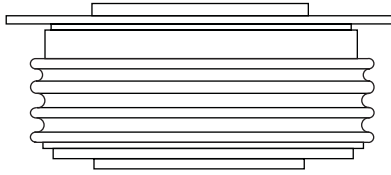


## Standard Recovery Diodes (Hockey PUK Version), 1170 A



DO-200AB (B-PUK)

**FEATURES**

- Wide current range
- High voltage ratings up to 3200 V
- High surge current capabilities
- Diffused junction
- Hockey PUK version
- Case style DO-200AB (B-PUK)
- Lead (Pb)-free
- Designed and qualified for industrial level


**RoHS  
COMPLIANT**
**PRODUCT SUMMARY**

$I_{F(AV)}$	1170 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	SD1100C..L		UNITS
		04 to 20	25 to 32	
$I_{F(AV)}$		1170	910	A
	$T_{hs}$	55	55	°C
$I_{F(RMS)}$		2080	1660	A
	$T_{hs}$	25	25	°C
$I_{FSM}$	50 Hz	13 000	10 500	A
	60 Hz	13 600	11 000	
$I^2t$	50 Hz	846	551	kA <sup>2</sup> s
	60 Hz	772	503	
$V_{RRM}$	Range	400 to 2000	2500 to 3200	V
$T_J$		- 40 to 180	- 40 to 150	°C

**ELECTRICAL SPECIFICATIONS**

<b>VOLTAGE RATINGS</b>				
TYPE NUMBER	VOLTAGE CODE	V <sub>RRM</sub> , MAXIMUM REPETITIVE PEAK REVERSE VOLTAGE V	V <sub>RSM</sub> , MAXIMUM NON-REPETITIVE PEAK REVERSE VOLTAGE V	I <sub>RRM</sub> MAXIMUM AT T <sub>J</sub> = T <sub>J</sub> MAXIMUM mA
SD1100C..L	04	400	500	15
	08	800	900	
	12	1200	1300	
	16	1600	1700	
	20	2000	2100	
	25	2500	2600	
	30	3000	3100	
	32	3200	3300	

<b>FORWARD CONDUCTION</b>							
PARAMETER	SYMBOL	TEST CONDITIONS		SD1100C..L		UNITS	
				04 to 20	25 to 32		
Maximum average forward current at heatsink temperature	I <sub>F(AV)</sub>	180° conduction, half sine wave Double side (single side) cooled		1170 (600)	910 (420)	A	
				55 (85)	55 (85)	°C	
Maximum RMS forward current	I <sub>F(RMS)</sub>	25 °C heatsink temperature double side cooled		2080	1660		
Maximum peak, one-cycle forward, non-repetitive surge current	I <sub>FSM</sub>	t = 10 ms	No voltage reappplied	Sinusoidal half wave, initial T <sub>J</sub> = T <sub>J</sub> maximum	13 000	10 500	A
		t = 8.3 ms			13 600	11 000	
		t = 10 ms	100 % V <sub>RRM</sub> reappplied		10 930	8830	
		t = 8.3 ms			11 450	9250	
Maximum I <sup>2</sup> t for fusing	I <sup>2</sup> t	t = 10 ms	No voltage reappplied		846	551	kA <sup>2</sup> s
		t = 8.3 ms			772	503	
		t = 10 ms	100 % V <sub>RRM</sub> reappplied		598	390	
		t = 8.3 ms			546	356	
Maximum I <sup>2</sup> √t for fusing	I <sup>2</sup> √t	t = 0.1 to 10 ms, no voltage reappplied		8460	5510	kA <sup>2</sup> √s	
Low level value of threshold voltage	V <sub>F(TO)1</sub>	(16.7 % × π × I <sub>F(AV)</sub> < I < π × I <sub>F(AV)</sub> ), T <sub>J</sub> = T <sub>J</sub> maximum		0.78	0.84	V	
High level value of threshold voltage	V <sub>F(TO)2</sub>	(I > π × I <sub>F(AV)</sub> ), T <sub>J</sub> = T <sub>J</sub> maximum		0.94	0.88		
Low level value of forward slope resistance	r <sub>f1</sub>	(16.7 % × π × I <sub>F(AV)</sub> < I < π × I <sub>F(AV)</sub> ), T <sub>J</sub> = T <sub>J</sub> maximum		0.35	0.40	mΩ	
High level value of forward slope resistance	r <sub>f2</sub>	(I > π × I <sub>F(AV)</sub> ), T <sub>J</sub> = T <sub>J</sub> maximum		0.26	0.38		
Maximum forward voltage drop	V <sub>FM</sub>	I <sub>pk</sub> = 1500 A, T <sub>J</sub> = T <sub>J</sub> maximum, t <sub>p</sub> = 10 ms sinusoidal wave		1.31	1.44	V	



THERMAL AND MECHANICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS	SD1100C..L		UNITS
			04 to 20	25 to 32	
Maximum junction operating temperature range	$T_J$		- 40 to 180	- 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	0.11		K/W
		DC operation double side cooled	0.05		
Mounting force, $\pm 10\%$			9800 (1000)		N (kg)
Approximate weight			250		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°	0.011	0.011	0.008	0.008	$T_J = T_J$ maximum	K/W
120°	0.014	0.015	0.014	0.014		
90°	0.018	0.018	0.019	0.019		
60°	0.026	0.026	0.027	0.028		
30°	0.045	0.046	0.046	0.046		

**Note**

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

# SD1100C..L Series



## Vishay High Power Products Standard Recovery Diodes (Hockey PUK Version), 1170 A

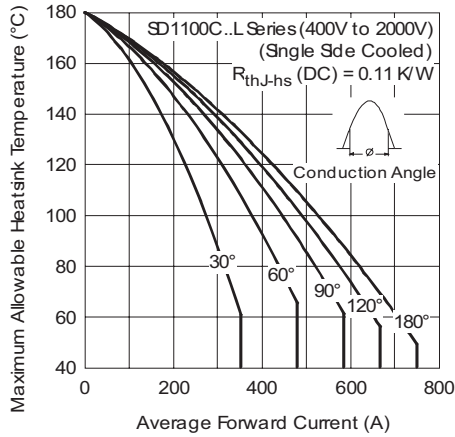


Fig. 1 - Current Ratings Characteristics

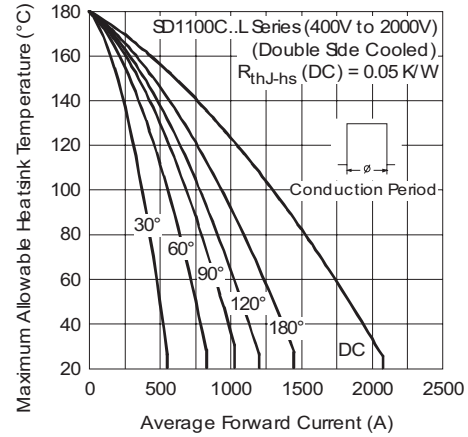


Fig. 4 - Current Ratings Characteristics

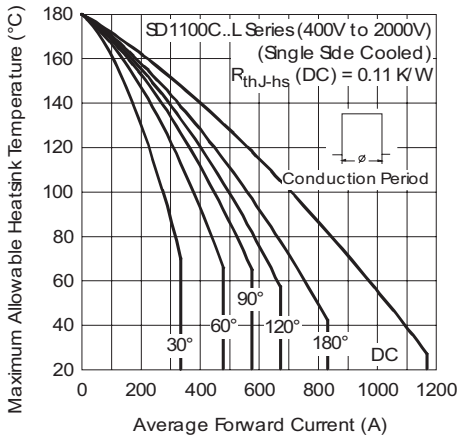


Fig. 2 - Current Ratings Characteristics

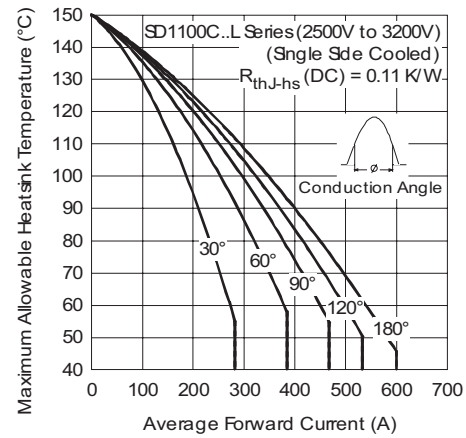


Fig. 5 - Current Ratings Characteristics

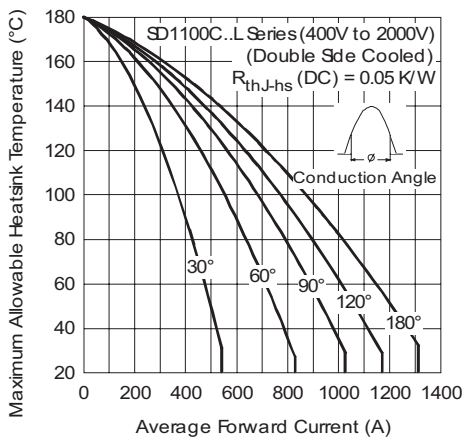


Fig. 3 - Current Ratings Characteristics

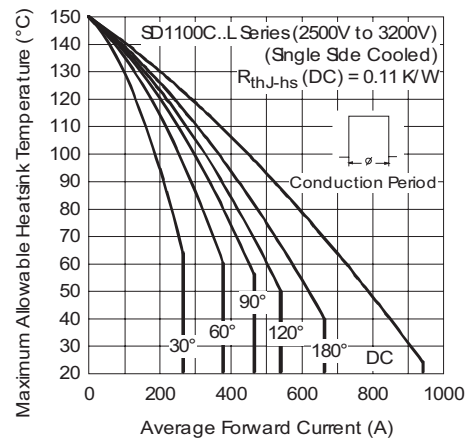


Fig. 6 - Current Ratings Characteristics

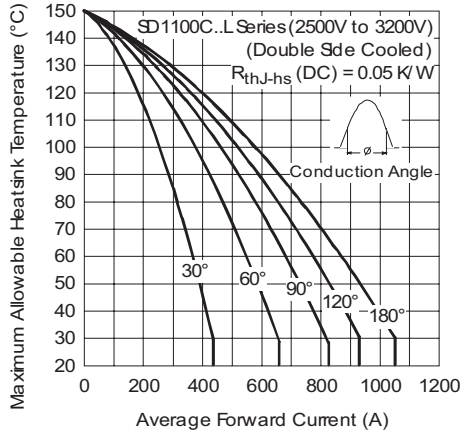


Fig. 7 - Current Ratings Characteristics

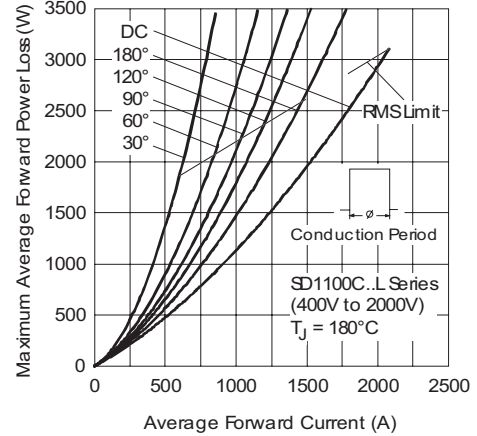


Fig. 10 - Forward Power Loss Characteristics

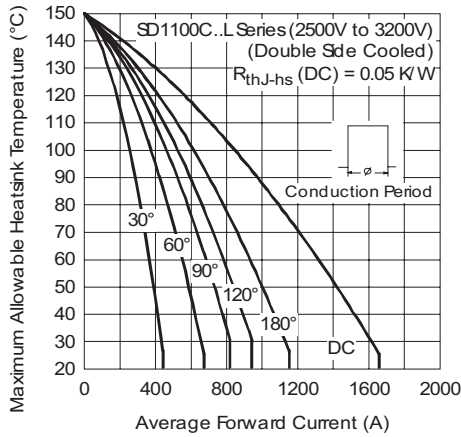


Fig. 8 - Current Ratings Characteristics

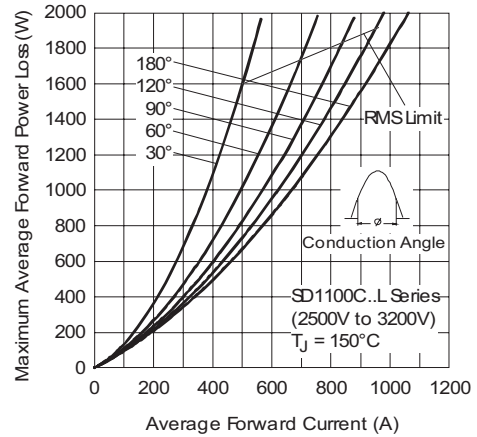


Fig. 11 - Forward Power Loss Characteristics

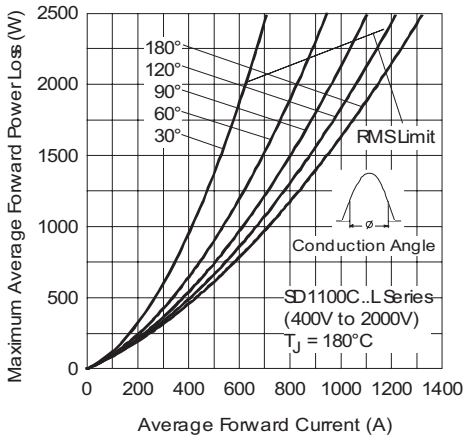


Fig. 9 - Forward Power Loss Characteristics

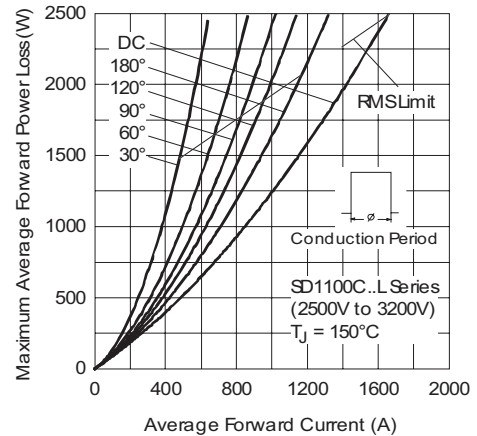


Fig. 12 - Forward Power Loss Characteristics

# SD1100C..L Series



## Vishay High Power Products Standard Recovery Diodes (Hockey PUK Version), 1170 A

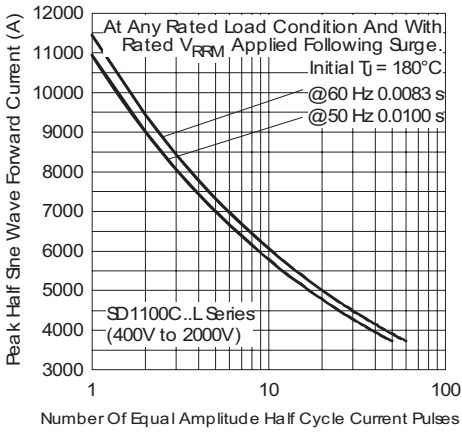


Fig. 13 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

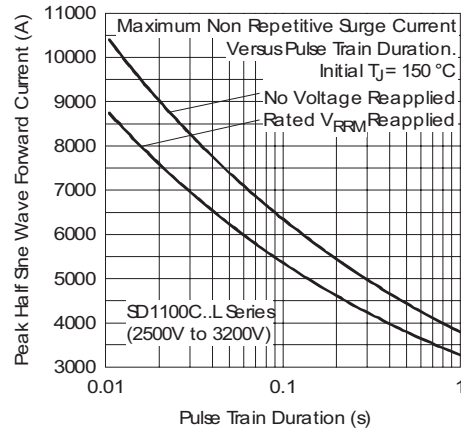


Fig. 16 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

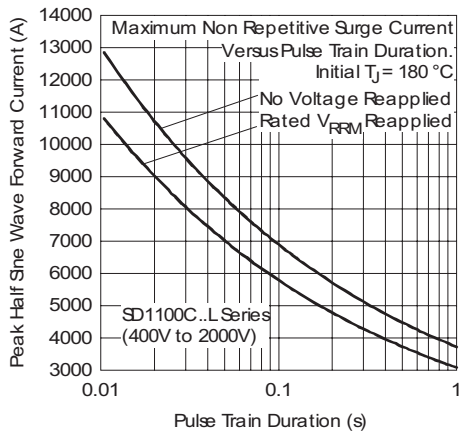


Fig. 14 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

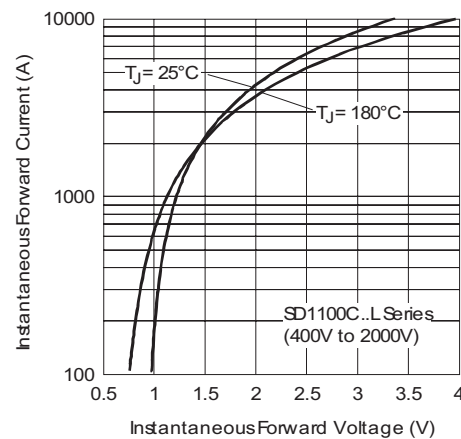


Fig. 17 - Forward Voltage Drop Characteristics

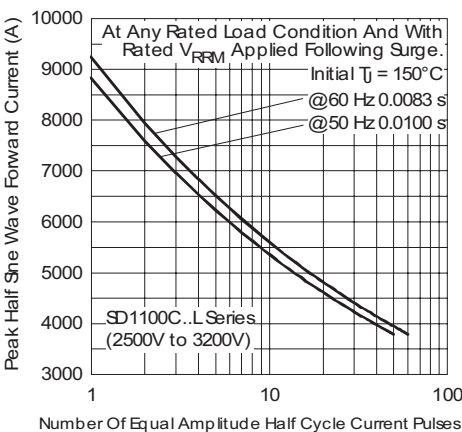


Fig. 15 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

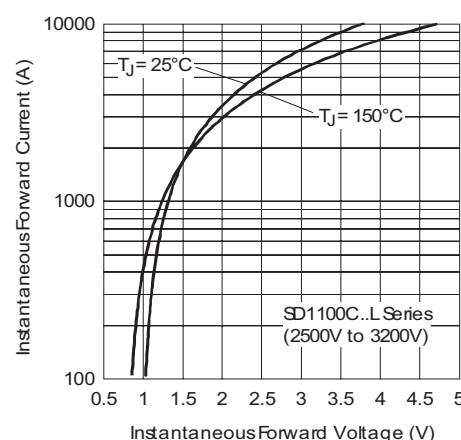


Fig. 18 - Forward Voltage Drop Characteristics

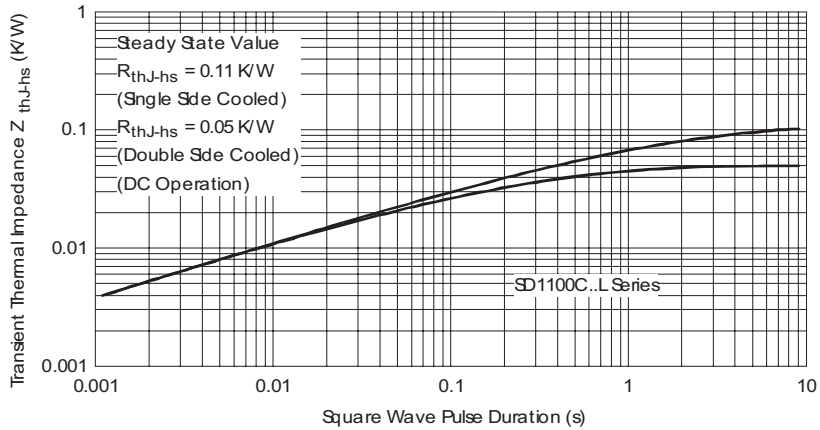


Fig. 19 - Thermal Impedance  $Z_{thJC}$  Characteristics

**ORDERING INFORMATION TABLE**

Device code	<b>SD</b>	<b>110</b>	<b>0</b>	<b>C</b>	<b>32</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>



## Notice

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