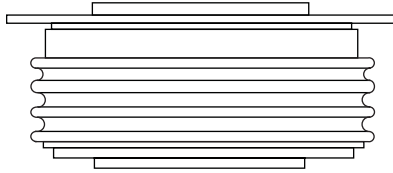


Standard Recovery Diodes (Hockey PUK Version), 700 A



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 reappplied	7500		
		t = 8.3 ms		7850		
		t = 10 ms	100 % V_{RRM} reappplied	6310		
		t = 8.3 ms		6600		
Maximum I^2t for fusing	I^2t	t = 10 ms	No voltage reappplied	281		kA ² s
		t = 8.3 ms		257		
		t = 10 ms	100 % V_{RRM} reappplied	199		
		t = 8.3 ms		182		
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	t = 0.1 to 10 ms, no voltage reappplied		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

Standard Recovery Diodes Vishay High Power Products (Hockey PUK Version), 700 A

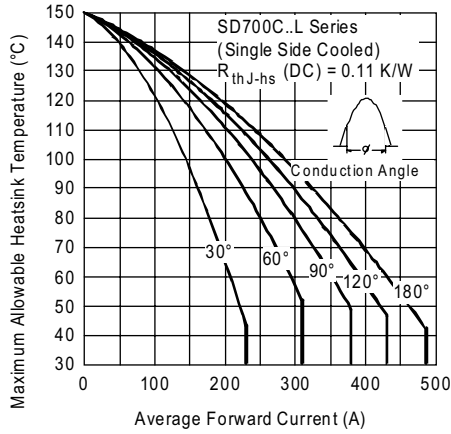


Fig. 1 - Current Ratings Characteristics

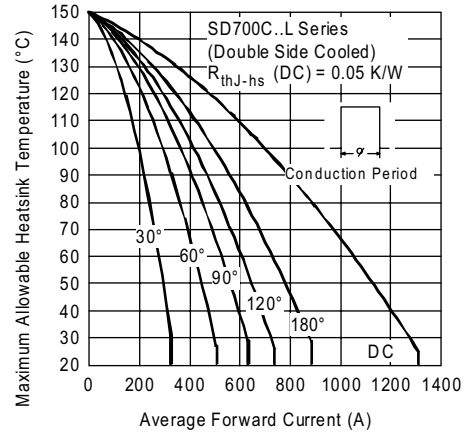


Fig. 4 - Current Ratings Characteristics

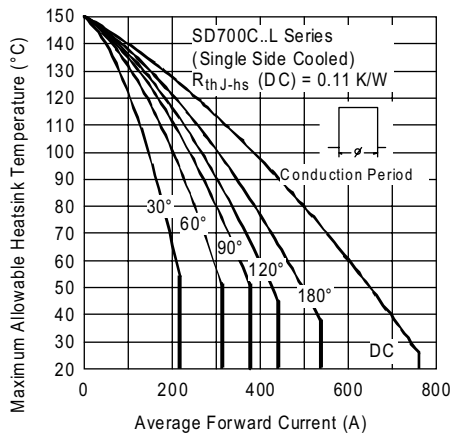


Fig. 2 - Current Ratings Characteristics

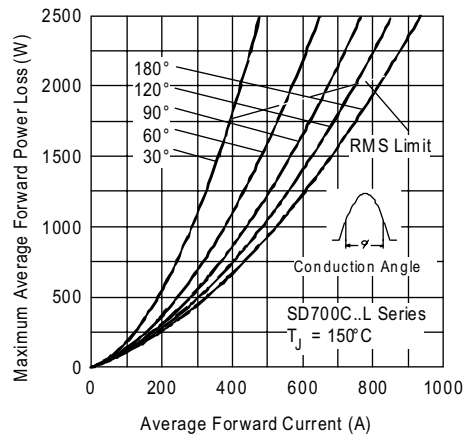


Fig. 5 - Forward Power Loss Characteristics

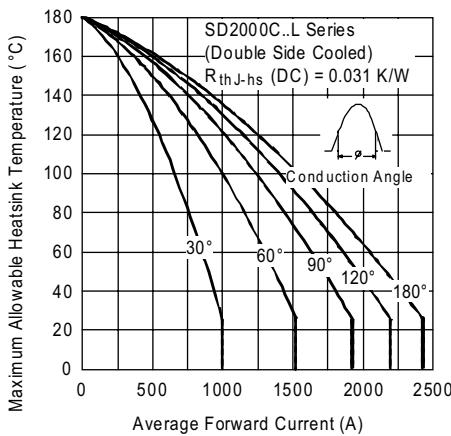


Fig. 3 - Current Ratings Characteristics

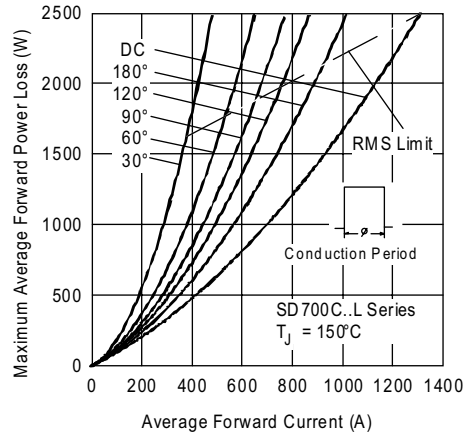


Fig. 6 - Forward Power Loss Characteristics

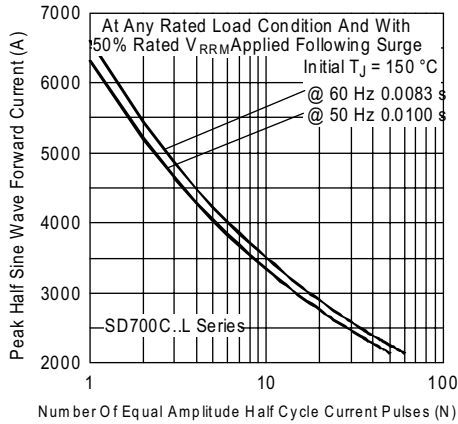


Fig. 7 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

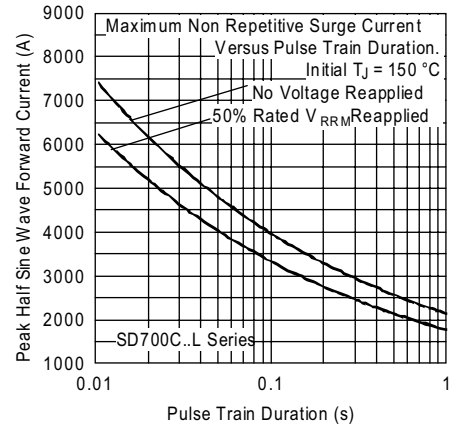


Fig. 8 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

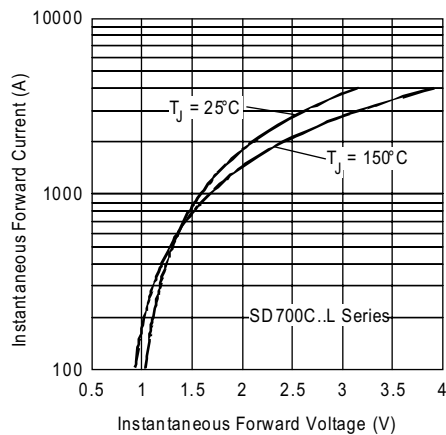


Fig. 9 - Forward Voltage Drop Characteristics

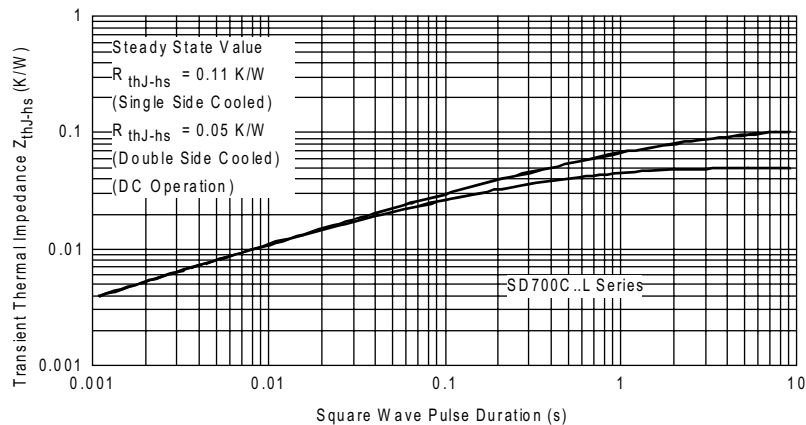
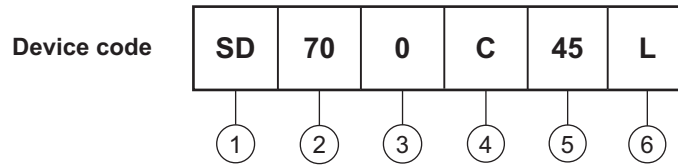


Fig. 10 - Thermal Impedance Z_{thJ-hs} Characteristics



ORDERING INFORMATION TABLE



- 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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