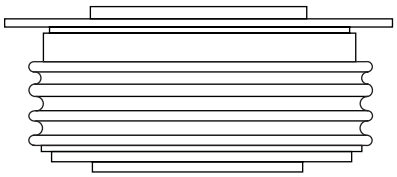
Standard Recovery Diodes (Hockey PUK Version), 1600 A



DO-200AB (B-PUK)

FEATURES

- Wide current range
- High voltage ratings up to 3000 V
- High surge current capabilities
- Diffused junction
- Hockey PUK version
- Case style DO-200AB (B-PUK)
- Lead (Pb)-free

Pb-free
RoHS COMPLIANT

TYPICAL APPLICATIONS

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

PRODUCT SUMMARY	
$I_{T(AV)}$	1600 A

MAJOR RATINGS AND CHARACTERISTICS			
PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{F(AV)}$		1600	A
	T_{hs}	55	°C
$I_{F(RMS)}$		3010	A
	T_{hs}	25	°C
I_{FSM}	50 Hz	16 600	A
	60 Hz	17 400	
I^2t	50 Hz	1386	kA^2s
	60 Hz	1265	
V_{RRM}	Range	400 to 3000	V
T_J		- 40 to 180	°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
SD1500C..L	04	400	500	50
	08	800	900	
	12	1200	1300	
	16	1600	1700	
	20	2000	2100	
	25	2500	2600	
	30	3000	3100	

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			1600 (820)	A
					55 (85)	°C
Maximum RMS forward current	$I_{F(RMS)}$	25 °C heatsink temperature double side cooled			3010	A
Maximum peak, one cycle, non-repetitive surge current	I_{FSM}	t = 10 ms	No voltage reapplied	Sinusoidal half wave, initial $T_J = T_J$ maximum	16 600	
		t = 8.3 ms			17 400	
		t = 10 ms	100 % V_{RRM} reapplied		14 000	
		t = 8.3 ms			14 700	
Maximum I^2t for fusing	I^2t	t = 10 ms	No voltage reapplied		1386	kA^2s
		t = 8.3 ms			1265	
		t = 10 ms	100 % V_{RRM} reapplied		980	
		t = 8.3 ms			895	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	t = 0.1 to 10 ms, no voltage reapplied			13 860	$kA^2\sqrt{s}$
Low level value of threshold voltage	$V_{F(TO)1}$	(16.7 % x π x $I_{F(AV)}$ < I < π x $I_{F(AV)}$), $T_J = T_J$ maximum			0.83	V
High level value of threshold voltage	$V_{F(TO)2}$	(I > π x $I_{F(AV)}$), $T_J = T_J$ maximum			0.95	
Low level value of forward slope resistance	r_{f1}	(16.7 % x π x $I_{F(AV)}$ < I < π x $I_{F(AV)}$), $T_J = T_J$ maximum			0.27	mΩ
High level value of forward slope resistance	r_{f2}	(I > π x $I_{F(AV)}$), $T_J = T_J$ maximum			0.25	
Maximum forward voltage drop	V_{FM}	I_{pk} = 3000 A $T_J = T_J$ maximum, t_p = 10 ms sinusoidal wave			1.64	V

THERMAL AND MECHANICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction operating temperature range	T_J		- 40 to 180	°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)	

ΔR_{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	$T_J = T_J$ 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°	0.035	0.035	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

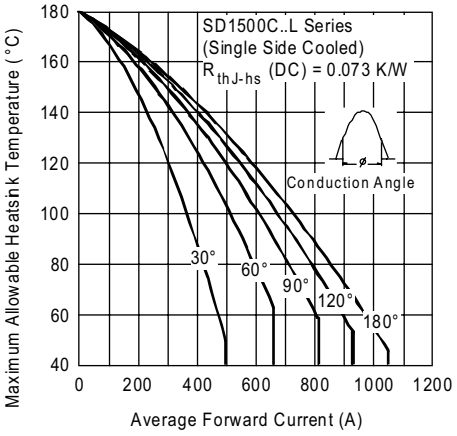


Fig. 1 - Current Ratings Characteristics

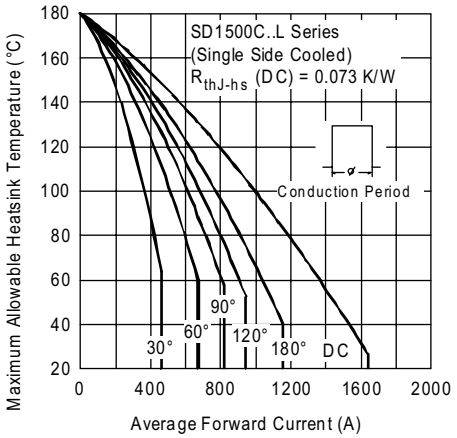


Fig. 2 - Current Ratings Characteristics

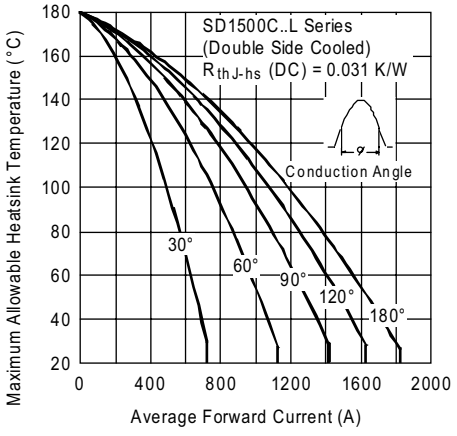


Fig. 3 - Current Ratings Characteristics

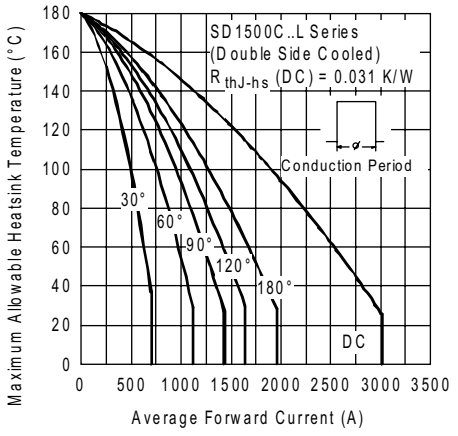


Fig. 4 - Current Ratings Characteristics

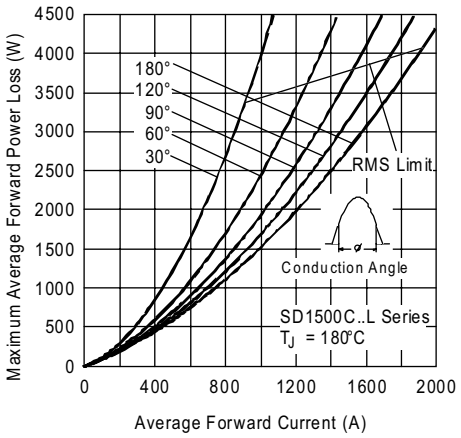


Fig. 5 - Forward Power Loss Characteristics

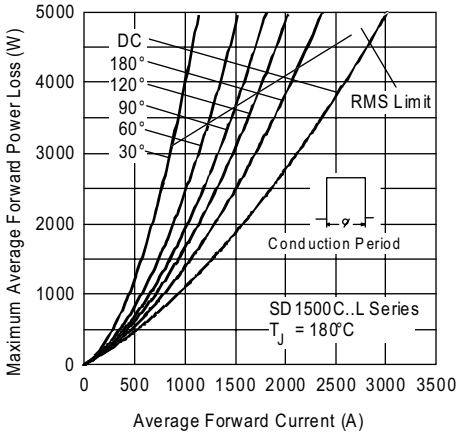


Fig. 6 - Forward Power Loss Characteristics

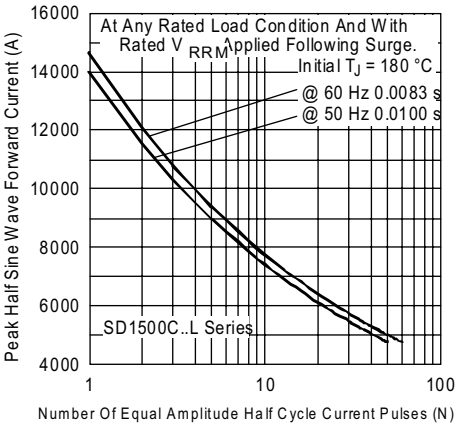


Fig. 7 - Maximum Non-Repetitive Surge Current
Single and Double Side Cooled

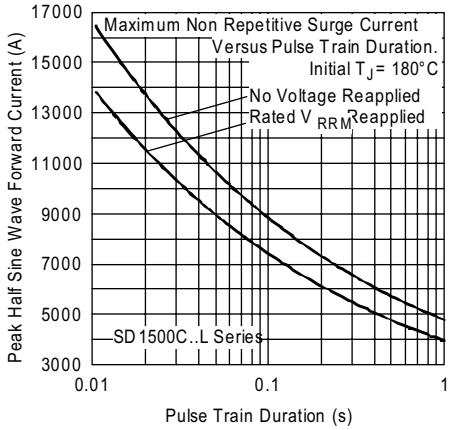


Fig. 8 - Maximum Non-Repetitive Surge Current
Single and Double Side Cooled

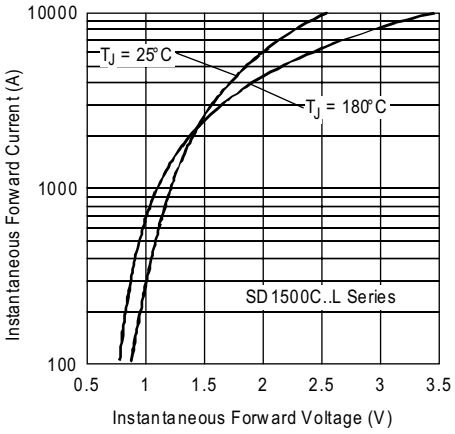


Fig. 9 - Forward Voltage Drop Characteristics

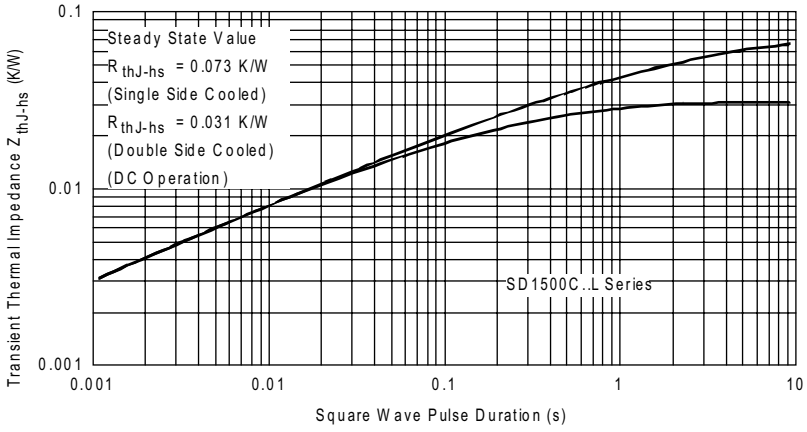


Fig. 10 - Thermal Impedance Z_{thJC} Characteristics

ORDERING INFORMATION TABLE

Device code

SD	150	0	C	30	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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