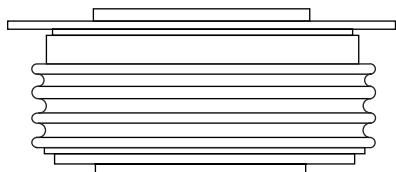


Standard Recovery Diodes (Hockey PUK Version), 700 A



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

$I_{F(AV)}$	700 A
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TYPICAL APPLICATIONS

- Converters
- Power supplies
- High power drives
- Auxiliary system supplies for traction applications

MAJOR RATINGS AND CHARACTERISTICS

PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{F(AV)}$		700	A
	T_{hs}	55	°C
$I_{F(RMS)}$		1310	A
	T_{hs}	25	°C
I_{FSM}	50 Hz	7500	A
	60 Hz	7850	
I^2t	50 Hz	281	kA ² s
	60 Hz	257	
V_{RRM}	Range	3000 to 4500	V
T_J		- 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
SD700C..L	30	3000	3100	50
	36	3600	3700	
	40	4000	4100	
	45	4600	4600	

FORWARD CONDUCTION						
PARAMETER	SYMBOL	TEST CONDITIONS			VALUES	UNITS
Maximum average forward current at heatsink temperature	I _{F(AV)}	180° conduction, half sine wave Double side (single side) cooled			700 (345)	A
					55 (85)	°C
Maximum RMS forward current	I _{F(RMS)}	25 °C heatsink temperature double side cooled			1310	A
Maximum peak, one-cycle forward, non-repetitive surge current	I _{FSM}	t = 10 ms	No voltage reapplied	Sinusoidal half wave, initial T _J = T _J maximum	7500	
		t = 8.3 ms			7850	
		t = 10 ms	100 % V _{RRM} reapplied		6310	
		t = 8.3 ms			6600	
Maximum I ² t for fusing	I ² t	t = 10 ms	No voltage reapplied		281	kA ² s
		t = 8.3 ms			257	
		t = 10 ms	100 % V _{RRM} reapplied		199	
		t = 8.3 ms			182	
Maximum I ² √t for fusing	I ² √t	t = 0.1 to 10 ms, no voltage reapplied			2810	kA ² √s
Low level value of threshold voltage	V _{F(TO)1}	(16.7 % × π × I _{F(AV)}) < I < π × I _{F(AV)}), T _J = T _J maximum			0.88	V
High level value of threshold voltage	V _{F(TO)2}	(I > π × I _{F(AV)}), T _J = T _J maximum			0.99	
Low level value of forward slope resistance	r _{f1}	(16.7 % × π × I _{F(AV)}) < I < π × I _{F(AV)}), T _J = T _J maximum			0.78	mΩ
High level value of forward slope resistance	r _{f2}	(I > π × I _{F(AV)}), T _J = T _J maximum			0.73	
Maximum forward voltage drop	V _{FM}	I _{pk} = 1000 A, T _J = T _J maximum, t _p = 10 ms sinusoidal wave			1.66	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	0.011	K/W
		DC operation double side cooled	0.05	
Mounting force, ± 10 %			9800 (1000)	N (kg)
Approximate weight			250	g
Case style		See dimensions - link at the end of datasheet	DO-200AB (B-PUK)	

ΔR_{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

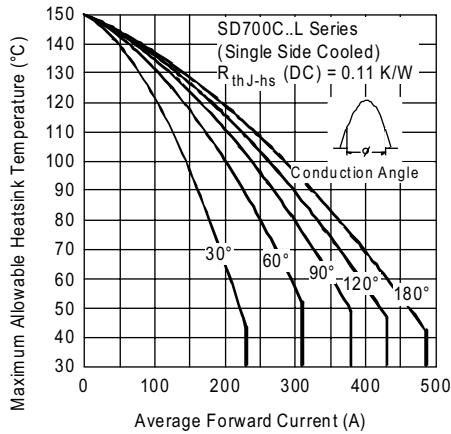


Fig. 1 - Current Ratings Characteristics

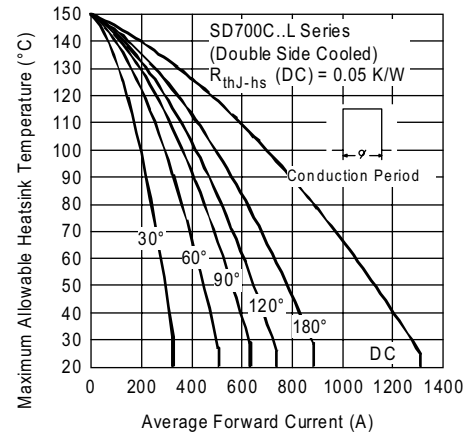


Fig. 4 - Current Ratings Characteristics

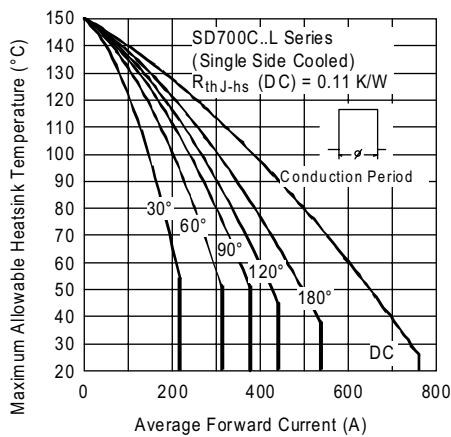


Fig. 2 - Current Ratings Characteristics

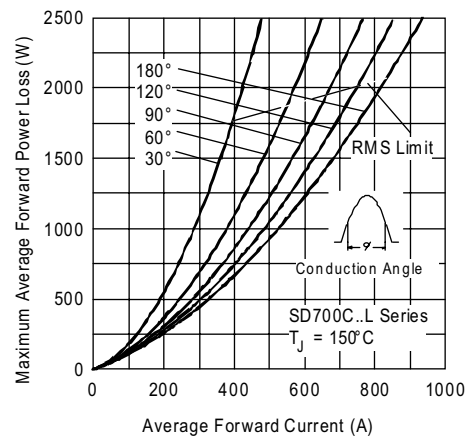


Fig. 5 - Forward Power Loss Characteristics

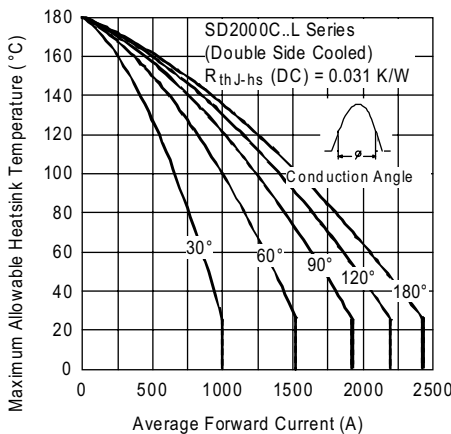


Fig. 3 - Current Ratings Characteristics

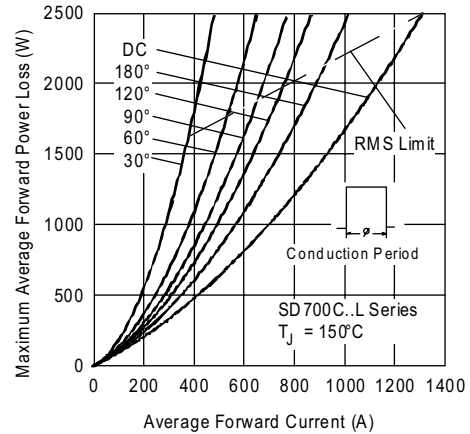


Fig. 6 - Forward Power Loss Characteristics

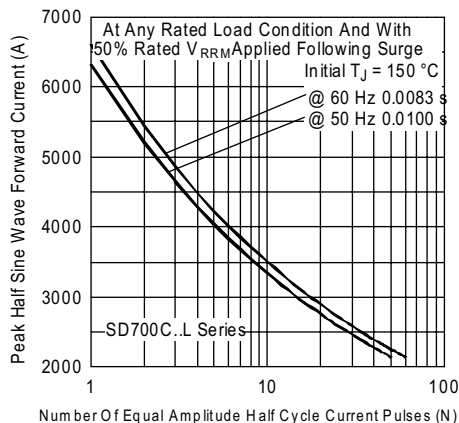


Fig. 7 - Maximum Non-Repetitive Surge Current
Single and Double Side Cooled

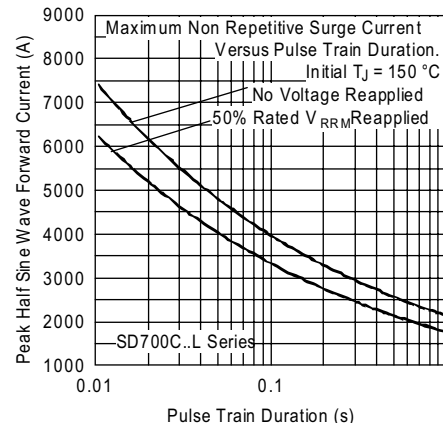


Fig. 8 - Maximum Non-Repetitive Surge Current
Single and Double Side Cooled

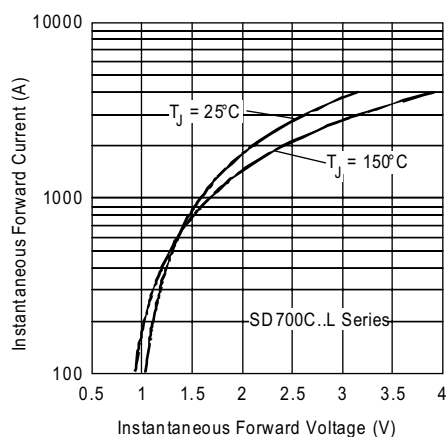


Fig. 9 - Forward Voltage Drop Characteristics

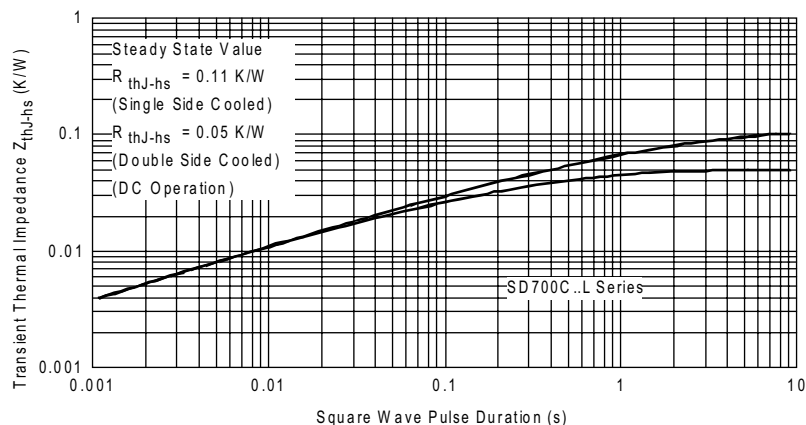


Fig. 10 - Thermal Impedance Z_{thJ-hs} Characteristics



ORDERING INFORMATION TABLE

Device code	SD	70	0	C	45	L
	1	2	3	4	5	6
1	- Diode					
2	- Essential part number					
3	- 0 = Standard recovery					
4	- C = Ceramic PUK					
5	- Voltage code x 100 = V_{RRM} (see Voltage Ratings table)					
6	- L = PUK case DO-200AB (B-PUK)					

LINKS TO RELATED DOCUMENTS	
Dimensions	http://www.vishay.com/doc?95246



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