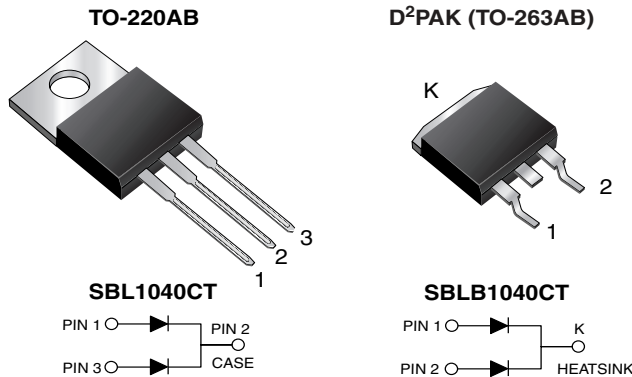




**THE DATASHEET OF  
SBL1030CTHE3/45**



## Dual Common Cathode Schottky Rectifier



### LINKS TO ADDITIONAL RESOURCES



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

### 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 available:
  - - Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
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.

### 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/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



<b>MAXIMUM RATINGS</b> ( $T_C = 25\text{ }^\circ\text{C}$ 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 $T_C = 107\text{ }^\circ\text{C}$	total device	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		$^\circ\text{C}$

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_C = 25\text{ }^\circ\text{C}$ 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 $V_R$	$T_C = 25\text{ }^\circ\text{C}$	0.5	mA
			$T_C = 100\text{ }^\circ\text{C}$	50	

**Notes**(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle(2) Pulse test: pulse width  $\leq 40\text{ ms}$ 

<b>THERMAL CHARACTERISTICS</b> ( $T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	SBL	SBLB	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	3.0	3.0	$^\circ\text{C}/\text{W}$

<b>ORDERING INFORMATION</b> (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 <sup>2</sup> PAK (TO-263AB)	SBLB1040CT-M3/I	1.35	I	800/reel	Tape and reel
D <sup>2</sup> PAK (TO-263AB)	SBLB1040CTHM3/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)

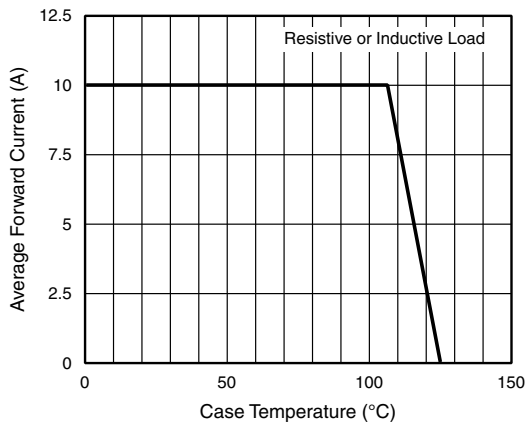


Fig. 1 - Forward Current Derating Curve

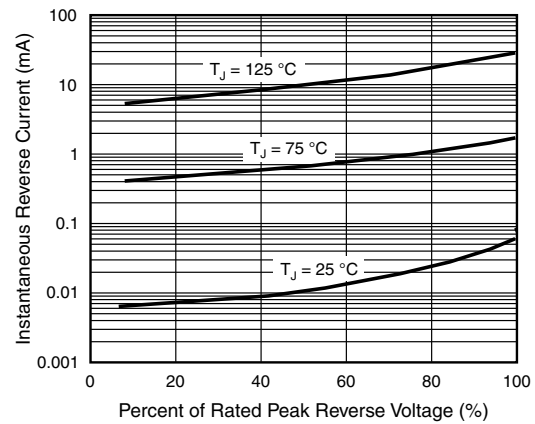


Fig. 4 - Typical Reverse Characteristics Per Diode

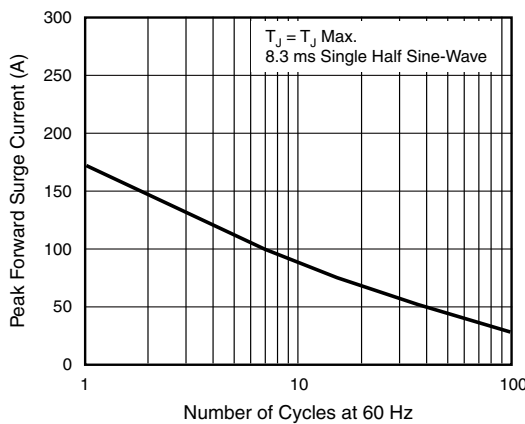


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

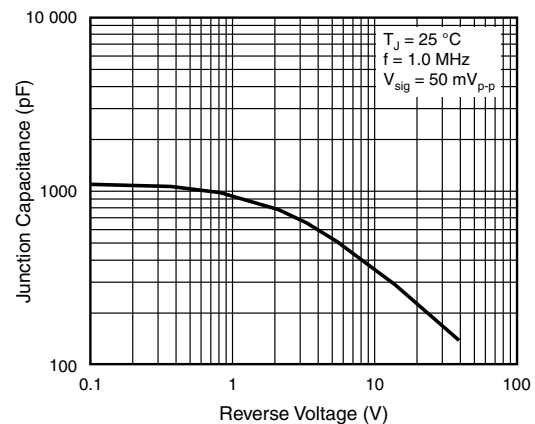


Fig. 5 - Typical Junction Capacitance Per Diode

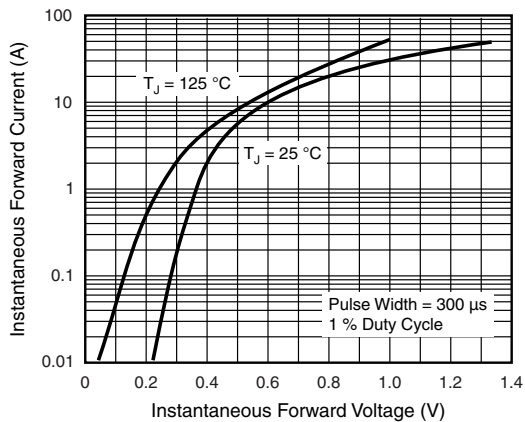


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

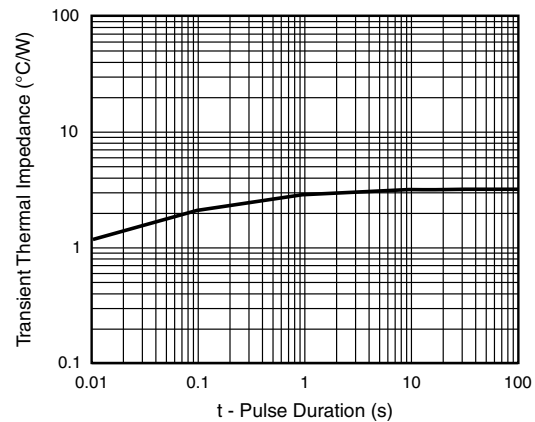
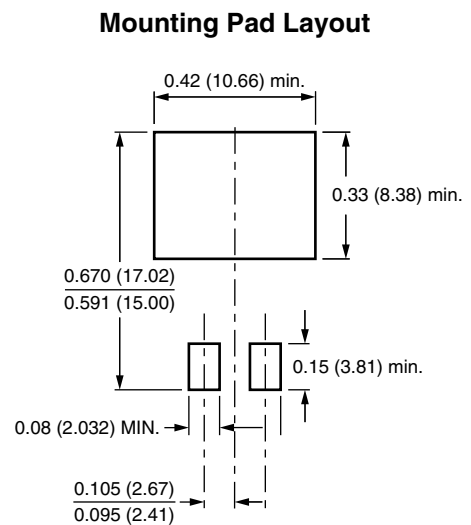
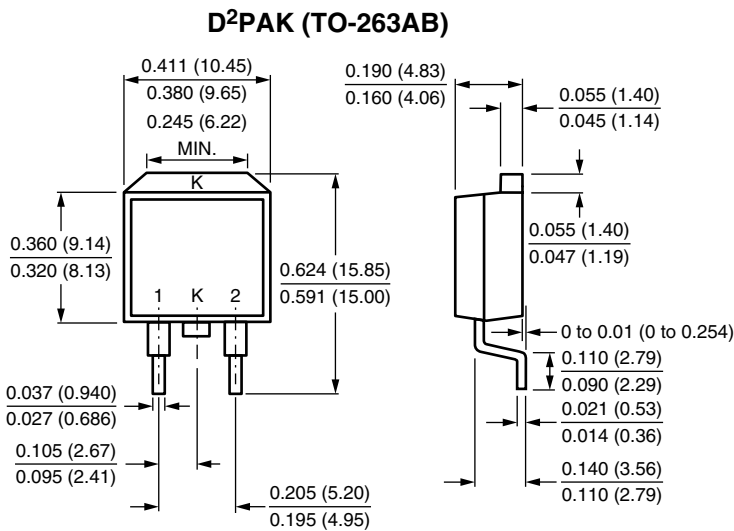
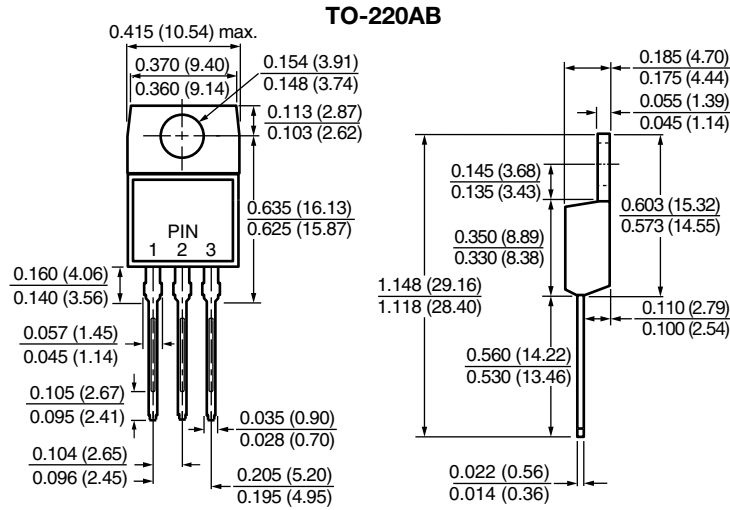


Fig. 6 - Typical Transient Thermal Impedance Per Diode



### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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