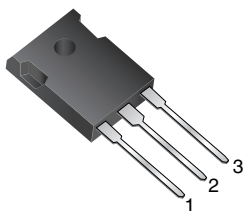


## Dual Common Cathode Schottky Rectifier


**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 260 °C, 40 s
- 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, or polarity protection application.

### MECHANICAL DATA

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

Epoxy 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

$I_{F(AV)}$	40 A
$V_{RRM}$	30 V, 40 V
$I_{FSM}$	400 A
$V_F$	0.50 V
$T_J$ max.	125 °C
Package	TO-3P (TO-247AD)
Circuit configuration	Common cathode

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

PARAMETER	SYMBOL	SBL4030PT	SBL4040PT	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	30	40	V
Maximum working peak reverse voltage	$V_{RWM}$	21	28	V
Maximum DC blocking voltage	$V_{DC}$	30	40	V
Maximum average forward rectified current at $T_C = 100$ °C	$I_{F(AV)}$	40		A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	400		A
Peak repetitive reverse surge current per diode <sup>(1)</sup>	$I_{RRM}$	2.0		A
Voltage rate of change at (rated $V_R$ )	$dV/dt$	1000		V/ $\mu$ s
Operating junction storage temperature range	$T_J, T_{STG}$	-40 to +125		°C

#### Note

<sup>(1)</sup> 2.0  $\mu$ s pulse width,  $f = 1.0$  kHz

### ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	SBL4030PT	SBL4040PT	UNIT
Maximum instantaneous forward voltage per diode <sup>(1)</sup>	I <sub>F</sub> = 20 A	T <sub>C</sub> = 25 °C	V <sub>F</sub>	0.58		V
		T <sub>C</sub> = 100 °C		0.50		
Maximum instantaneous reverse current at rated DC blocking voltage per diode <sup>(1)</sup>	T <sub>C</sub> = 25 °C	T <sub>C</sub> = 25 °C	I <sub>R</sub>	10		mA
	T <sub>C</sub> = 100 °C	T <sub>C</sub> = 100 °C		100		

#### Note

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



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

PARAMETER	SYMBOL	SBL4030PT	SBL4040PT	UNIT
Thermal resistance from junction to case per diode	$R_{\theta JC}$	1.2		$^{\circ}\text{C}/\text{W}$

## ORDERING INFORMATION (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-247AD	SBL4030PT-E3/45	6.13	45	30/tube	Tube

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

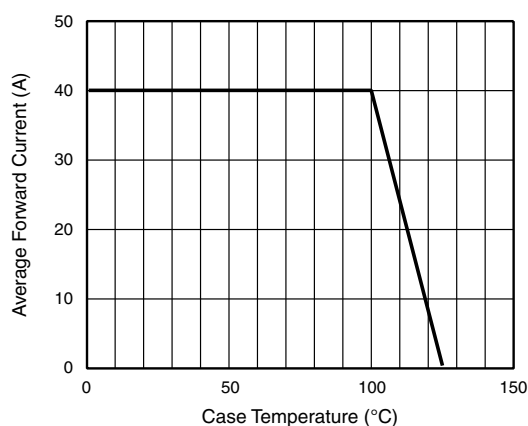


Fig. 1 - Forward Current Derating Curve

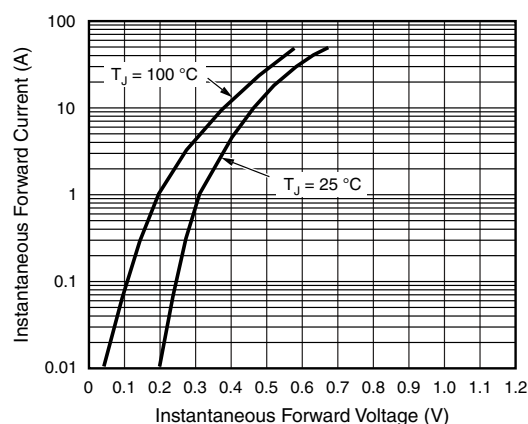


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

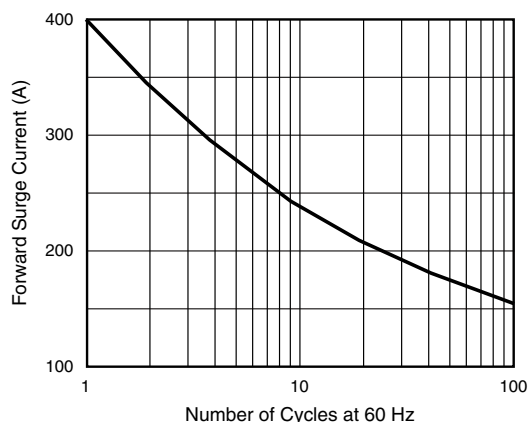


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

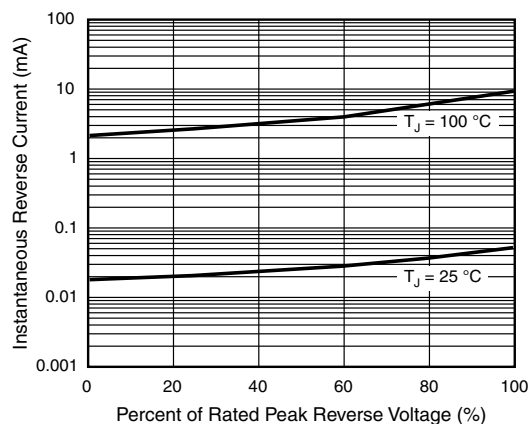


Fig. 4 - Typical Reverse Characteristics Per Diode

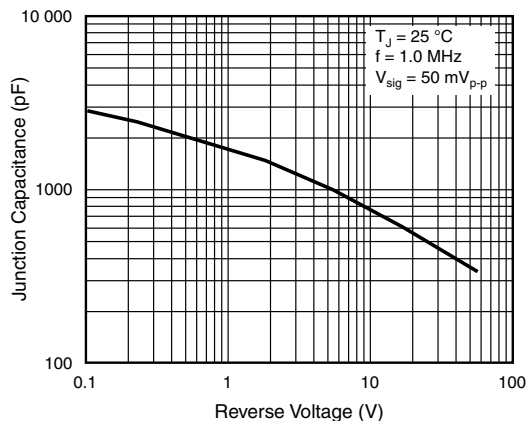


Fig. 5 - Typical Junction Capacitance Per Diode

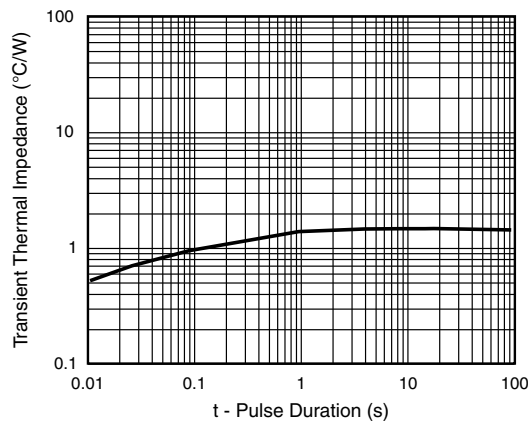
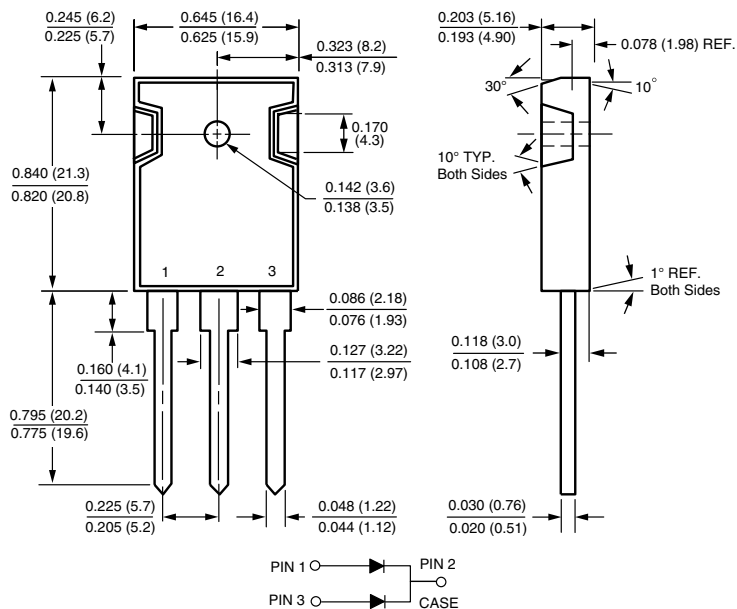


Fig. 6 - Typical Transient Thermal Impedance Per Diode

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

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




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