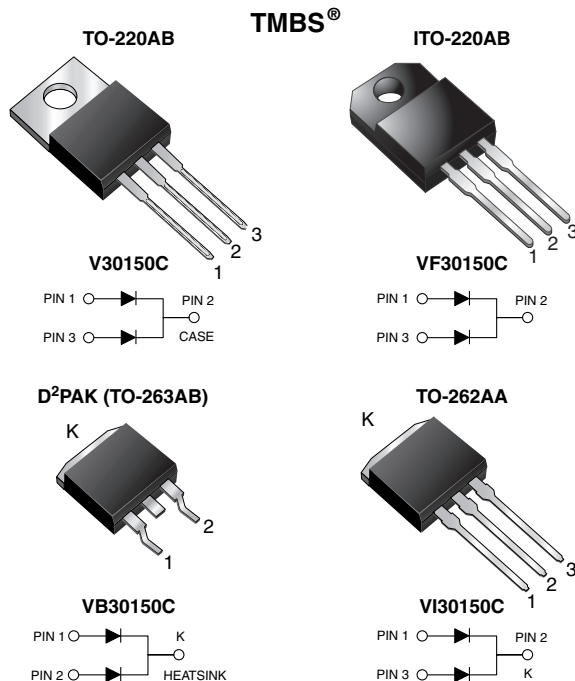


**Dual High Voltage Trench MOS Barrier Schottky Rectifier**Ultra Low  $V_F = 0.56\text{ V}$  at  $I_F = 5\text{ A}$ **LINKS TO ADDITIONAL RESOURCES****FEATURES**

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for D²PAK (TO-263AB) package)
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AB, ITO-220AB and TO-262AA package)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

**RoHS**  
COMPLIANT**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, ITO-220AB, D²PAK (TO-263AB), and TO-262AA

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102  
E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** as marked

**Mounting Torque:** 10 in-lbs max.

**PRIMARY CHARACTERISTICS**

|                              |                                                 |
|------------------------------|-------------------------------------------------|
| $I_{F(AV)}$                  | 2 x 15 A                                        |
| $V_{RRM}$                    | 150 V                                           |
| $I_{FSM}$                    | 140 A                                           |
| $V_F$ at $I_F = 15\text{ A}$ | 0.71 V                                          |
| $T_J$ max.                   | 150 °C                                          |
| Package                      | TO-220AB, ITO-220AB, D²PAK (TO-263AB), TO-262AA |
| Circuit configuration        | Common cathode                                  |

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

| PARAMETER                                                                                                                                           | SYMBOL         | V30150C     | VF30150C | VB30150C | VI30150C | UNIT               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------|----------|----------|----------|--------------------|
| Max. repetitive peak reverse voltage                                                                                                                | $V_{RRM}$      | 150         |          |          |          | V                  |
| Max. average forward rectified current (fig. 1)                                                                                                     | per device     | 30          |          |          |          | A                  |
|                                                                                                                                                     | per diode      | 15          |          |          |          |                    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode                                                        | $I_{FSM}$      | 140         |          |          |          | A                  |
| Non-repetitive avalanche energy at $T_J = 25\text{ }^{\circ}\text{C}$ , $L = 60\text{ mH}$ per diode                                                | $E_{AS}$       | 110         |          |          |          | mJ                 |
| Peak repetitive reverse current at $t_p = 2\text{ }\mu\text{s}$ , 1 kHz, $T_J = 38\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ per diode | $I_{RRM}$      | 0.5         |          |          |          | A                  |
| Voltage rate of change (rated $V_R$ )                                                                                                               | $dV/dt$        | 10 000      |          |          |          | V/ $\mu\text{s}$   |
| Isolation voltage (ITO-220AB only) from terminal to heatsink $t = 1\text{ min}$                                                                     | $V_{AC}$       | 1500        |          |          |          | V                  |
| Operating junction and storage temperature range                                                                                                    | $T_J, T_{STG}$ | -55 to +150 |          |          |          | $^{\circ}\text{C}$ |

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

| PARAMETER                                              | TEST CONDITIONS                                          | SYMBOL   | TYP.       | MAX. | UNIT          |
|--------------------------------------------------------|----------------------------------------------------------|----------|------------|------|---------------|
| Breakdown voltage                                      | $I_R = 1.0\text{ mA}$ $T_A = 25\text{ }^{\circ}\text{C}$ | $V_{BR}$ | 150 (min.) | -    | V             |
| Instantaneous forward voltage per diode <sup>(1)</sup> | $I_F = 5\text{ A}$ $T_A = 25\text{ }^{\circ}\text{C}$    | $V_F$    | 0.72       | -    | V             |
|                                                        | $I_F = 7.5\text{ A}$ $T_A = 25\text{ }^{\circ}\text{C}$  |          | 0.81       | -    |               |
|                                                        | $I_F = 15\text{ A}$ $T_A = 25\text{ }^{\circ}\text{C}$   |          | 1.11       | 1.36 |               |
|                                                        | $I_F = 5\text{ A}$ $T_A = 125\text{ }^{\circ}\text{C}$   |          | 0.56       | -    |               |
|                                                        | $I_F = 7.5\text{ A}$ $T_A = 125\text{ }^{\circ}\text{C}$ |          | 0.61       | -    |               |
|                                                        | $I_F = 15\text{ A}$ $T_A = 125\text{ }^{\circ}\text{C}$  |          | 0.71       | 0.79 |               |
| Reverse current per diode <sup>(2)</sup>               | $V_R = 100\text{ V}$ $T_A = 25\text{ }^{\circ}\text{C}$  | $I_R$    | 1.5        | -    | $\mu\text{A}$ |
|                                                        | $V_R = 100\text{ V}$ $T_A = 125\text{ }^{\circ}\text{C}$ |          | 2          | -    | mA            |
|                                                        | $V_R = 150\text{ V}$ $T_A = 25\text{ }^{\circ}\text{C}$  |          | -          | 200  | $\mu\text{A}$ |
|                                                        | $V_R = 150\text{ V}$ $T_A = 125\text{ }^{\circ}\text{C}$ |          | 4          | 20   | mA            |

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

| PARAMETER                            | SYMBOL          | V30150C | VF30150C | VI30150C | VI30150C | UNIT                 |
|--------------------------------------|-----------------|---------|----------|----------|----------|----------------------|
| Typical thermal resistance per diode | $R_{\theta JC}$ | 2.2     | 4.5      | 2.2      | 2.2      | $^{\circ}\text{C/W}$ |

**ORDERING INFORMATION** (Example)

| PACKAGE                       | PREFERRED P/N  | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|-------------------------------|----------------|-----------------|--------------|---------------|---------------|
| TO-220AB                      | V30150C-E3/4W  | 1.89            | 4W           | 50/tube       | Tube          |
| ITO-220AB                     | VF30150C-E3/4W | 1.75            | 4W           | 50/tube       | Tube          |
| D <sup>2</sup> PAK (TO-263AB) | VB30150C-E3/4W | 1.39            | 4W           | 50/tube       | Tube          |
| D <sup>2</sup> PAK (TO-263AB) | VB30150C-E3/8W | 1.39            | 8W           | 800/reel      | Tape and reel |
| TO-262AA                      | VI30150C-E3/4W | 1.46            | 4W           | 50/tube       | Tube          |

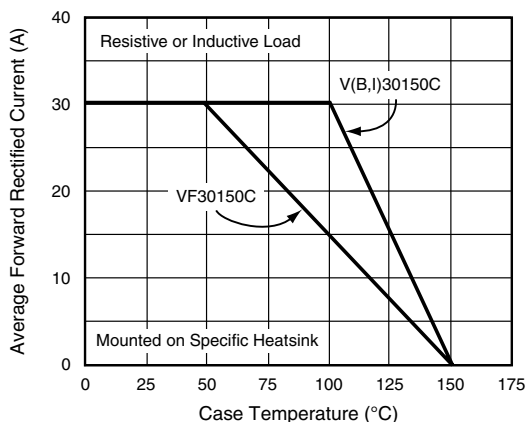
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Maximum Forward Current Derating Curve

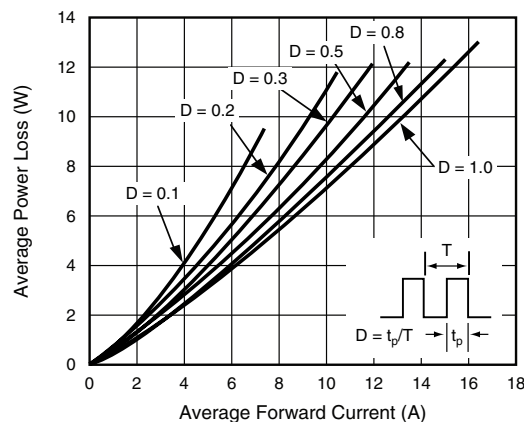


Fig. 2 - Forward Power Loss Characteristics Per Diode

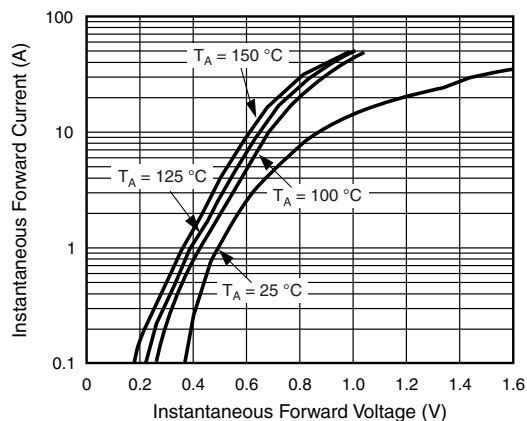


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

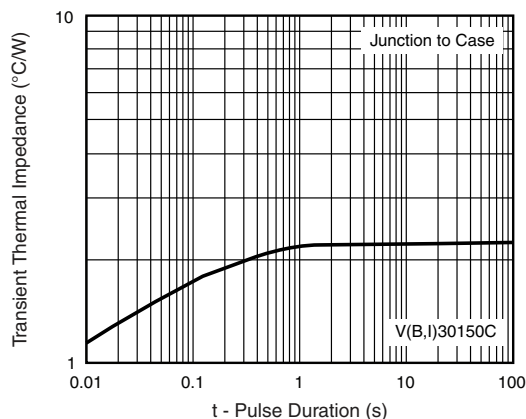


Fig. 6 - Typical Transient Thermal Impedance Per Diode

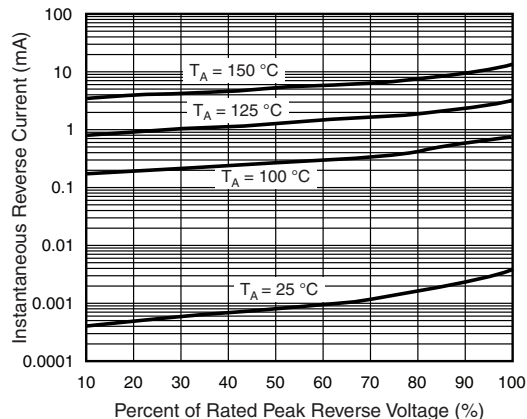


Fig. 4 - Typical Reverse Characteristics Per Diode

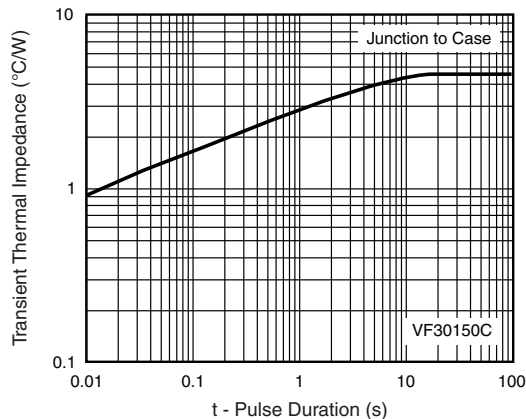


Fig. 7 - Typical Transient Thermal Impedance Per Diode

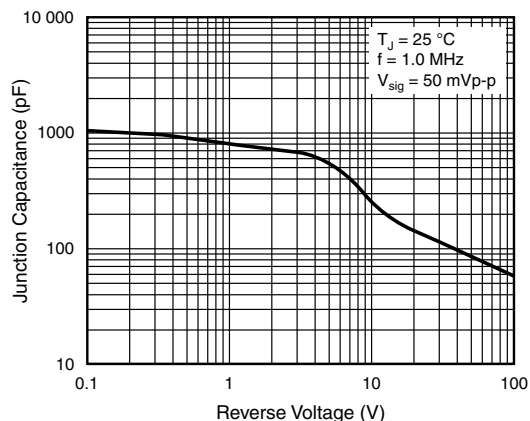
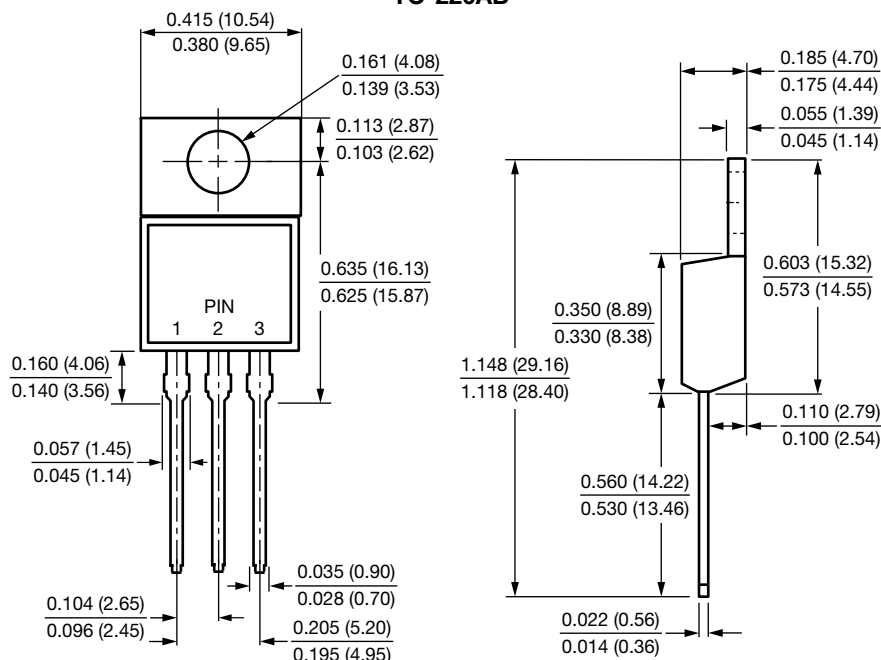


Fig. 5 - Typical Junction Capacitance

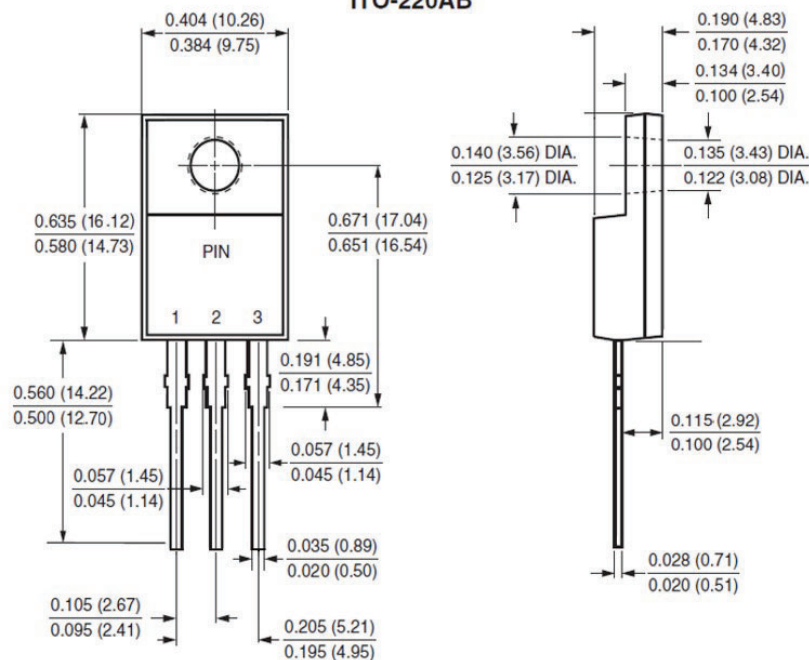


## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### TO-220AB

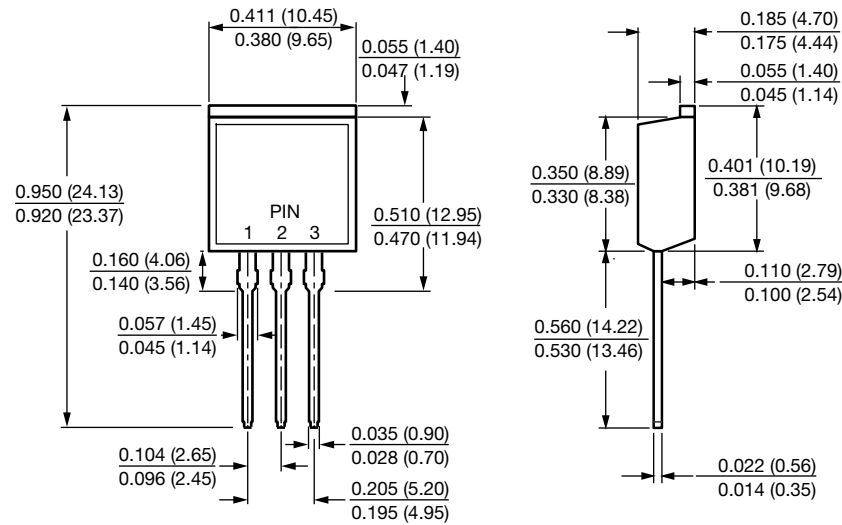


### ITO-220AB

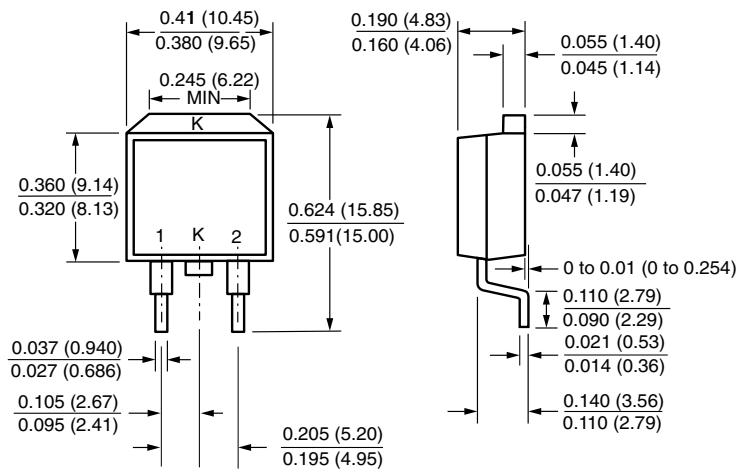




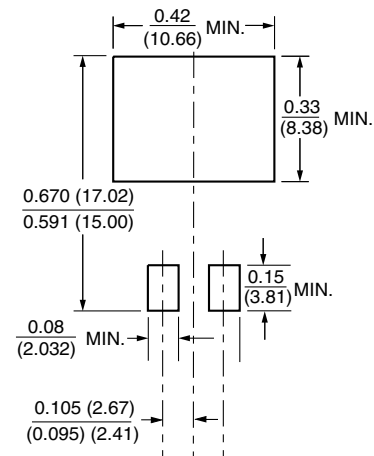
## TO-262AA



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



## Mounting Pad Layout





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