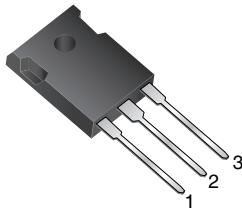


## Dual Common Cathode Schottky Rectifier


**TO-3P (TO-247AD)**


### FEATURES

- Power pack
- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max., 10 s, per JESD 22-B106
- 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 low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters, or polarity protection application.

### MECHANICAL DATA

**Case:** TO-3P (TO-247AD)

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 maximum

### PRIMARY CHARACTERISTICS

|                       |                  |
|-----------------------|------------------|
| $I_{F(AV)}$           | 20 A             |
| $V_{RRM}$             | 30 V, 40 V       |
| $I_{FSM}$             | 250 A            |
| $V_F$                 | 0.55 V           |
| $T_J$ max.            | 125 °C           |
| Package               | TO-3P (TO-247AD) |
| Circuit configuration | Common cathode   |

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

| PARAMETER  | SYMBOL         | SBL2030PT   | SBL2040PT | UNIT |
|--|----------------|-------------|-----------|------|
| Maximum repetitive peak reverse voltage  | $V_{RRM}$      | 30          | 40        | V    |
| Maximum RMS voltage  | $V_{RWM}$      | 21          | 28        | V    |
| Maximum DC blocking voltage  | $V_{DC}$       | 30          | 40        | V    |
| Maximum average forward rectified current (fig. 1)   | $I_{F(AV)}$    | 20          |           | A    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | $I_{FSM}$      | 250         |           | A    |
| Operating junction and storage temperature range   | $T_J, T_{STG}$ | -40 to +125 |           | °C   |

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

| PARAMETER  | SYMBOL      | TEST CONDITIONS       | SBL2030PT | SBL2040PT | UNIT |
|--|-------------|-----------------------|-----------|-----------|------|
| Maximum instantaneous forward voltage per diode                              | $V_F^{(1)}$ | 10 A                  | 0.55      |           | V    |
| Maximum instantaneous reverse current at rated DC blocking voltage per diode | $I_R^{(1)}$ | $T_C = 25\text{ °C}$  | 1.0       |           | mA   |
|  |             | $T_C = 100\text{ °C}$ | 50        |           | mA   |

#### Note

(1) Pulse test: 300  $\mu$ s pulse width, 1 % duty cycle



| <b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) |                 |           |           |                    |
|---|-----------------|-----------|-----------|--------------------|
| PARAMETER   | SYMBOL          | SBL2030PT | SBL2040PT | UNIT               |
| Thermal resistance, junction to case per diode  | $R_{\theta JC}$ | 1.5       |           | $^\circ\text{C/W}$ |

| <b>ORDERING INFORMATION</b> (Example) |                 |                 |              |               |               |
|---------------------------------------|-----------------|-----------------|--------------|---------------|---------------|
| PACKAGE                               | PREFERRED P/N   | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| TO-247AD                              | SBL2030PT-E3/45 | 6.13            | 45           | 30/tube       | Tube          |

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

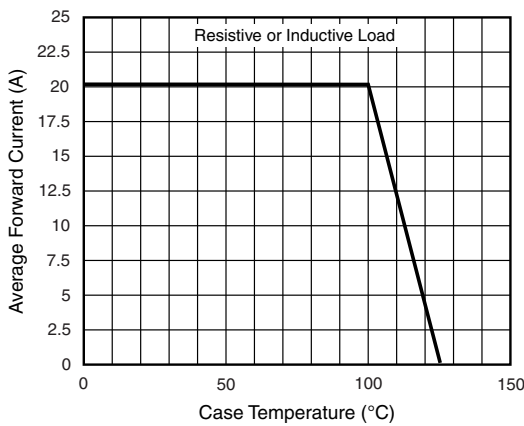


Fig. 1 - Forward Current Derating Curve

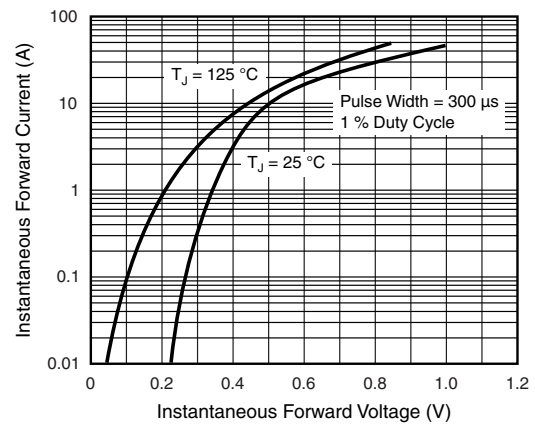


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

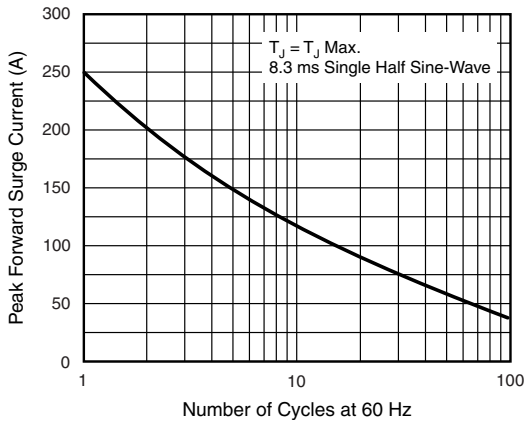


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

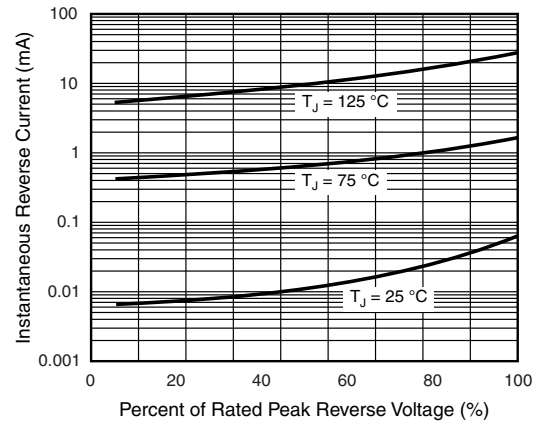


Fig. 4 - Typical Reverse Characteristics Per Diode

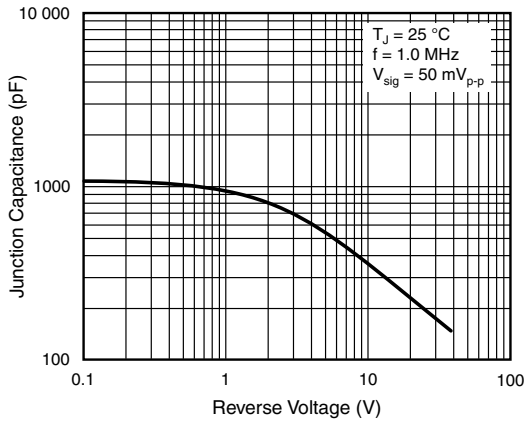


Fig. 5 - Typical Junction Capacitance Per Diode

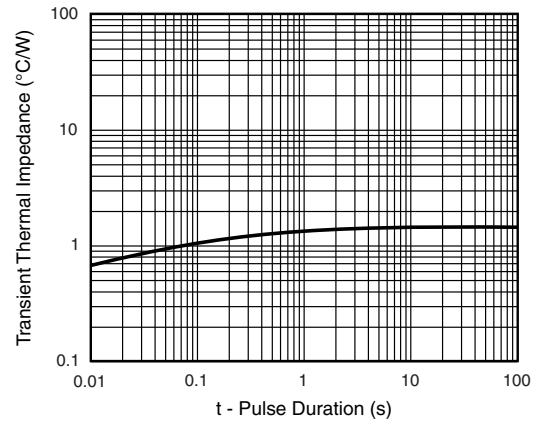
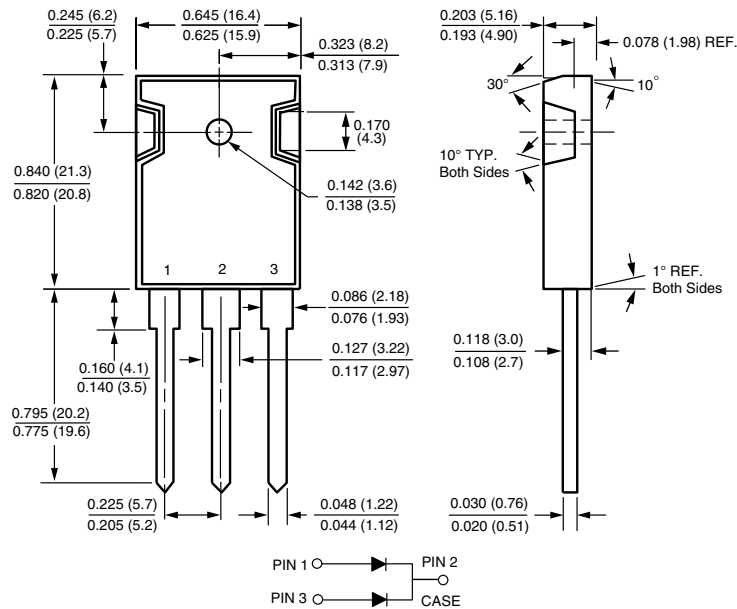


Fig. 6 - Typical Transient Thermal Impedance Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### TO-3P (TO-247AD)





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