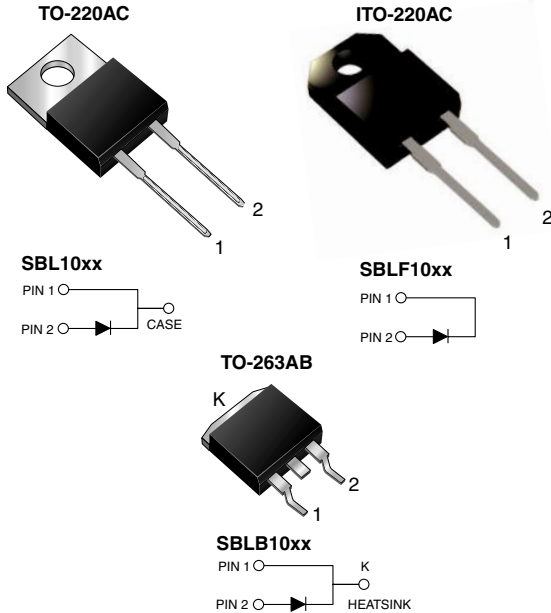


Schottky Barrier Rectifier



FEATURES

- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020C (for TO-263AB package)
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



TYPICAL APPLICATIONS

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

MECHANICAL DATA

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

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

MAJOR RATINGS AND CHARACTERISTICS

$I_{F(AV)}$	10 A
V_{RRM}	30 V, 40 V
I_{FSM}	250 A
V_F	0.60 V
$T_j \text{ max}$	125 °C

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

PARAMETER	SYMBOL	SBL1030	SBL1040	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	30	40	V
Working peak reverse voltage	V_{RWM}	21	28	V
Maximum DC blocking voltage	V_{DC}	30	40	V
Maximum average forward rectified current at $T_C = 110 \text{ }^\circ\text{C}$	$I_{F(AV)}$	10		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	250		A
Operating junction and storage temperature range	T_J, T_{STG}	- 40 to + 125		°C
Isolation voltage (ITO-220AC only) From terminal to heatsink $t = 1$ minute	V_{AC}	1500		V



ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	at 10 A	V_F	0.6	V
Maximum instantaneous reverse current at DC blocking voltage ⁽¹⁾	$T_C = 25\text{ }^\circ\text{C}$ $T_C = 100\text{ }^\circ\text{C}$	I_R	1.0 50	mA

Note:

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

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 leg	$R_{\theta JC}$	2.0	5.0	2.0	$^\circ\text{C/W}$

ORDERING INFORMATION					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AC	SBL1030-E3/45	1.80	45	50/Tube	Tube
ITO-220AC	SBLF1030-E3/45	1.94	45	50/Tube	Tube
TO-263AB	SBLB1030-E3/45	1.33	45	50/Tube	Tube
TO-263AB	SBLB1030-E3/81	1.33	81	800/Reel	Tape Reel

RATINGS AND CHARACTERISTICS CURVES

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

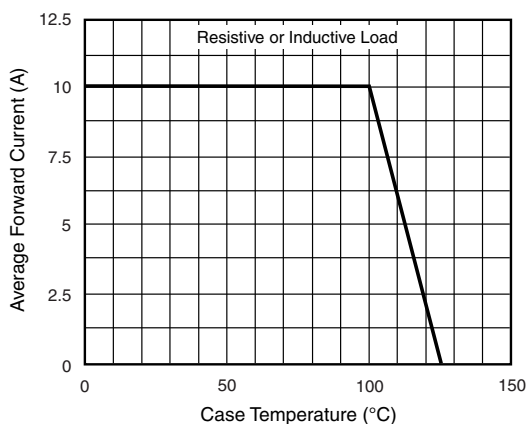


Figure 1. Forward Current Derating Curve

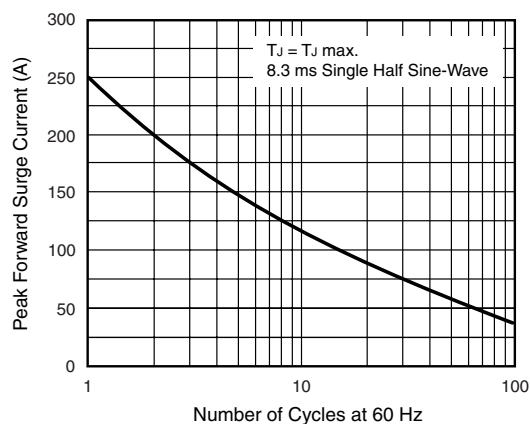


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

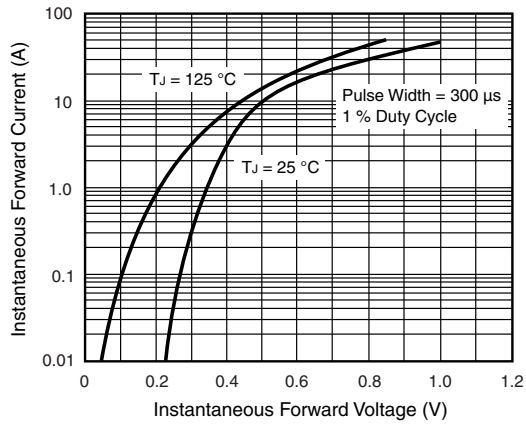


Figure 3. Typical Instantaneous Forward Characteristics

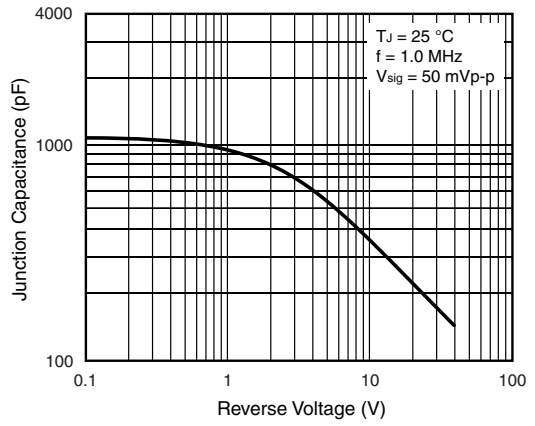


Figure 5. Typical Junction Capacitance

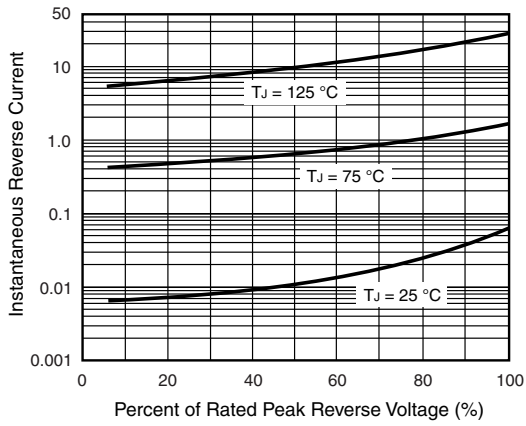


Figure 4. Typical Reverse Characteristics

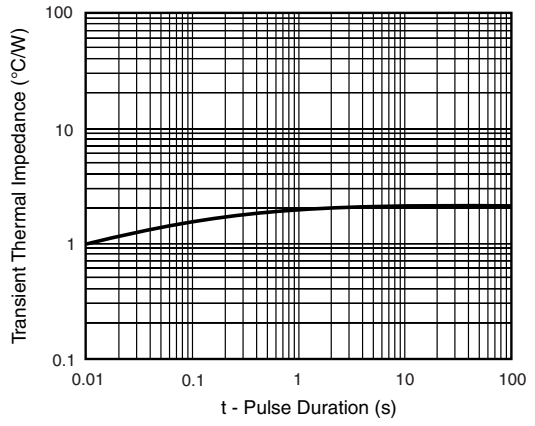


Figure 6. Typical Transient Thermal Impedance

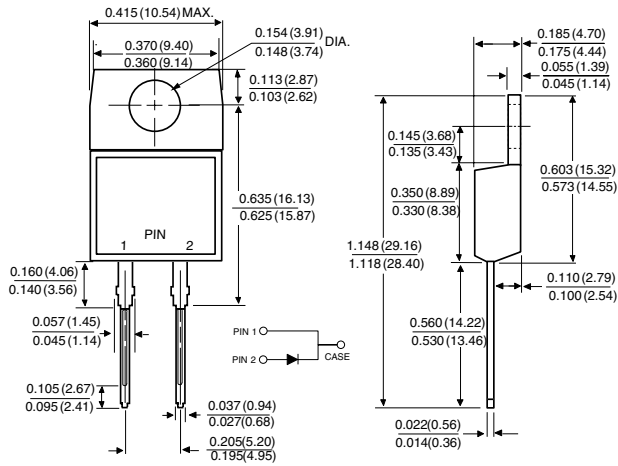
SBL(F,B)1030 & SBL(F,B)1040

Vishay General Semiconductor

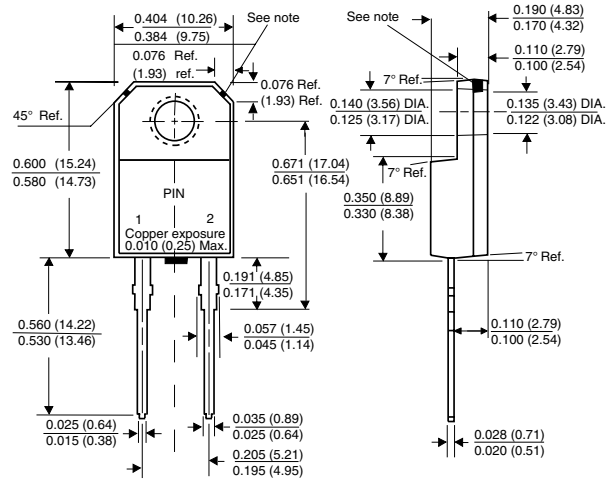


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AC

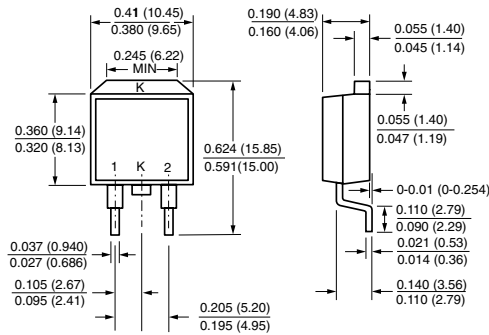


ITO-220AC

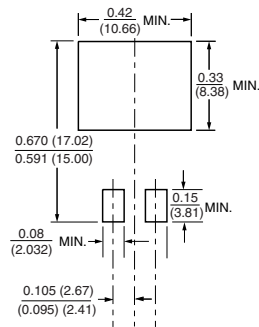


Note: Copper exposure is allowable for 0.005 (0.13) Max. from the body

TO-263AB



Mounting Pad Layout





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