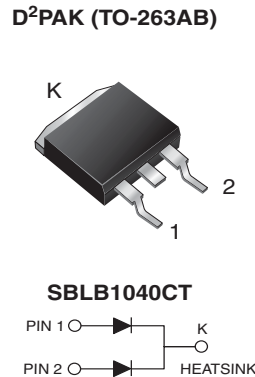
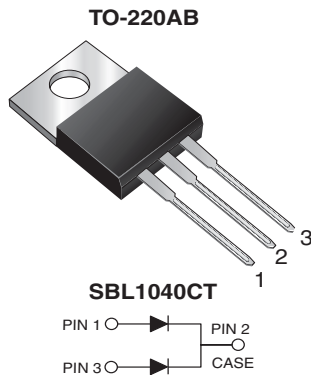


## Dual Common Cathode Schottky Rectifier



### 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 D<sup>2</sup>PAK (TO-263AB) package)
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AB package)
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### DESIGN SUPPORT TOOLS

[click logo to get started](#)

**3D**  
Models  
Available

### TYPICAL APPLICATIONS

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

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, D <sup>2</sup> PAK (TO-263AB)
Circuit configuration	Common cathode

### MECHANICAL DATA

**Case:** TO-220AB, D<sup>2</sup>PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade  
Base P/NHE3\_X - RoHS-compliant, AEC-Q101 qualified  
("X" denotes revision code, e.g. A, B, ...)

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



### ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	VALUE	UNIT
Maximum instantaneous forward voltage per diode	V <sub>F</sub> <sup>(1)</sup>	5.0 A	0.55	V
Maximum instantaneous reverse current at DC blocking voltage per diode	I <sub>R</sub> <sup>(2)</sup>	Rated V <sub>R</sub>	T <sub>C</sub> = 25 °C	0.5
			T <sub>C</sub> = 100 °C	50

#### Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: pulse width ≤ 40 ms

### THERMAL CHARACTERISTICS (T<sub>C</sub> = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	SBL	SBLB	UNIT
Typical thermal resistance per diode	R <sub>θJC</sub>	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
TO-263AB	SBLB1040CT-E3/45	1.35	45	50/tube	Tube
TO-263AB	SBLB1040CT-E3/81	1.35	81	800/reel	Tape and reel
TO-263AB	SBLB1040CTHE3_B/P <sup>(1)</sup>	1.35	P	50/tube	Tube
TO-263AB	SBLB1040CTHE3_B/I <sup>(1)</sup>	1.35	I	800/reel	Tape and reel

#### Note

- (1) AEC-Q101 qualified, available in D<sup>2</sup>PAK (TO-263AB) package only

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

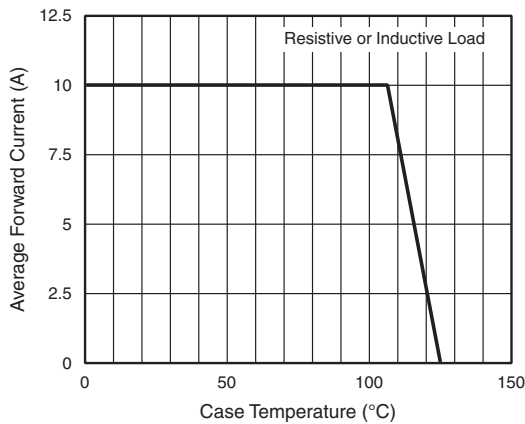


Fig. 1 - Forward Current Derating Curve

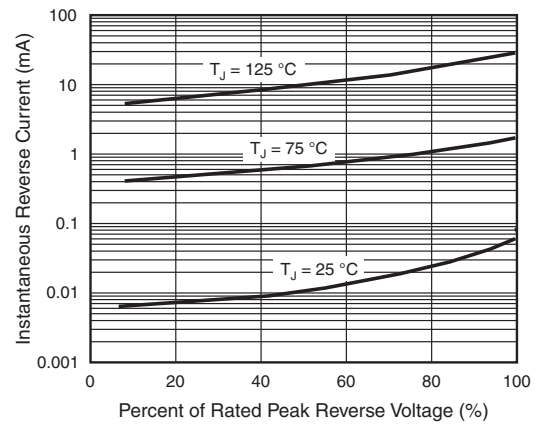


Fig. 4 - Typical Reverse Characteristics Per Diode

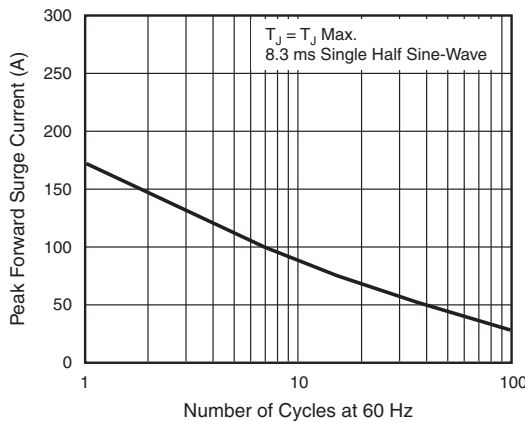


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

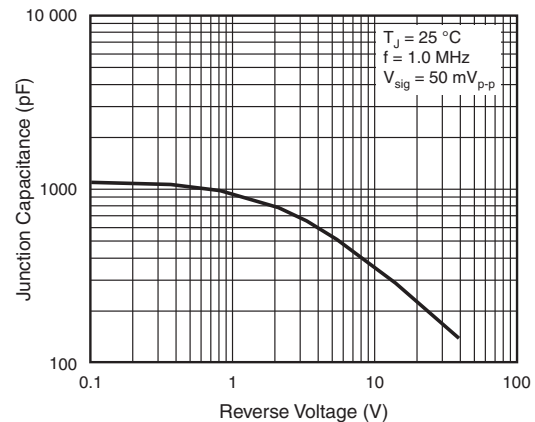


Fig. 5 - Typical Junction Capacitance Per Diode

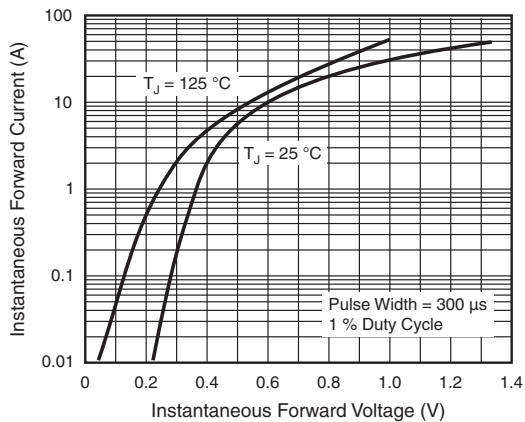


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

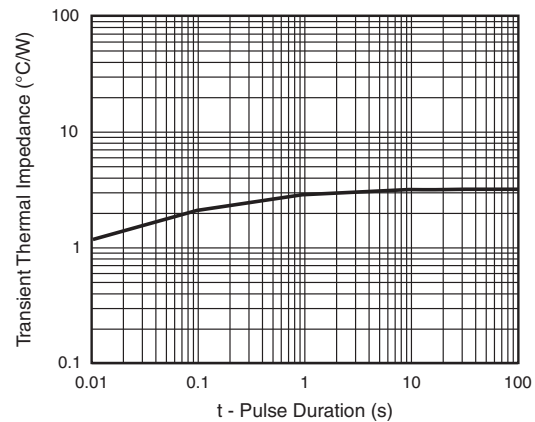
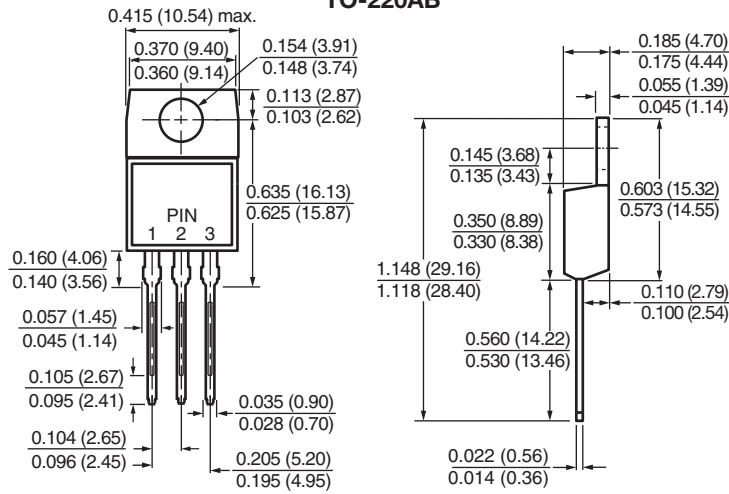


Fig. 6 - Typical Transient Thermal Impedance Per Diode

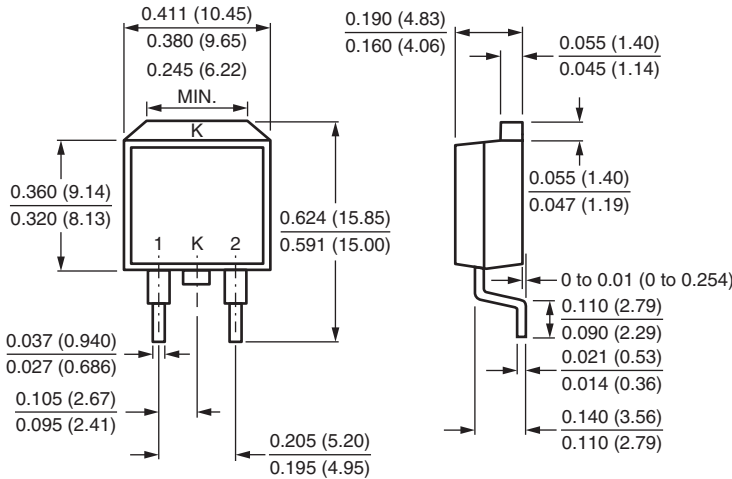


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

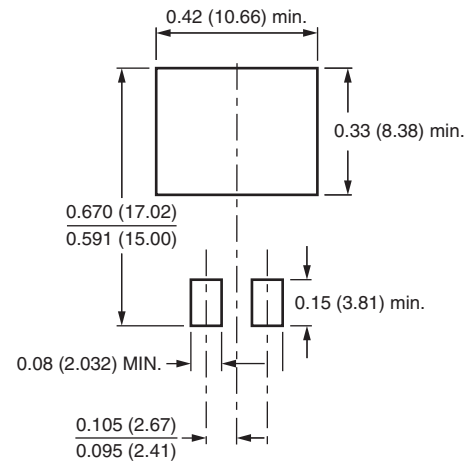
TO-220AB



D<sup>2</sup>PAK (TO-263AB)



Mounting Pad Layout





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