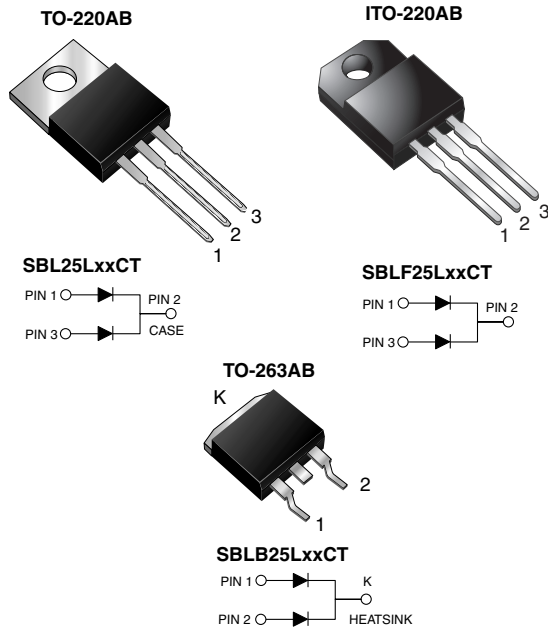


## Dual Low $V_F$ Common Cathode Schottky Rectifier



### 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 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
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### 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, 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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 12.5 A
$V_{RRM}$	20 V to 30 V
$I_{FSM}$	180 A
$V_F$	0.39 V
$T_J \text{ max.}$	150 °C
Package	TO-220AB, ITO-220AB, TO-263AB
Diode variations	Common cathode

MAXIMUM RATINGS ( $T_C = 25\text{ °C}$ unless otherwise noted)					
PARAMETER	SYMBOL	SBL25L20CT	SBL25L25CT	SBL25L30CT	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	25	30	V
Maximum average forward rectified current at $T_C = 95\text{ °C}$	total device per diode	$I_{F(AV)}$			A
		25			
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			°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	SBL	SBLF	SBLB	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> (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	SBL25L20CT-E3/45	1.85	45	50/tube	Tube
ITO-220AB	SBLF25L20CT-E3/45	1.99	45	50/tube	Tube
TO-263AB	SBLB25L20CT-E3/45	1.35	45	50/tube	Tube
TO-263AB	SBLB25L20CT-E3/81	1.35	81	800/reel	Tape and reel
TO-220AB	SBL25L20CTHE3/45 <sup>(1)</sup>	1.85	45	50/tube	Tube
ITO-220AB	SBLF25L20CTHE3/45 <sup>(1)</sup>	1.99	45	50/tube	Tube
TO-263AB	SBLB25L20CTHE3/45 <sup>(1)</sup>	1.35	45	50/tube	Tube
TO-263AB	SBLB25L20CTHE3/81 <sup>(1)</sup>	1.35	81	800/reel	Tape and reel

**Note**

- (1) AEC-Q101 qualified



## RATINGS AND CHARACTERISTICS CURVES

( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

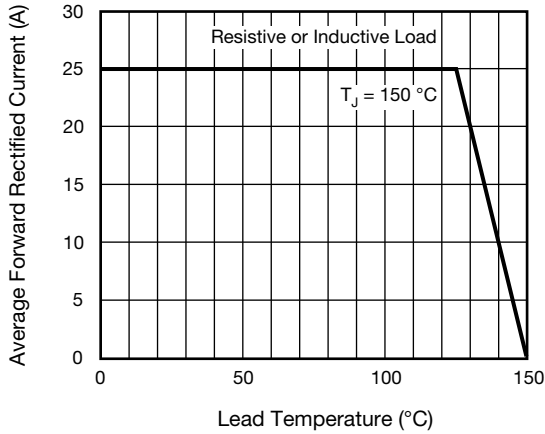


Fig. 1 - Forward Current Derating Curve

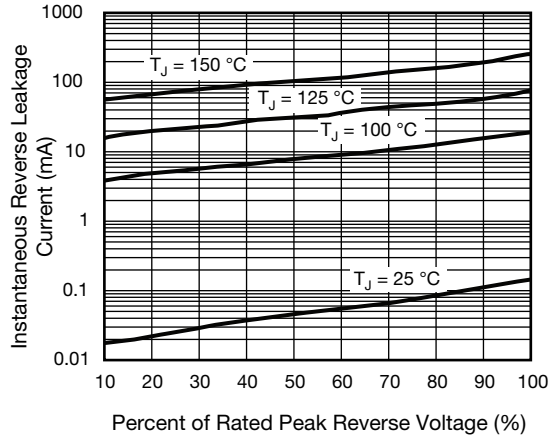


Fig. 4 - Typical Reverse Characteristics Per Diode

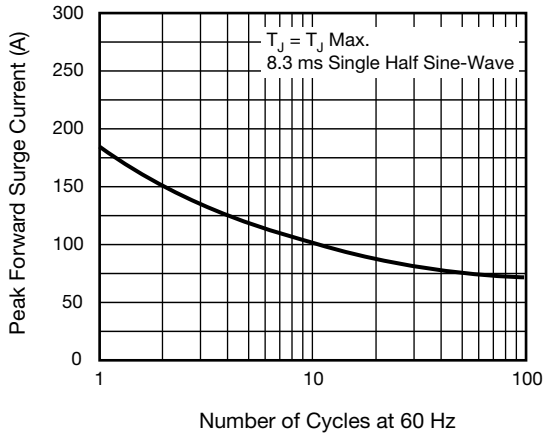


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

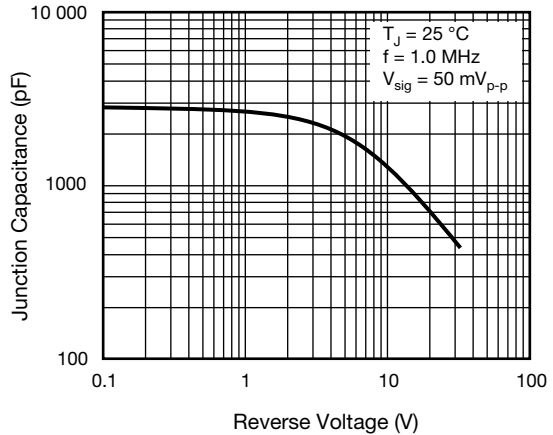


Fig. 5 - Typical Junction Capacitance Per Diode

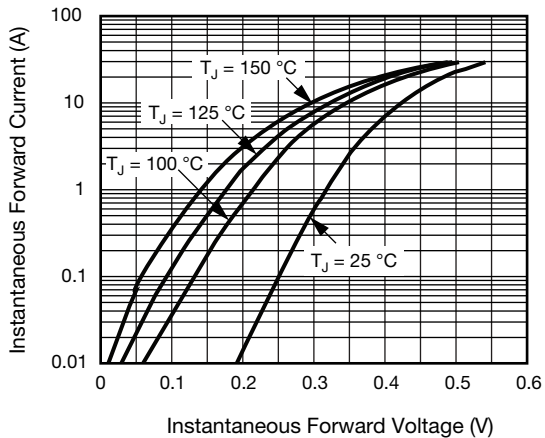


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

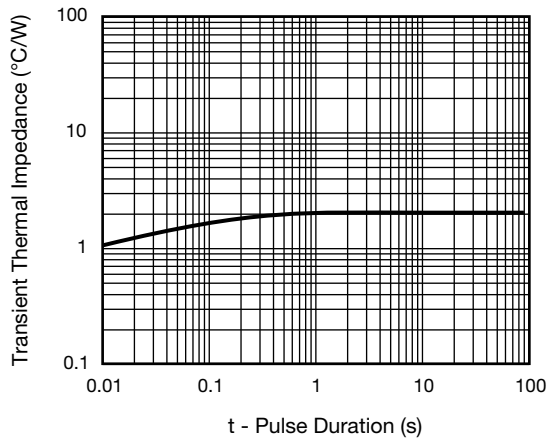
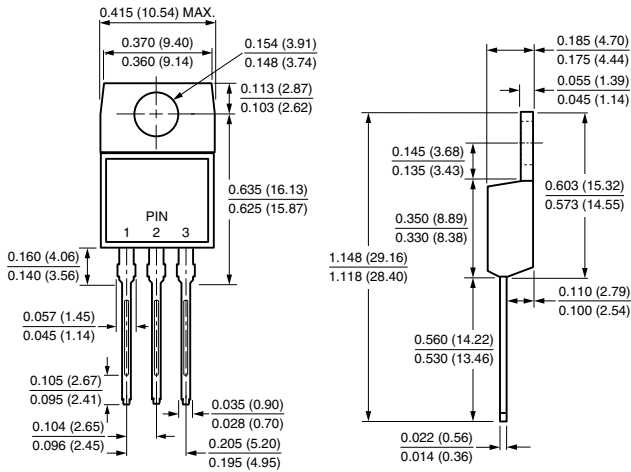


Fig. 6 - Typical Transient Thermal Impedance Per Diode

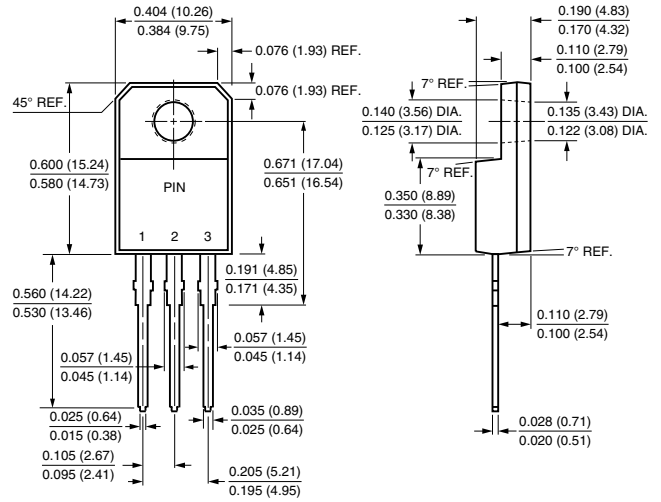


## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

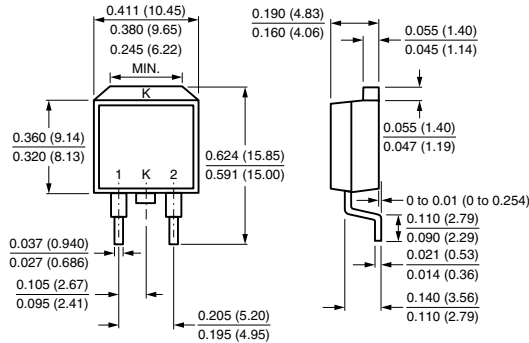
### TO-220AB



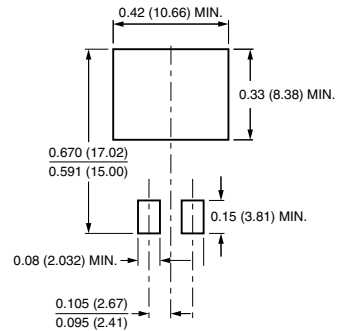
### ITO-220AB



### TO-263AB



### Mounting Pad Layout





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