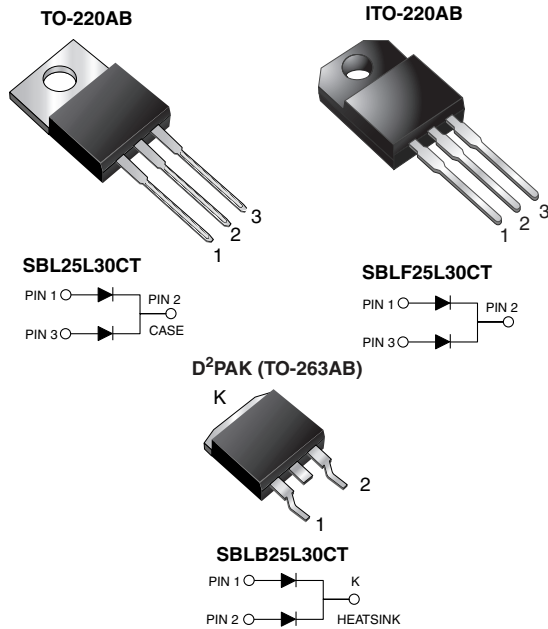




**THE DATASHEET OF  
SBL25L30CTHE3/45**



## Dual Low $V_F$ Common Cathode Schottky Rectifier



### FEATURES

- Power pack
- Low power loss, high efficiency
- Very 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 and ITO-220AB package)
- AEC-Q101 qualified available  
- Automotive ordering code:  
Base P/NHE3 (for ITO-220AB)  
Base P/NHM3 (for D<sup>2</sup>PAK (TO-263AB) package)
- 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 inverters, switching mode power supplies, freewheeling diodes, OR-ing diodes, DC/DC converters, and polarity protection application.

### MECHANICAL DATA

**Case:** TO-220AB, ITO-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, ...)

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, HE3 and HM3 suffix meets JESD 201 class 2 whisker test

**Polarity:** as marked

**Mounting Torque:** 10 in-lbs maximum

### LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 12.5 A
$V_{RRM}$	30 V
$I_{FSM}$	180 A
$V_F$	0.39 V
$T_J$ max.	150 °C
Package	TO-220AB, ITO-220AB, D <sup>2</sup> PAK (TO-263AB)
Circuit configuration	Common cathode



<b>MAXIMUM RATINGS</b> ( $T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	SBL25L30CT SBLB25L30CT SBLF25L30CT	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	30	V
Maximum average forward rectified current at $T_C = 95\text{ }^\circ\text{C}$	total device $I_{F(AV)}$ per diode	25	A
		12.5	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	180	
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$
Isolation voltage (ITO-220AB only) from terminal to heatsink, $t = 1\text{ min}$	$V_{AC}$	1500	V

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	TEST CONDITIONS	VALUE	UNIT	
Maximum instantaneous forward voltage	$V_F^{(1)}$	12.5 A	$T_J = 125\text{ }^\circ\text{C}$	0.39	V
			$T_J = 25\text{ }^\circ\text{C}$	0.49	
Maximum instantaneous reverse current at DC blocking voltage per diode	$I_R^{(2)}$	Rated $V_R$	$T_J = 25\text{ }^\circ\text{C}$	0.90	mA
			$T_J = 100\text{ }^\circ\text{C}$	50	
			$T_J = 125\text{ }^\circ\text{C}$	100	

**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	SBL25L30CT	SBLF25L30CT	SBLB25L30CT	UNIT
Typical thermal resistance from junction to case per diode	$R_{\theta JC}$	1.5	4.0	1.5	$^\circ\text{C/W}$

<b>ORDERING INFORMATION</b>					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	SBL25L30CT-E3/45	1.85	45	50/tube	Tube
ITO-220AB	SBLF25L30CT-E3/45	1.99	45	50/tube	Tube
D <sup>2</sup> PAK (TO-263AB)	SBLB25L30CT-M3/I	1.35	I	800/reel	Tape and reel
ITO-220AB	SBLF25L30CTHE3_A/P <sup>(1)</sup>	1.99	P	50/tube	Tube
D <sup>2</sup> PAK (TO-263AB)	SBLB25L30CTHM3/I <sup>(1)</sup>	1.35	I	800/reel	Tape and reel

**Note**

- (1) AEC-Q101 qualified, available in ITO-220AB and D<sup>2</sup>PAK (TO-263AB)



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

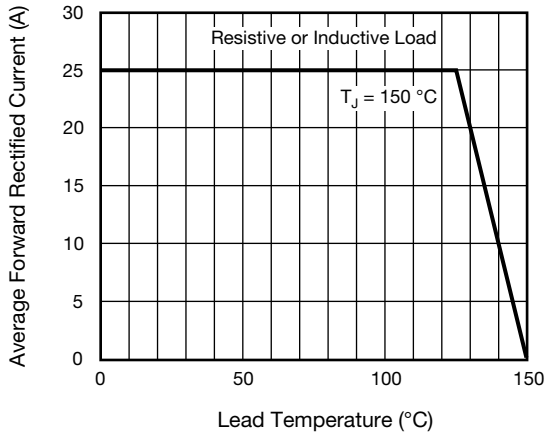


Fig. 1 - Forward Current Derating Curve

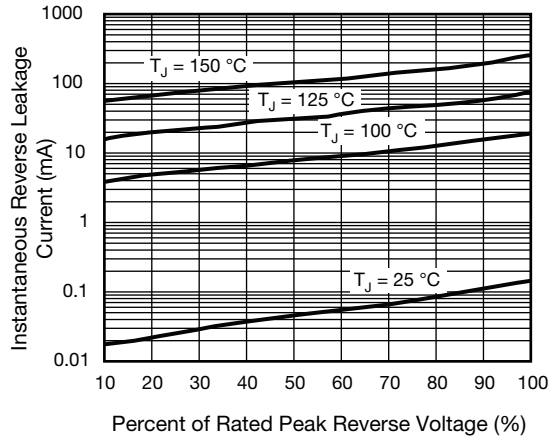


Fig. 4 - Typical Reverse Characteristics Per Diode

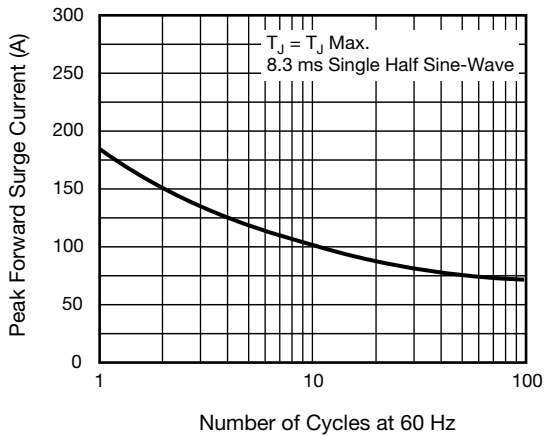


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

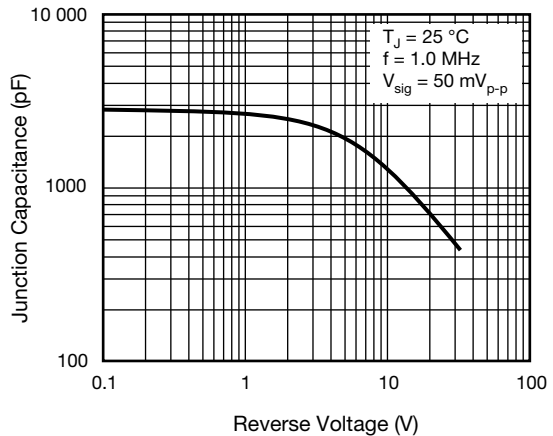


Fig. 5 - Typical Junction Capacitance Per Diode

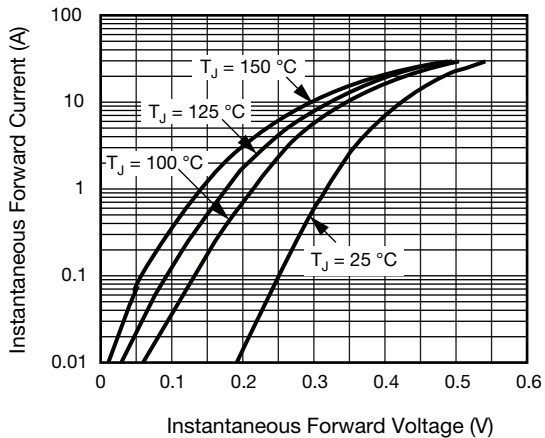


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

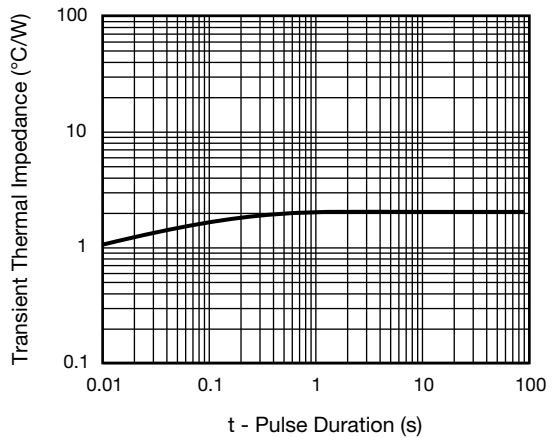
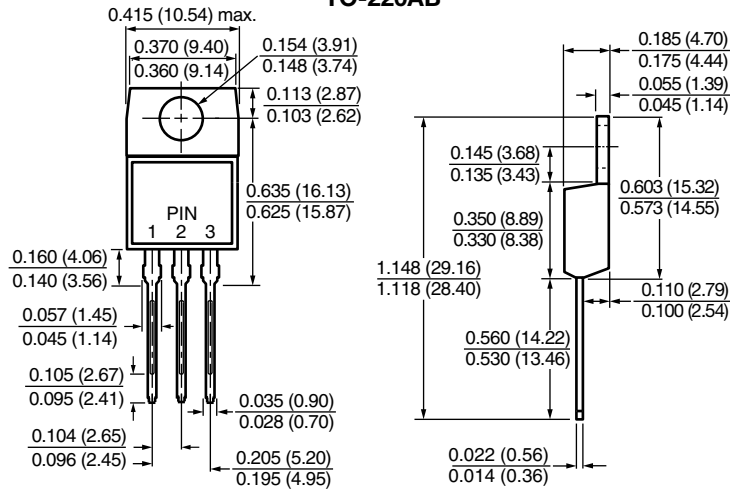


Fig. 6 - Typical Transient Thermal Impedance Per Diode

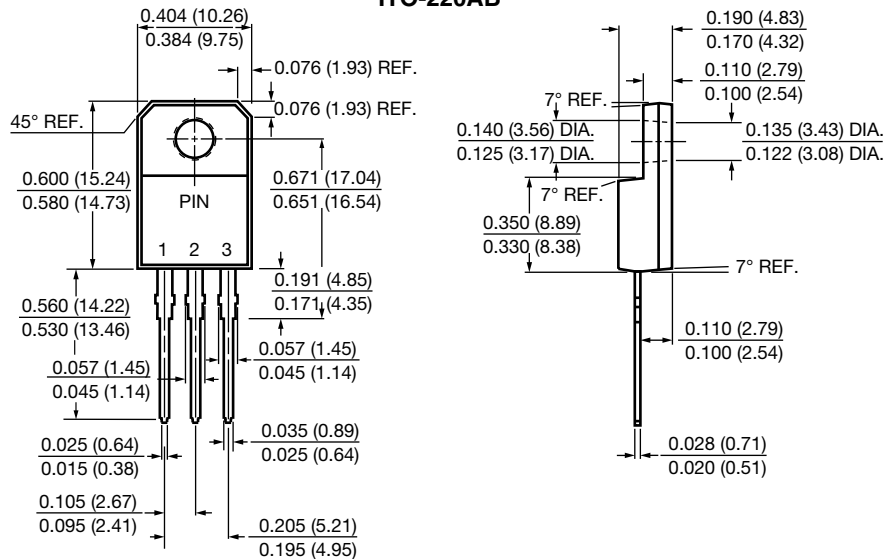


## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

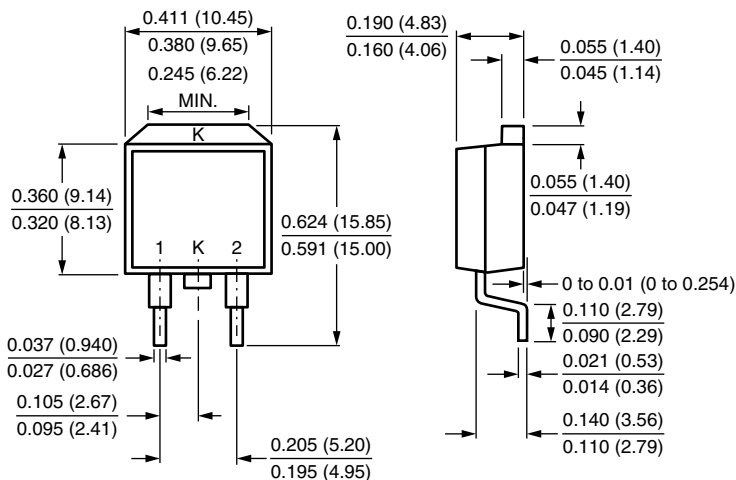
### TO-220AB



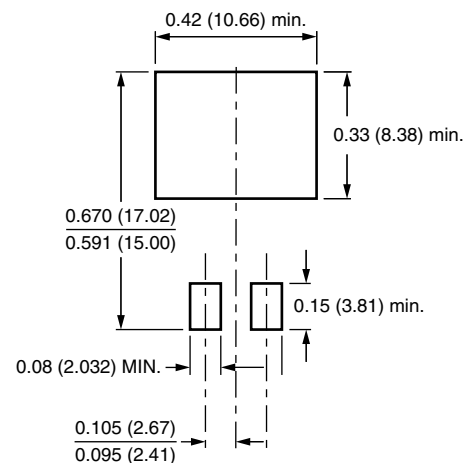
### ITO-220AB



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



### Mounting Pad Layout





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