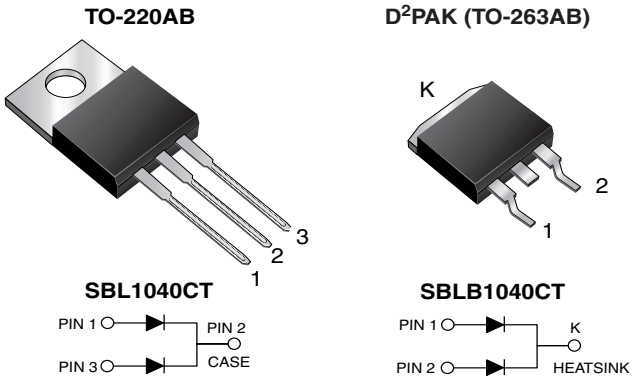
Dual Common Cathode Schottky Rectifier



FEATURES

- Power pack
- Guardring for overvoltage protection
- Low power loss, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for D²PAK (TO-263AB) package)
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AB package)
- AEC-Q101 qualified available:
- - Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

HALOGEN FREE Available

LINKS TO ADDITIONAL RESOURCES

3D Models

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 5 A
V_{RRM}	40 V
I_{FSM}	175 A
V_F	0.55 V
T_J max.	125 °C
Package	TO-220AB, D²PAK (TO-263AB)
Circuit configuration	Common cathode

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-220AB, D²PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/N-M3 - RoHS-compliant, halogen-free, commercial grade

Base P/NHM3 - RoHS-compliant, halogen-free, AEC-Q101 qualified

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 and M3 suffix meets JESD 201 class 1A whisker test, HM3 suffix meets JESD 201 class 2 whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs maximum

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MAXIMUM RATINGS (T_C = 25 °C unless otherwise noted)				
PARAMETER		**SYMBOL**	**SBL1040CT SBLB1040CT**	**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 T_C = 107 °C	total device	$I_{F(AV)}$	10	A
	per diode		5.0	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I_{FSM}	175	
Operating junction and storage temperature range		T_J, T_{STG}	-40 to +125	°C

ELECTRICAL CHARACTERISTICS (T_C = 25 °C unless otherwise noted)					
PARAMETER	**SYMBOL**	**TEST CONDITIONS**		**VALUE**	**UNIT**
Maximum instantaneous forward voltage per diode	V_F (1)	5.0 A		0.55	V
Maximum instantaneous reverse current at DC blocking voltage per diode	I_R (2)	Rated V_R	T_C = 25 °C	0.5	mA
			T_C = 100 °C	50	

Notes

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

(2) Pulse test: pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_C = 25 °C unless otherwise noted)				
PARAMETER	**SYMBOL**	**SBL**	**SBLB**	**UNIT**
Typical thermal resistance per diode	$R_{\theta JC}$	3.0	3.0	°C/W

ORDERING INFORMATION (Example)					
PACKAGE	**PREFERRED P/N**	**UNIT WEIGHT (g)**	**PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
TO-220AB	SBL1040CT-E3/45	1.85	45	50/tube	Tube
D^2PAK (TO-263AB)	SBLB1040CT-M3/I	1.35	I	800/reel	Tape and reel
D^2PAK (TO-263AB)	SBLB1040CTHM3/I (1)	1.35	I	800/reel	Tape and reel

Note

(1) AEC-Q101 qualified, available in D^2PAK (TO-263AB) package only

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RATINGS AND CHARACTERISTICS CURVES (T_C = 25 °C unless otherwise noted)

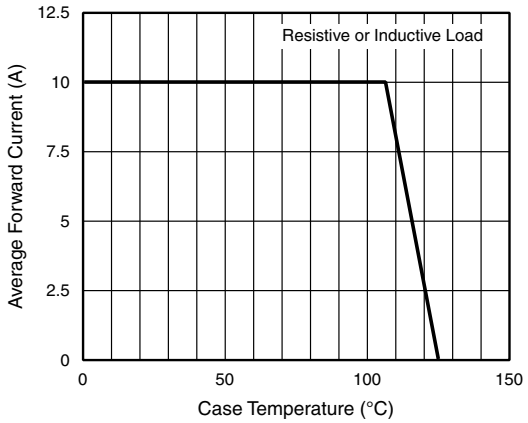

Fig. 1 - Forward Current Derating Curve

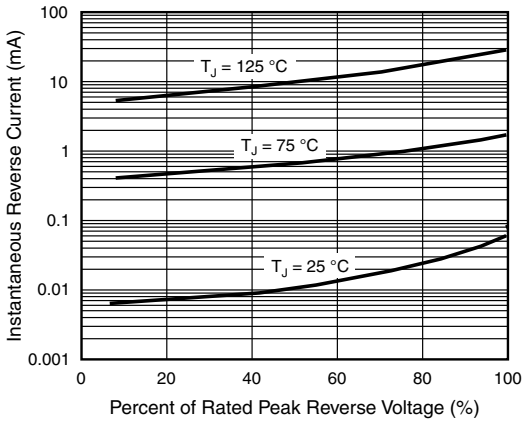

Fig. 4 - Typical Reverse Characteristics Per Diode

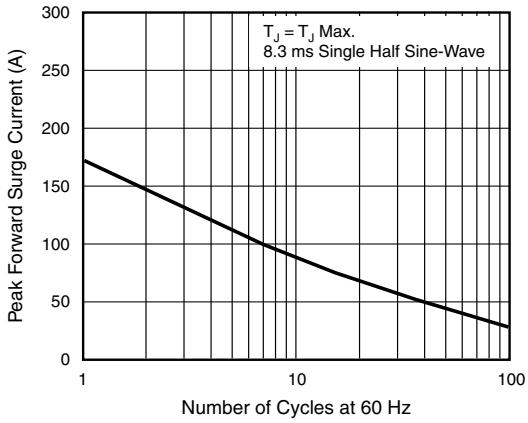

Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

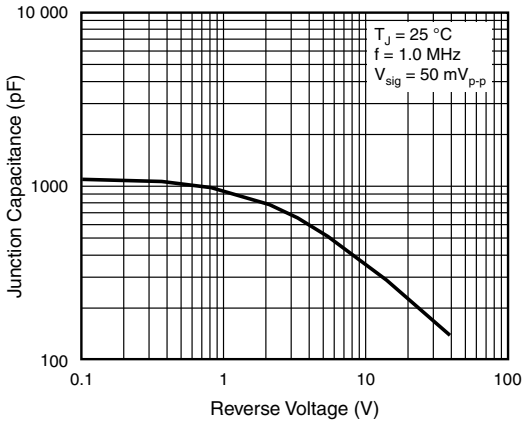

Fig. 5 - Typical Junction Capacitance Per Diode

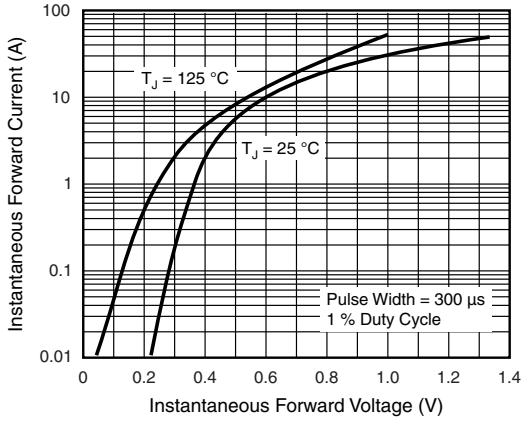

Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

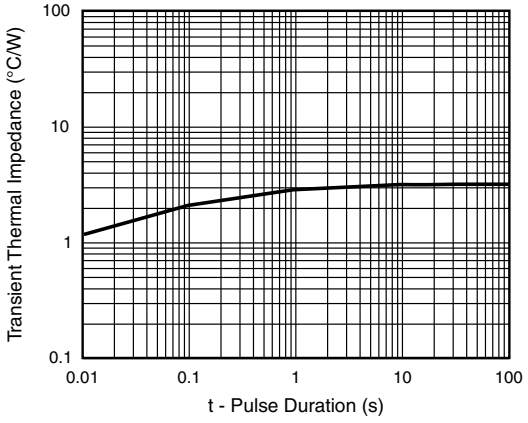

Fig. 6 - Typical Transient Thermal Impedance Per Diode

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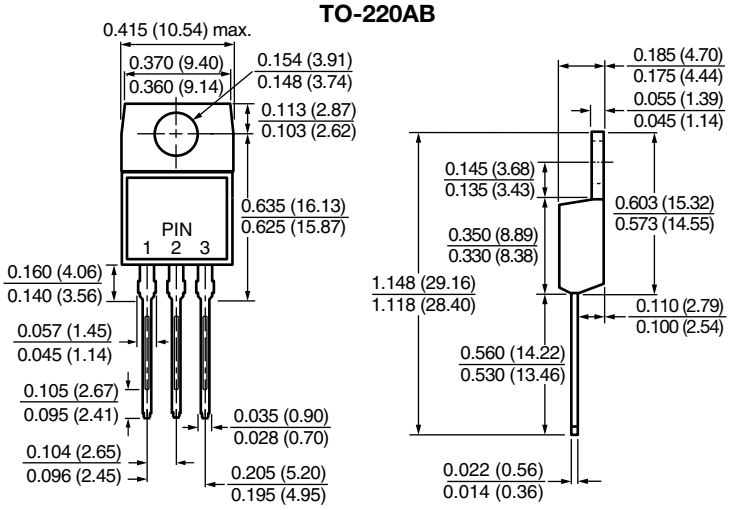
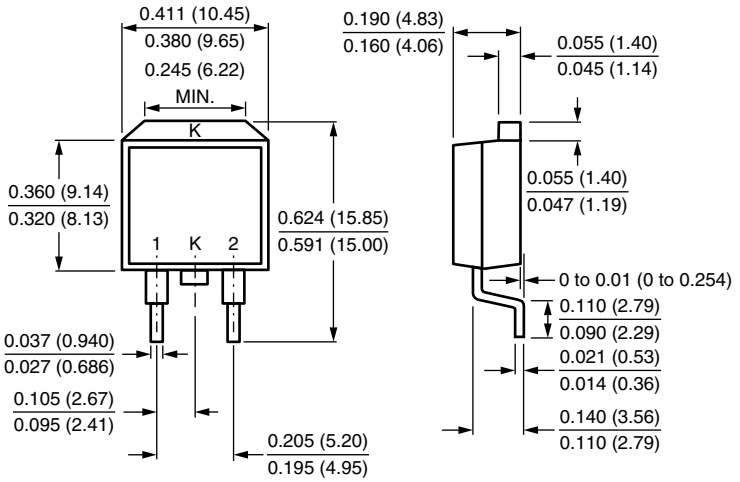
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

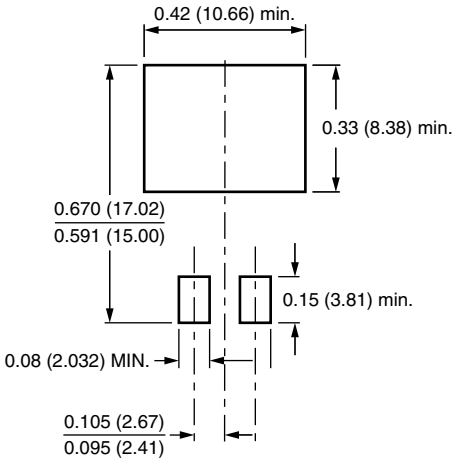
TO-220AB



D²PAK (TO-263AB)



Mounting Pad Layout



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