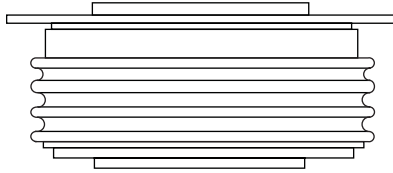


## Standard Recovery Diodes (Hockey PUK Version), 1200 A



DO-200AB (B-PUK)

**FEATURES**

- Wide current range
- High voltage ratings up to 4500 V
- High surge current capabilities
- Diffused junction
- Hockey PUK version
- Case style DO-200AB (B-PUK)
- Lead (Pb)-free


**RoHS**  
COMPLIANT

**PRODUCT SUMMARY**

$I_{F(AV)}$	1200 A
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**TYPICAL APPLICATIONS**

- Converters
- Power supplies
- Machine tool controls
- High power drives
- Medium traction applications

**MAJOR RATINGS AND CHARACTERISTICS**

PARAMETER	TEST CONDITIONS	SD800C..L		UNITS
		24 TO 36	40 TO 45	
$I_{F(AV)}$		1180	1065	A
	$T_{hs}$	55	55	°C
$I_{F(RMS)}$		2280	2040	A
	$T_{hs}$	25	25	°C
$I_{FSM}$	50 Hz	13 600	12 200	A
	60 Hz	14 240	12 800	
$I^2t$	50 Hz	925	745	kA <sup>2</sup> s
	60 Hz	845	680	
$V_{RRM}$	Range	2400 to 3600	4000 to 4500	V
$T_J$		- 40 to 150	- 40 to 150	°C

**ELECTRICAL SPECIFICATIONS**
**VOLTAGE RATINGS**

TYPE NUMBER	VOLTAGE CODE	$V_{RRM}$ , MAXIMUM REPETITIVE PEAK REVERSE VOLTAGE V	$V_{RSM}$ , MAXIMUM NON-REPETITIVE PEAK REVERSE VOLTAGE V	$I_{RRM}$ MAXIMUM AT $T_J = T_J$ MAXIMUM mA
SD800C..L	24	2400	2500	50
	30	3000	3100	
	36	3600	3700	
	40	4000	4100	
	45	4500	4600	

## Vishay High Power Products Standard Recovery Diodes (Hockey PUK Version), 1200 A

FORWARD CONDUCTION							
PARAMETER	SYMBOL	TEST CONDITIONS		SD800C..L		UNITS	
				24 TO 36	40 TO 45		
Maximum average forward current at heatsink temperature	$I_{F(AV)}$	180° conduction, half sine wave Double side (single side) cooled		1180 (550)	1065 (490)	A	
				55 (85)	55 (85)	°C	
Maximum RMS forward current	$I_{F(RMS)}$	25 °C heatsink temperature double side cooled		2280	2040		
Maximum peak, one-cycle forward, non-repetitive surge current	$I_{FSM}$	t = 10 ms	No voltage reappplied	Sinusoidal half wave, initial $T_J = T_{J \text{ maximum}}$	13 600	12 200	A
		t = 8.3 ms			14 240	12 800	
		t = 10 ms	50 % $V_{RRM}$ reappplied		11 440	10 250	
		t = 8.3 ms			11 980	10 750	
Maximum $I^2t$ for fusing	$I^2t$	t = 10 ms	No voltage reappplied		925	745	kA <sup>2</sup> s
		t = 8.3 ms			845	680	
		t = 10 ms	50 % $V_{RRM}$ reappplied		654	526	
		t = 8.3 ms			597	480	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	t = 0.1 to 10 ms, no voltage reappplied		9250	7450	kA <sup>2</sup> √s	
Low level value of threshold voltage	$V_{F(TO)1}$	$(16.7 \% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$ , $T_J = T_{J \text{ maximum}}$		0.90	1.06	V	
High level value of threshold voltage	$V_{F(TO)2}$	$(I > \pi \times I_{F(AV)})$ , $T_J = T_{J \text{ maximum}}$		1.10	1.18		
Low level value of forward slope resistance	$r_{f1}$	$(16.7 \% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$ , $T_J = T_{J \text{ maximum}}$		0.38	0.44	mΩ	
High level value of forward slope resistance	$r_{f2}$	$(I > \pi \times I_{F(AV)})$ , $T_J = T_{J \text{ maximum}}$		0.34	0.41		
Maximum forward voltage drop	$V_{FM}$	$I_{pk} = 2000 \text{ A}$ , $T_J = T_{J \text{ maximum}}$ , $t_p = 10 \text{ ms}$ sinusoidal wave		1.66	1.95	V	

THERMAL AND MECHANICAL SPECIFICATIONS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction operating temperature range	$T_J$		- 40 to 150	°C
Maximum storage temperature range	$T_{Stg}$		- 55 to 200	
Maximum thermal resistance, junction to heatsink	$R_{thJ-hs}$	DC operation single side cooled	0.073	K/W
		DC operation double side cooled	0.031	
Mounting force, ± 10 %			14 700 (1500)	N (kg)
Approximate weight			255	g
Case style		See dimensions - link at the end of datasheet	DO-200AB (B-PUK)	

$\Delta R_{thJ-hs}$ CONDUCTION						
CONDUCTION ANGLE	SINUSOIDAL CONDUCTION		RECTANGULAR CONDUCTION		TEST CONDITIONS	UNITS
	SINGLE SIDE	DOUBLE SIDE	SINGLE SIDE	DOUBLE SIDE		
180°	0.009	0.009	0.006	0.006	$T_J = T_{J \text{ maximum}}$	K/W
120°	0.011	0.011	0.011	0.011		
90°	0.014	0.014	0.015	0.015		
60°	0.020	0.020	0.021	0.021		
30°	0.036	0.036	0.036	0.036		

### Note

- The table above shows the increment of thermal resistance  $R_{thJ-hs}$  when devices operate at different conduction angles than DC

## Standard Recovery Diodes Vishay High Power Products (Hockey PUK Version), 1200 A

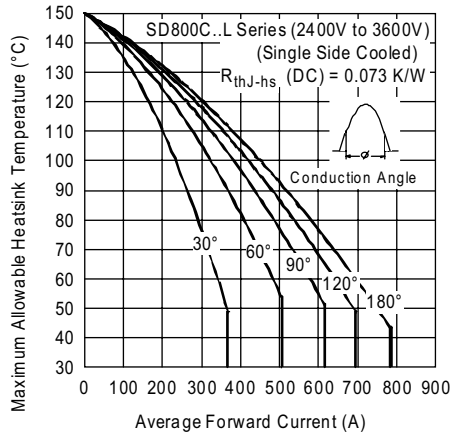


Fig. 1 - Current Ratings Characteristics

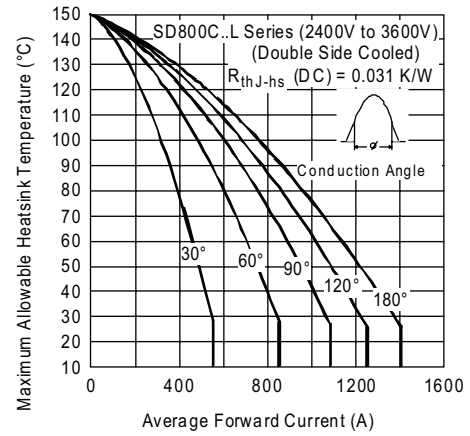


Fig. 4 - Current Ratings Characteristics

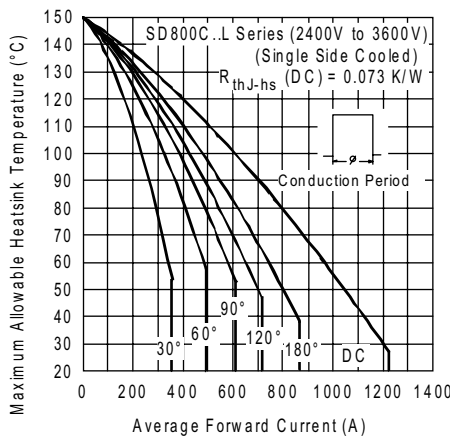


Fig. 2 - Current Ratings Characteristics

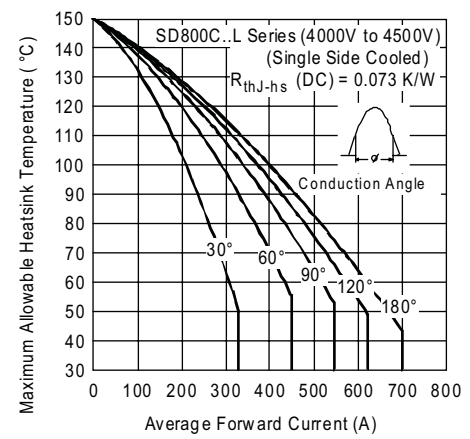


Fig. 5 - Current Ratings Characteristics

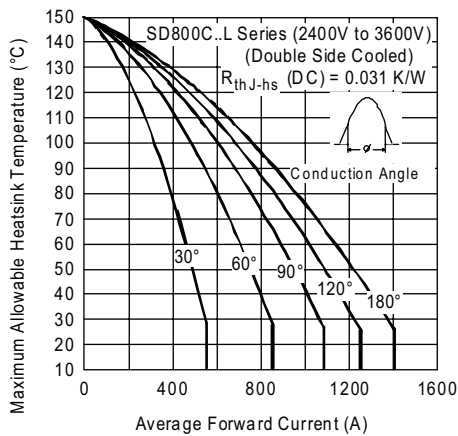


Fig. 3 - Current Ratings Characteristics

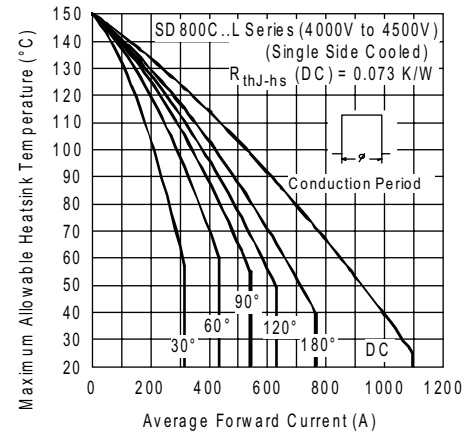


Fig. 6 - Current Ratings Characteristics

# SD800C..L Series



## Vishay High Power Products Standard Recovery Diodes (Hockey PUK Version), 1200 A

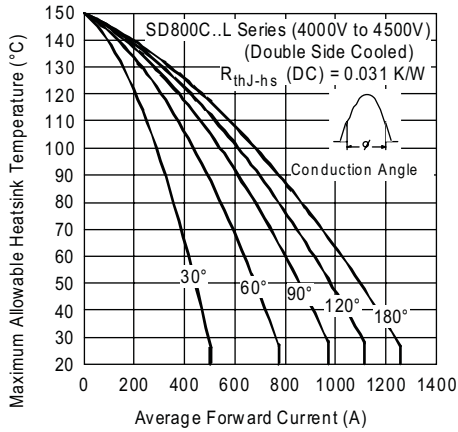


Fig. 7 - Current Ratings Characteristics

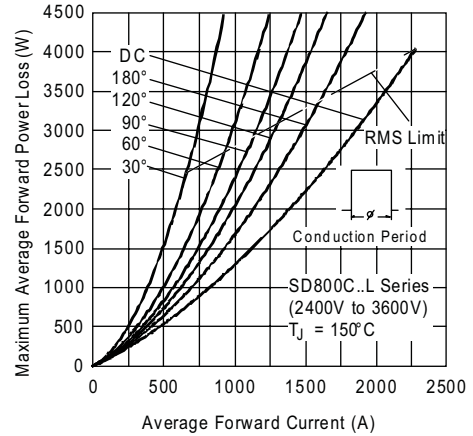


Fig. 10 - Forward Power Loss Characteristics

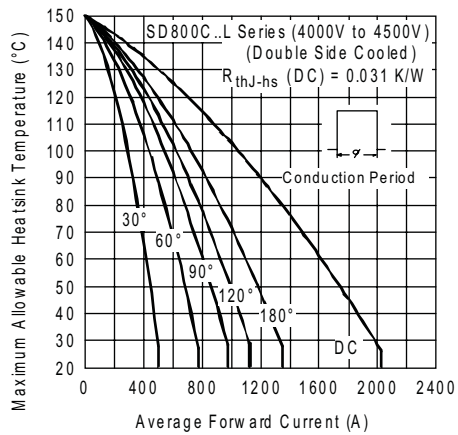


Fig. 8 - Current Ratings Characteristics

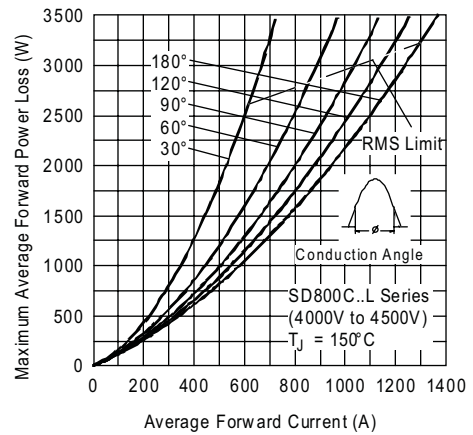


Fig. 11 - Forward Power Loss Characteristics

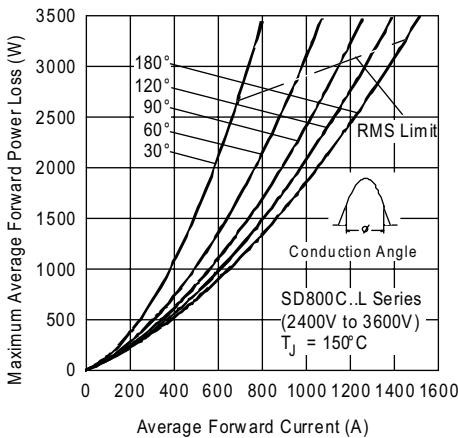


Fig. 9 - Forward Power Loss Characteristics

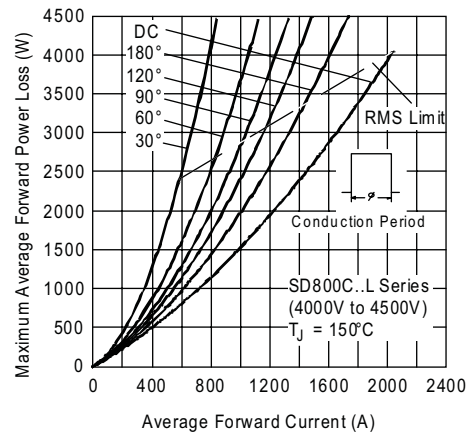


Fig. 12 - Forward Power Loss Characteristics



**Standard Recovery Diodes Vishay High Power Products  
(Hockey PUK Version),  
1200 A**

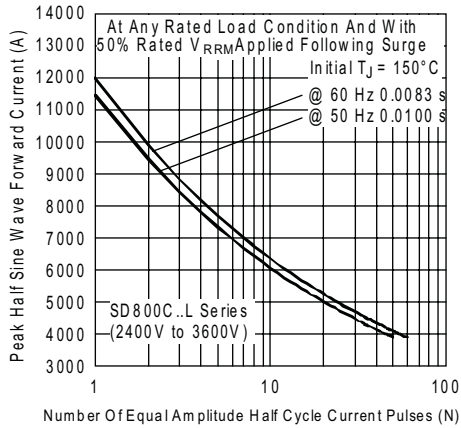


Fig. 13 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

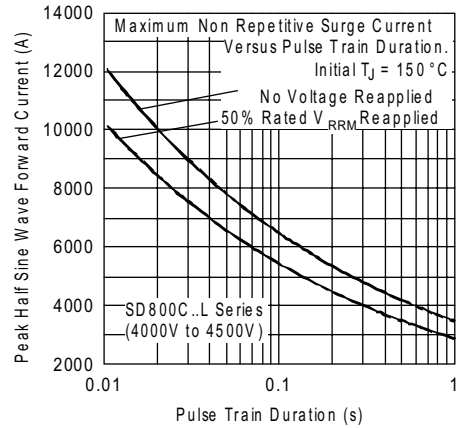


Fig. 16 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

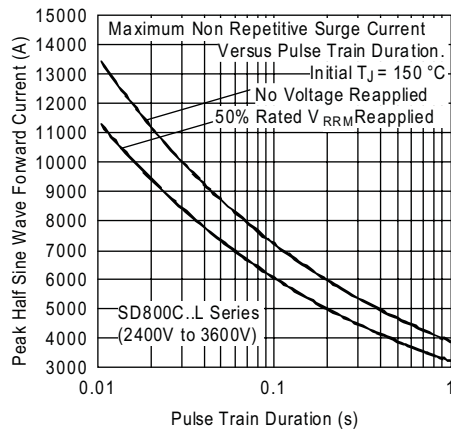


Fig. 14 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

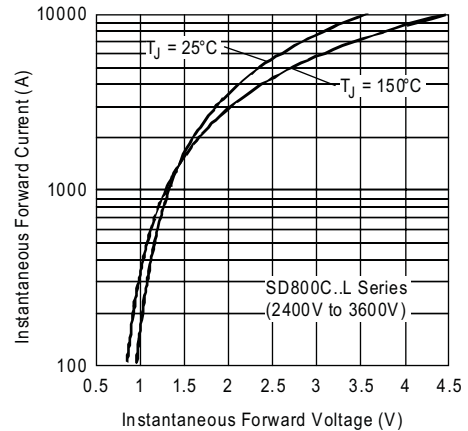


Fig. 17 - Forward Voltage Drop Characteristics

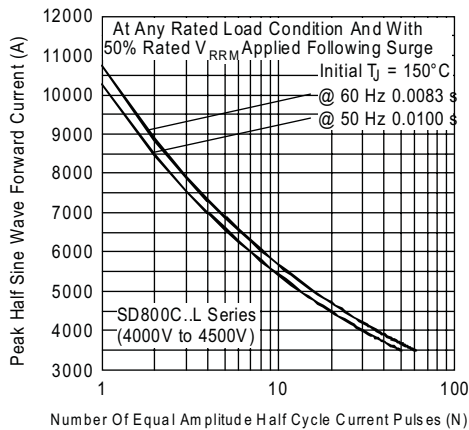


Fig. 15 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

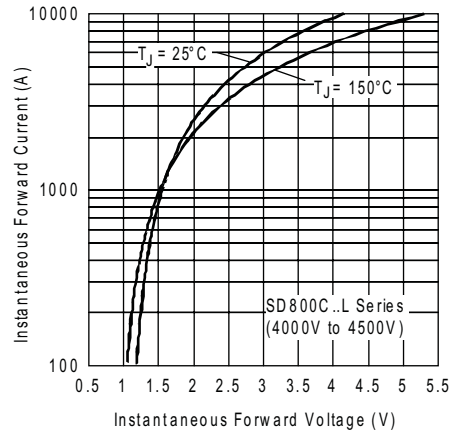


Fig. 18 - Forward Voltage Drop Characteristics

# SD800C..L Series



Vishay High Power Products Standard Recovery Diodes  
(Hockey PUK Version),  
1200 A

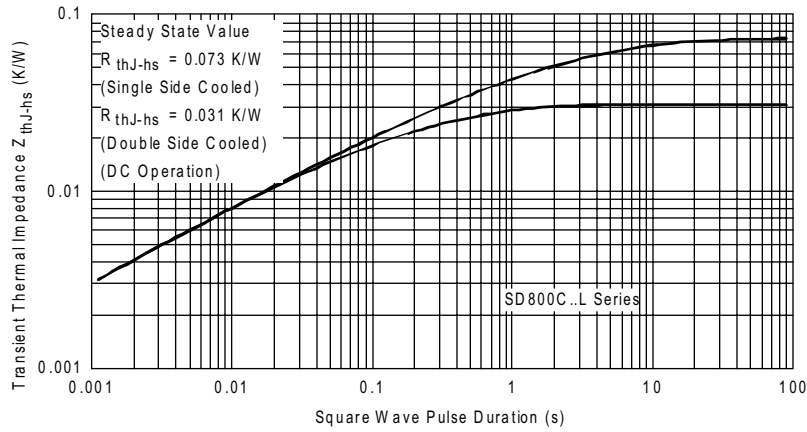


Fig. 19 - Thermal Impedance  $Z_{thJ-hs}$  Characteristics

## ORDERING INFORMATION TABLE

Device code	<b>SD</b>	<b>80</b>	<b>0</b>	<b>C</b>	<b>45</b>	<b>L</b>
	①	②	③	④	⑤	⑥
	<b>1</b>	-	Diode			
	<b>2</b>	-	Essential part number			
	<b>3</b>	-	0 = Standard recovery			
	<b>4</b>	-	C = Ceramic PUK			
	<b>5</b>	-	Voltage code x 100 = $V_{RRM}$ (see Voltage Ratings table)			
	<b>6</b>	-	L = PUK case DO-200AB (B-PUK)			

LINKS TO RELATED DOCUMENTS	
Dimensions	<a href="http://www.vishay.com/doc?95246">http://www.vishay.com/doc?95246</a>



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