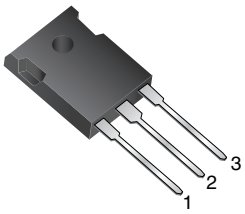
Dual Common Cathode Schottky Rectifier



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

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)

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 (1)	I_{RRM}	2.0		A
Voltage rate of change at (rated V_R)	dV/dt	1000		V/µs
Operating junction storage temperature range	T_J, T_{STG}	-40 to +125		°C

Note

(1) 2.0 µs 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 (1)	I_F = 20 A	T_C = 25 °C	V_F	0.58		V
		T_C = 100 °C		0.50		
Maximum instantaneous reverse current at rated DC blocking voltage per diode (1)	T_C = 25 °C	T_C = 25 °C	I_R	10		mA
	T_C = 100 °C	T_C = 100 °C		100		

Note

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

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THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SBL4030PT	SBL4040PT	UNIT
Thermal resistance from junction to case per diode	$R_{\theta JC}$	1.2		°C/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 °C unless otherwise noted)

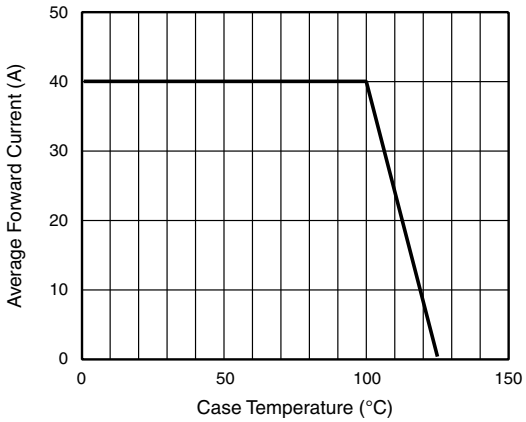

Fig. 1 - Forward Current Derating Curve

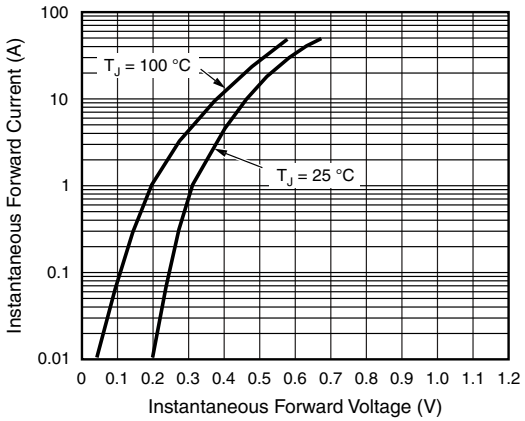

Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

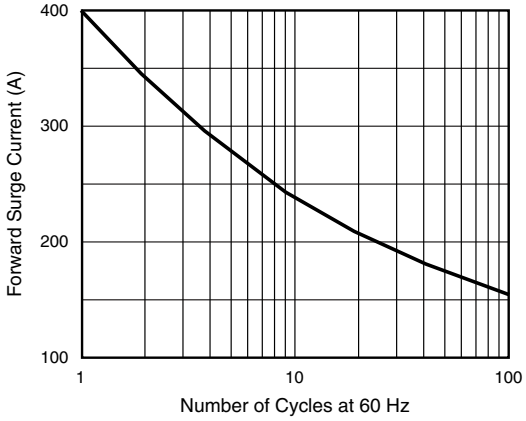

Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

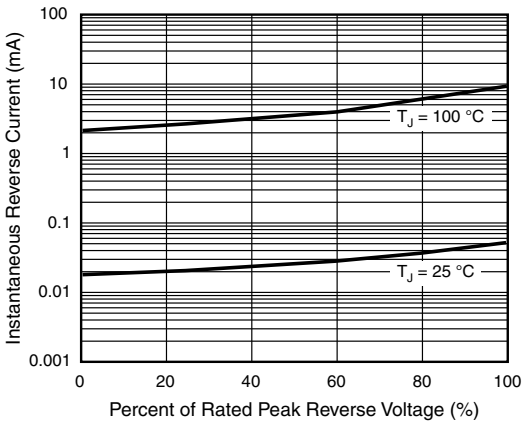

Fig. 4 - Typical Reverse Characteristics Per Diode

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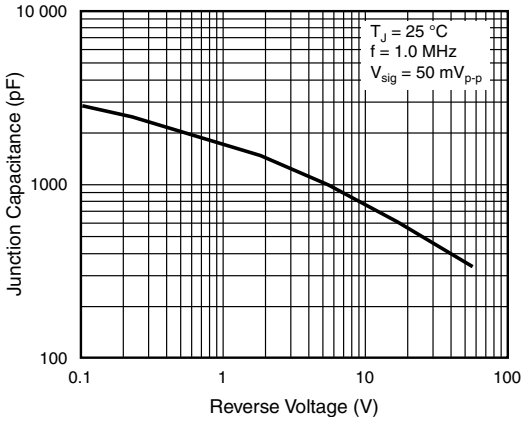


Fig. 5 - Typical Junction Capacitance Per Diode

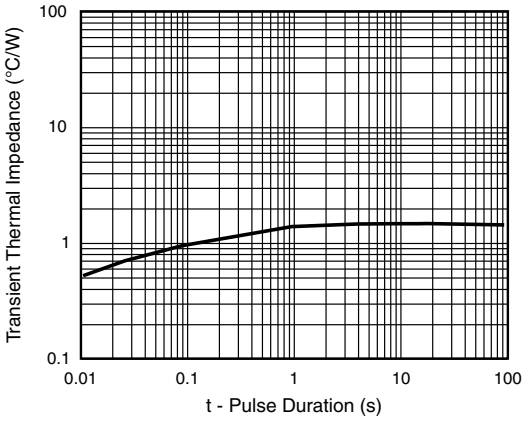
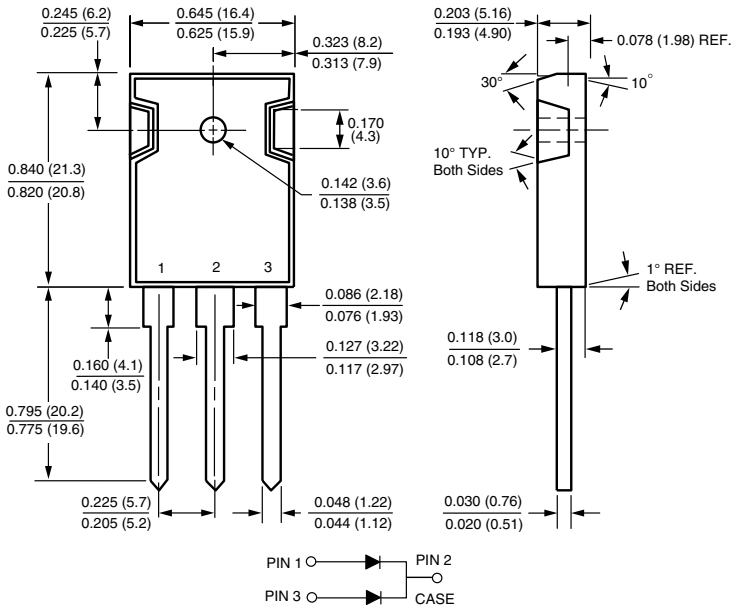


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-3P (TO-247AD)



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