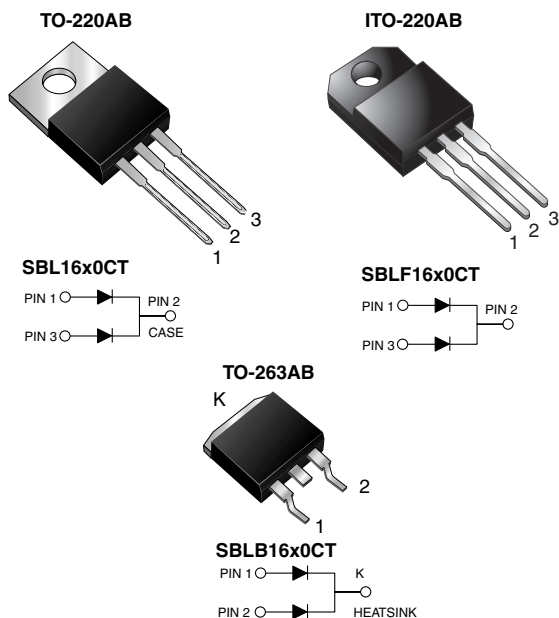
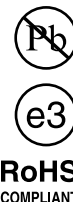


## Dual Common Cathode Schottky Rectifier



### FEATURES

- Power pack
- Guardring for overvoltage protection
- Low power loss, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AB and ITO-220AB package)
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters, and polarity protection application.

### MECHANICAL DATA

**Case:** TO-220AB, ITO-220AB, TO-263AB

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade  
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

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

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

**Polarity:** As marked

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

### PRIMARY CHARACTERISTICS

|                  |                               |
|------------------|-------------------------------|
| $I_{F(AV)}$      | 2 x 8 A                       |
| $V_{RRM}$        | 30 V to 40 V                  |
| $I_{FSM}$        | 250 A                         |
| $V_F$            | 0.55 V                        |
| $T_J$ max.       | 125 °C                        |
| Package          | TO-220AB, ITO-220AB, TO-263AB |
| Diode variations | Common cathode                |

### MAXIMUM RATINGS ( $T_C = 25$ °C unless otherwise noted)

| PARAMETER                                                                                       | SYMBOL                            | SBL1630CT     | SBL1640CT | UNIT |
|-------------------------------------------------------------------------------------------------|-----------------------------------|---------------|-----------|------|
| Maximum repetitive peak reverse voltage                                                         | V <sub>RRM</sub>                  | 30            | 40        | V    |
| Working peak reverse voltage                                                                    | V <sub>RWM</sub>                  | 21            | 28        |      |
| Maximum DC blocking voltage                                                                     | V <sub>DC</sub>                   | 30            | 40        |      |
| Maximum average forward rectified current<br>at T <sub>C</sub> = 95 °C                          | I <sub>F(AV)</sub>                | 16            |           | A    |
|                                                                                                 |                                   | 8.0           |           |      |
| Peak forward surge current 8.3 ms single half sine-wave superimposed<br>on rated load per diode | I <sub>FSM</sub>                  | 250           |           |      |
| Operating junction and storage temperature range                                                | T <sub>J</sub> , T <sub>STG</sub> | - 40 to + 125 |           | °C   |
| Isolation voltage (ITO-220AB only) from terminal to heatsink t = 1 min                          | V <sub>AC</sub>                   | 1500          |           | V    |

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

| PARAMETER                                                              | SYMBOL      | TEST CONDITIONS |                                     | VALUE | UNIT |
|------------------------------------------------------------------------|-------------|-----------------|-------------------------------------|-------|------|
| Maximum instantaneous forward voltage per diode                        | $V_F^{(1)}$ | 8.0 A           |                                     | 0.55  | V    |
| Maximum instantaneous reverse current at DC blocking voltage per diode | $I_R^{(2)}$ | Rated $V_R$     | $T_C = 25\text{ }^{\circ}\text{C}$  | 0.5   | mA   |
|                                                                        |             |                 | $T_C = 100\text{ }^{\circ}\text{C}$ | 50    |      |

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

| PARAMETER                                                  | SYMBOL          | SBL | SBLF | SBLB | UNIT                 |
|------------------------------------------------------------|-----------------|-----|------|------|----------------------|
| Typical thermal resistance from junction to case per diode | $R_{\theta JC}$ | 2.0 | 4.0  | 2.0  | $^{\circ}\text{C/W}$ |

**ORDERING INFORMATION** (Example)

| PACKAGE   | PREFERRED P/N                   | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|-----------|---------------------------------|-----------------|--------------|---------------|---------------|
| TO-220AB  | SBL1630CT-E3/45                 | 1.85            | 45           | 50/tube       | Tube          |
| ITO-220AB | SBLF1630CT-E3/45                | 1.99            | 45           | 50/tube       | Tube          |
| TO-263AB  | SBLB1630CT-E3/45                | 1.35            | 45           | 50/tube       | Tube          |
| TO-263AB  | SBLB1630CT-E3/81                | 1.35            | 81           | 800/reel      | Tape and reel |
| TO-220AB  | SBL1630CTHE3/45 <sup>(1)</sup>  | 1.85            | 45           | 50/tube       | Tube          |
| ITO-220AB | SBLF1630CTHE3/45 <sup>(1)</sup> | 1.99            | 45           | 50/tube       | Tube          |
| TO-263AB  | SBLB1630CTHE3/45 <sup>(1)</sup> | 1.35            | 45           | 50/tube       | Tube          |
| TO-263AB  | SBLB1630CTHE3/81 <sup>(1)</sup> | 1.33            | 81           | 800/reel      | Tape and reel |

**Note**

<sup>(1)</sup> AEC-Q101 qualified



## RATINGS AND CHARACTERISTICS CURVES

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

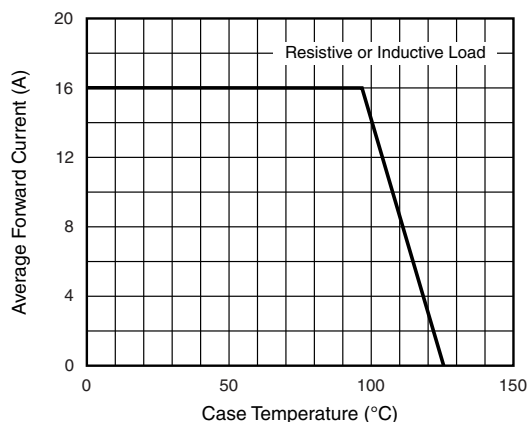


Fig. 1 - Forward Current Derating Curve

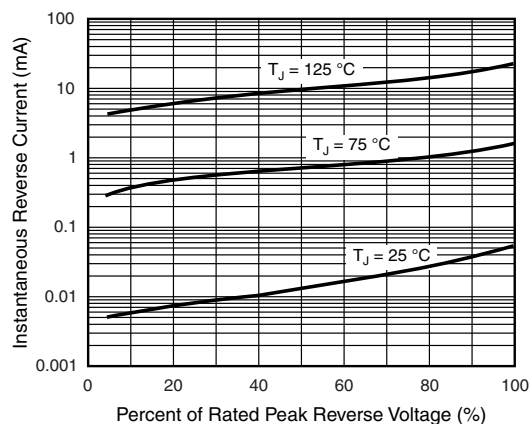


Fig. 4 - Typical Reverse Characteristics Per Diode

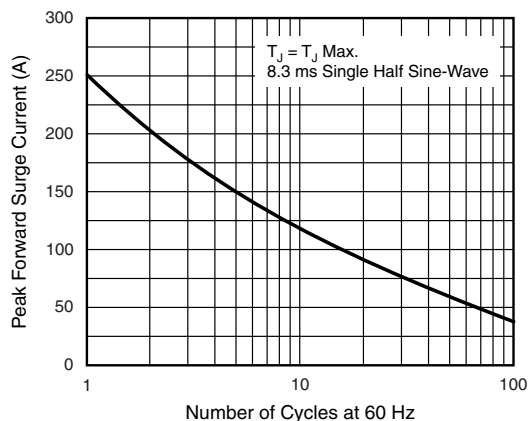


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

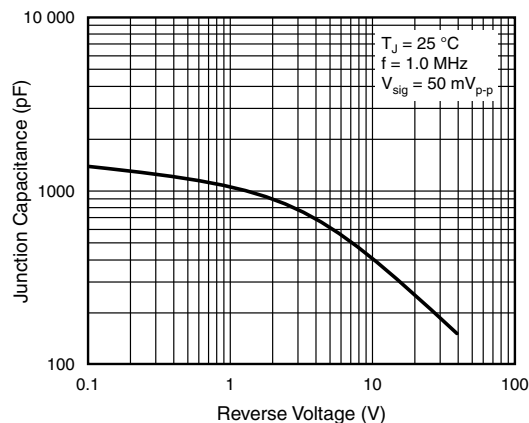


Fig. 5 - Typical Junction Capacitance Per Diode

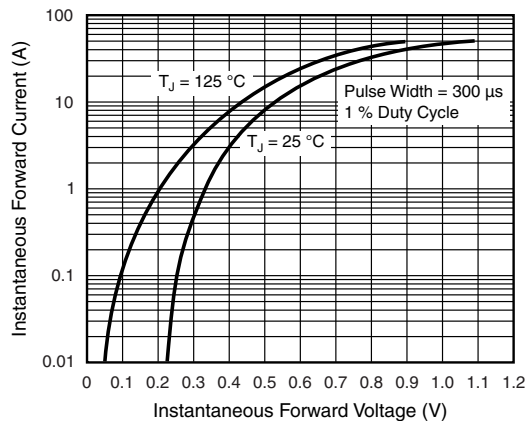


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

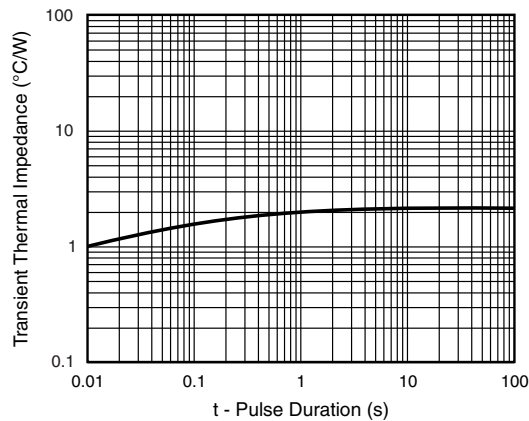
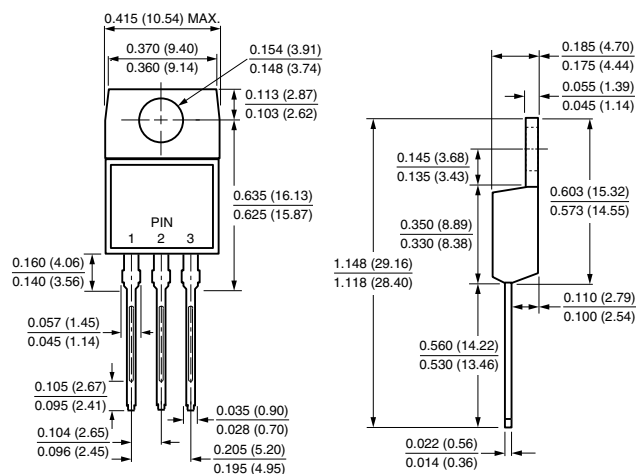


Fig. 6 - Typical Transient Thermal Impedance Per Diode

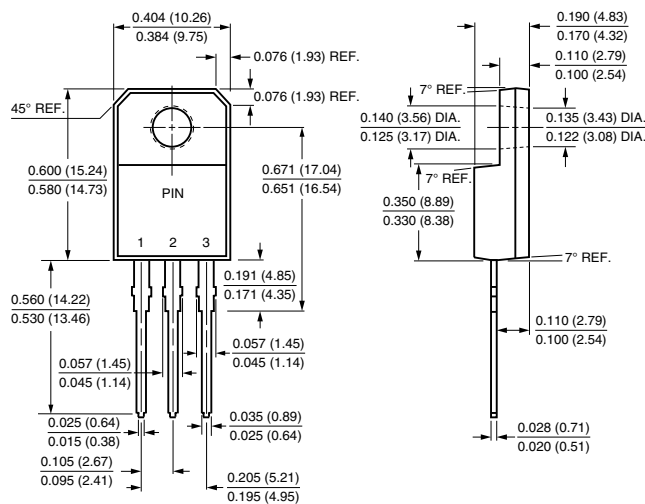


## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

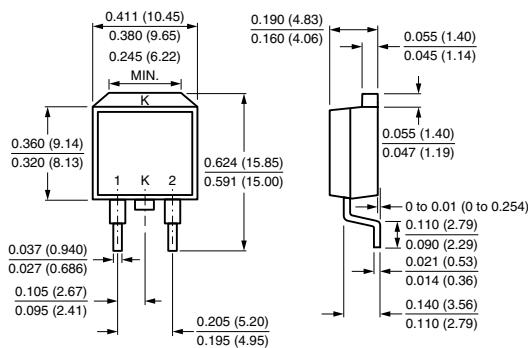
TO-220AB



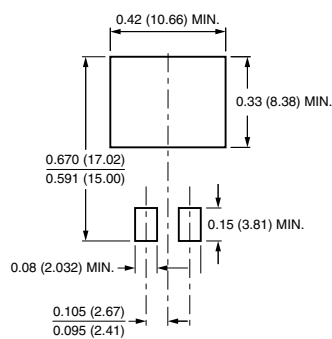
ITO-220AB



TO-263AB



Mounting Pad Layout





## Disclaimer

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