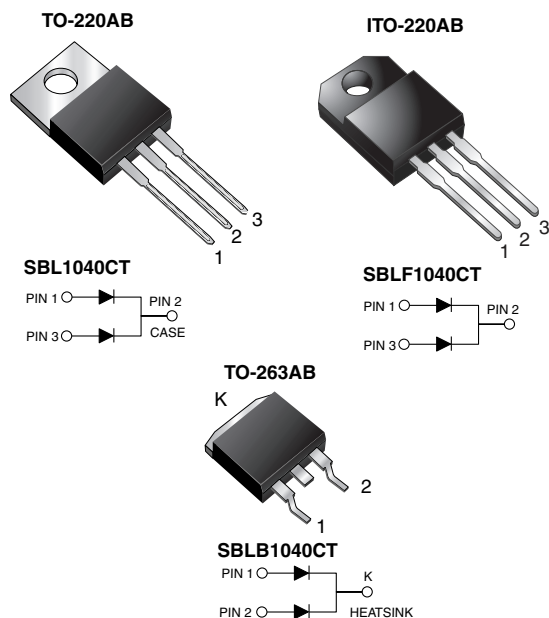


Dual Common Cathode Schottky Rectifier



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 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_A
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

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, 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
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

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, ITO-220AB, TO-263AB
Diode variations	Common cathode

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 $T_C = 107\text{ °C}$	$I_{F(AV)}$	10	A
		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
Isolation voltage (ITO-220AB only) from terminal to heatsink $t = 1\text{ min}$	V_{AC}	1500	V

**ELECTRICAL CHARACTERISTICS** ($T_C = 25\text{ }^{\circ}\text{C}$ 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	$T_C = 25\text{ }^{\circ}\text{C}$	mA
			$T_C = 100\text{ }^{\circ}\text{C}$	
			50	

Notes(1) Pulse test: 300 μs pulse width, 1 % duty cycle(2) Pulse test: pulse width $\leq 40\text{ ms}$ **THERMAL CHARACTERISTICS** ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	SBL	SBLF	SBLB	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	3.0	5.0	3.0	$^{\circ}\text{C/W}$

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
ITO-220AB	SBLF1040CT-E3/45	1.99	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-220AB	SBL1040CTHE3/45 ⁽¹⁾	1.85	45	50/tube	Tube
ITO-220AB	SBLF1040CTHE3/45 ⁽¹⁾	1.99	45	50/tube	Tube
TO-263AB	SBLB1040CTHE3/45 ⁽¹⁾	1.35	45	50/tube	Tube
TO-263AB	SBLB1040CTHE3/81 ⁽¹⁾	1.35	81	800/reel	Tape and reel
TO-263AB	SBLB1040CTHE3_A/P ⁽¹⁾	1.35	P	50/tube	Tube
TO-263AB	SBLB1040CTHE3_A/I ⁽¹⁾	1.35	I	800/reel	Tape and reel

Note

(1) AEC-Q101 qualified



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

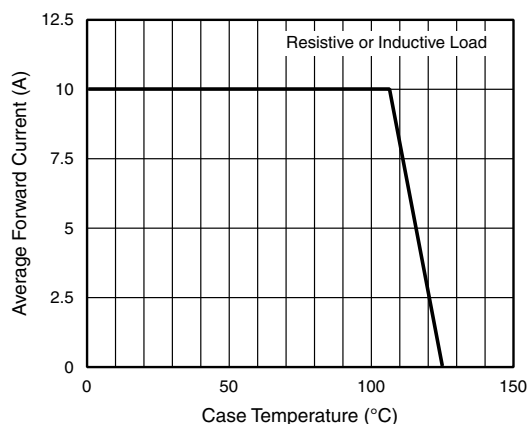


Fig. 1 - Forward Current Derating Curve

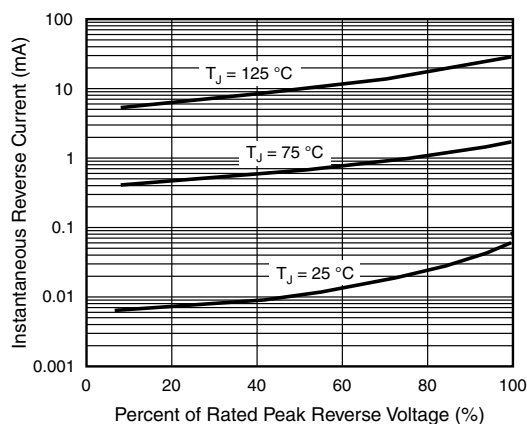


Fig. 4 - Typical Reverse Characteristics Per Diode

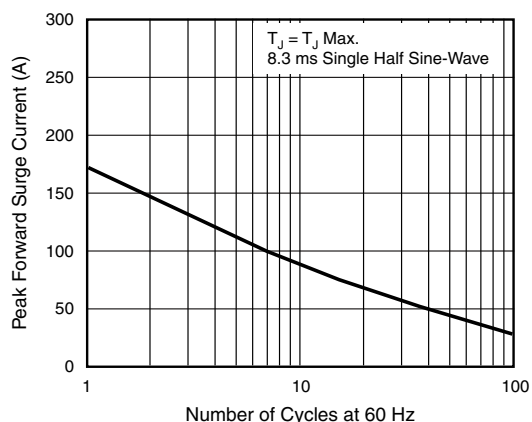


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

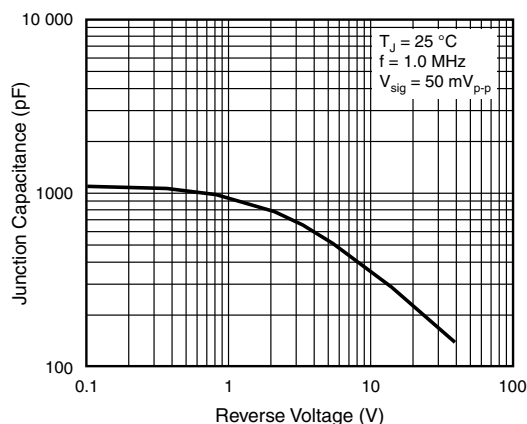


Fig. 5 - Typical Junction Capacitance Per Diode

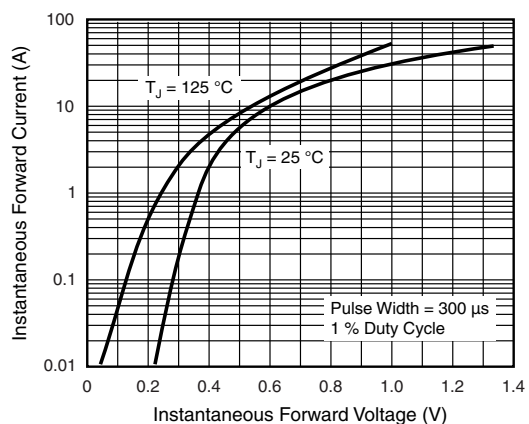


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

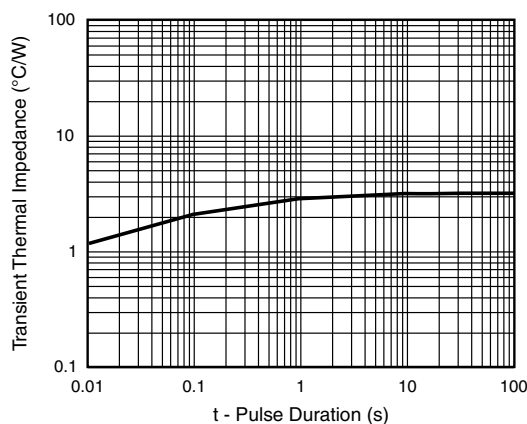
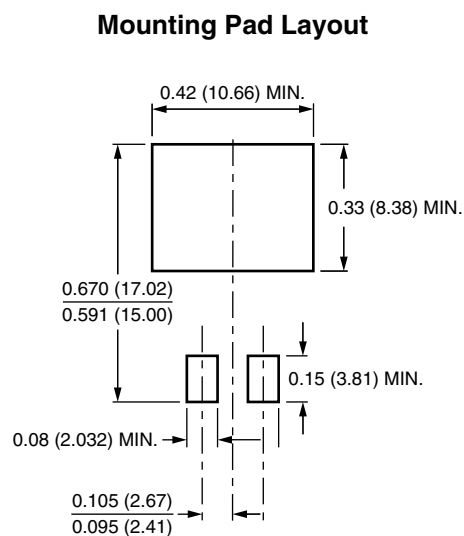
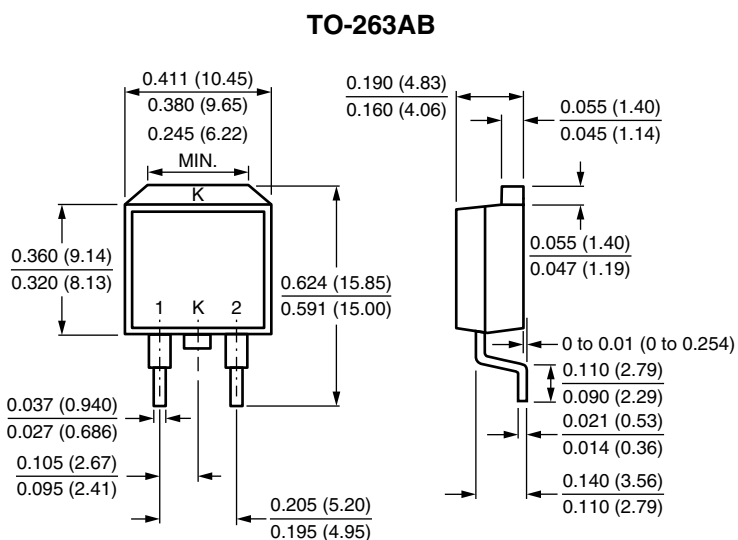
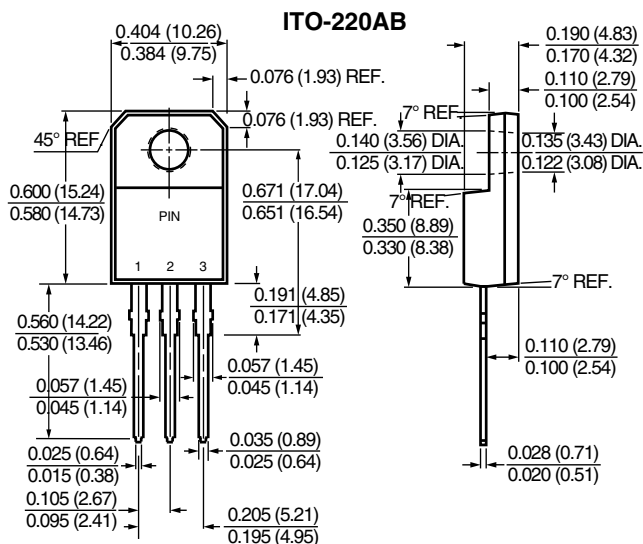
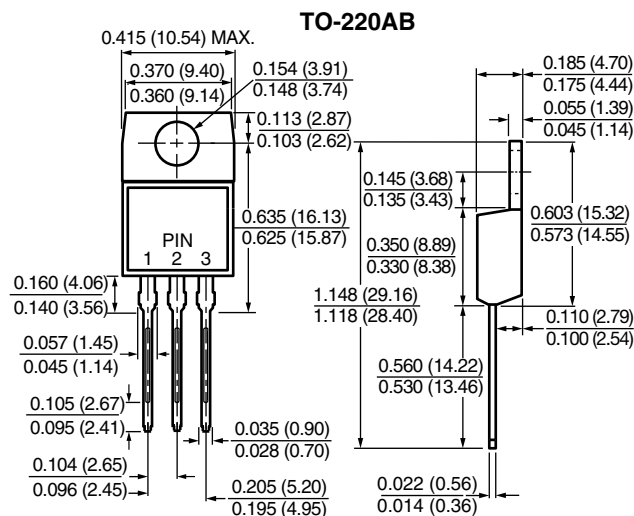


Fig. 6 - Typical Transient Thermal Impedance Per Diode



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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