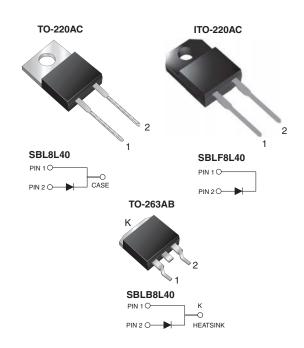
www.vishay.com

SBL8L40, SBLF8L40, SBLB8L40

Vishay General Semiconductor

Schottky Barrier Rectifier



PRIMARY CHARACTERISTICS					
I _{F(AV)}	8 A				
V _{RRM}	40 V				
I _{FSM}	250 A				
V _F	0.41 V				
T _J max.	125 °C				
Package	TO-220AC, ITO-220AC, TO-263AB				
Diode variations	Single				

FEATURES

- Power pack
- · 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, LF maximum peak of 245 °C (for TO-263AB package)
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AC and ITO-220AC package)
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see <u>www.vishay.com/doc?99912</u>

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-220AC, ITO-220AC, 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

MAXIMUM RATINGS ($T_C = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	SYMBOL	SBL8L40	SBLF8L40	SBLB8L40	UNIT		
Maximum repetitive peak reverse voltage	V _{RRM}	40			V		
Working peak reverse voltage	V _{RWM}	28					
Maximum DC blocking voltage	V _{DC}	40					
Maximum average forward rectified current at (fig. 1)	I _{F(AV)}	8			A		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per leg	I _{FSM}	250					
Peak repetitive reverse current at t _p = 2 ms, 1 kHz	I _{RRM}	1.0					
Voltage rate of change (rated V _R)	dV/dt	10 000		V/µs			
Operating junction and storage temperature range	T _J , T _{STG}	- 65 to + 125		°C			
Isolation voltage (ITO-220AC only) from terminal to heatsink t = 1 min	V _{AC}	1500		V			





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ELECTRICAL CHARACTERISTICS ($T_C = 25 \degree C$ unless otherwise noted)						
PARAMETER	SYMBOL	TEST CON	IDITIONS	VALUE	UNIT	
Maximum instantaneous forward voltage	V _F (1)	I _F = 4 A	T _J = 25 °C	0.44		
		I _F = 4 A	T _J = 125 °C	0.35	V	
		I _F = 8 A	T _J = 25 °C	0.50	v	
		I _F = 8 A	T _J = 125 °C	0.41		
Maximum instantaneous reverse current at DC blocking voltage	I _R (2)	Rated V _R	T _J = 25 °C	1.0	mA	
			T _J = 100 °C	75		

Notes

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

 $^{(2)}$ Pulse test: Pulse width $\leq 40\ ms$

THERMAL CHARACTERISTICS ($T_C = 25$ °C unless otherwise noted)					
PARAMETER	SYMBOL	SBL	SBLF	SBLB	UNIT
Typical thermal resistance from junction to case per leg	$R_{ ext{ heta}JC}$	3.2	4.0	3.2	°C/W

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
TO-220AC	SBL8L40-E3/45	1.80	45	50/tube	Tube		
ITO-220AC	SBLF8L40-E3/45	1.94	45	50/tube	Tube		
TO-263AB	SBLB8L40-E3/45	1.33	45	50/tube	Tube		
TO-263AB	SBLB8L40-E3/81	1.33	81	800/reel	Tape and reel		
TO-220AC	SBL8L40HE3/45 ⁽¹⁾	1.80	45	50/tube	Tube		
ITO-220AC	SBLF8L40HE3/45 (1)	1.94	45	50/tube	Tube		
TO-263AB	SBLB8L40HE3/45 ⁽¹⁾	1.33	45	50/tube	Tube		
TO-263AB	SBLB8L40HE3/81 (1)	1.33	81	800/reel	Tape and reel		

Note

(1) AEC-Q101 qualified



SBL8L40, SBLF8L40, SBLB8L40

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RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

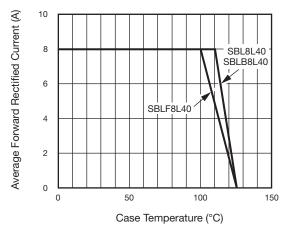


Fig. 1 - Maximum Forward Current Derating Curve

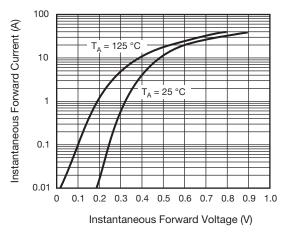


Fig. 2 - Typical Instantaneous Forward Characteristics

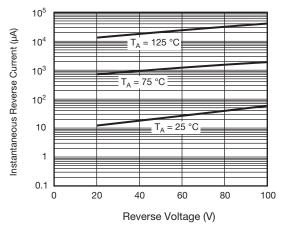


Fig. 3 - Typical Reverse Characteristics

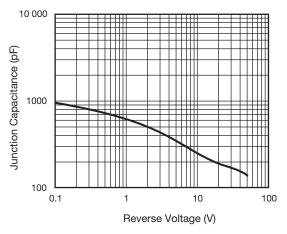


Fig. 4 - Typical Junction Capacitance

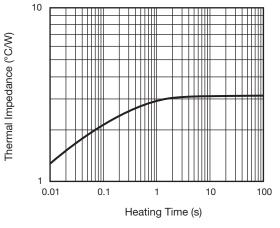


Fig. 5 - Transient Thermal Impedance

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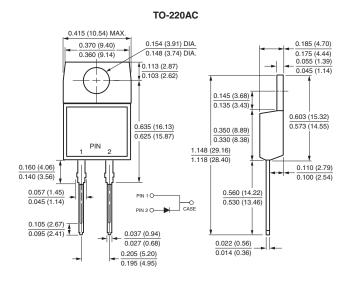
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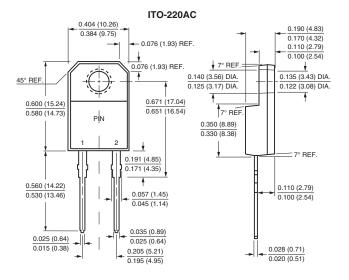


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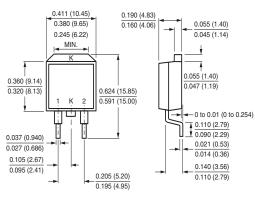
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

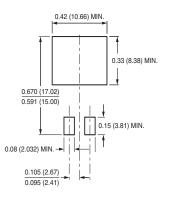




TO-263AB



Mounting Pad Layout



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