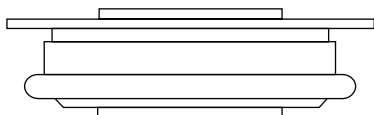


Standard Recovery Diodes (Hockey PUK Version), 800 A



DO-200AA

FEATURES

- Wide current range
- High voltage ratings up to 2400 V
- High surge current capabilities
- Diffused junction
- Hockey PUK version
- Case style DO-200AA
- Lead (Pb)-free
- Designed and qualified for industrial level


RoHS
COMPLIANT

PRODUCT SUMMARY

$I_{F(AV)}$	800 A
-------------	-------

TYPICAL APPLICATIONS

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

MAJOR RATINGS AND CHARACTERISTICS

PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{F(AV)}$		800	A
	T_{hs}	55	°C
$I_{F(RMS)}$		1435	A
	T_{hs}	25	°C
I_{FSM}	50 Hz	8250	A
	60 Hz	8640	
I^2t	50 Hz	340	kA ² s
	60 Hz	311	
V_{RRM}	Range	400 to 2400	V
T_J		- 40 to 190	°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 $T_J = 150\text{ °C}$ mA
SD400C..C	04	400	500	15
	08	800	900	
	12	1200	1300	
	16	1600	1700	
	20	2000	2100	
	24	2400	2500	

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			800 (425)	A
					55 (85)	°C
Maximum RMS forward current	I _{F(RMS)}	25 °C heatsink temperature double side cooled			1435	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	8250	
		t = 8.3 ms			8640	
		t = 10 ms	50 % V _{RRM} reapplied		6940	
		t = 8.3 ms			7265	
Maximum I ² t for fusing	I ² t	t = 10 ms	No voltage reapplied		340	kA ² s
		t = 8.3 ms			311	
		t = 10 ms	50 % V _{RRM} reapplied		241	
		t = 8.3 ms			220	
Maximum I ² √t for fusing	I ² √t	t = 0.1 to 10 ms, no voltage reapplied			3400	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			0.80	V
High level value of threshold voltage	V _{F(TO)2}	(I > π × I _{F(AV)}), T _J = T _J maximum			0.83	
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			0.55	mΩ
High level value of forward slope resistance	r _{f2}	(I > π × I _{F(AV)}), T _J = T _J maximum			0.53	
Maximum forward voltage drop	V _{FM}	I _{pk} = 1930 A, T _J = T _J maximum, t _p = 10 ms sinusoidal wave			1.86	V

THERMAL AND MECHANICAL SPECIFICATIONS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction operating temperature range	T_J		- 40 to 190	°C
Maximum storage temperature range	T_{Stg}		- 55 to 200	
Maximum thermal resistance, junction to heatsink	R_{thJ-hs}	DC operation single side cooled	0.163	K/W
		DC operation double side cooled	0.073	
Mounting force, ± 10 %			4900 (500)	N (kg)
Approximate weight			70	g
Case style		See dimensions - link on page 5	DO-200AA	

ΔR_{thJ-hs} CONDUCTION						
CONDUCTION ANGLE	SINUSOIDAL CONDUCTION		RECTANGULAR CONDUCTION		TEST CONDITIONS	UNITS
	SINGLE SIDE	DOUBLE SIDE	SINGLE SIDE	DOUBLE SIDE		
180°	0.017	0.018	0.011	0.012	T _J = T _J maximum	K/W
120°	0.020	0.020	0.020	0.020		
90°	0.025	0.025	0.027	0.027		
60°	0.037	0.036	0.038	0.038		
30°	0.064	0.062	0.065	0.062		

Note

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

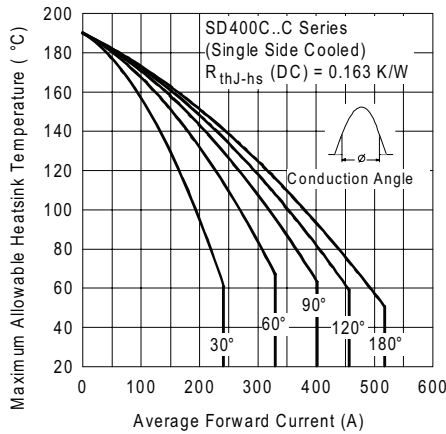


Fig. 1 - Current Ratings Characteristics

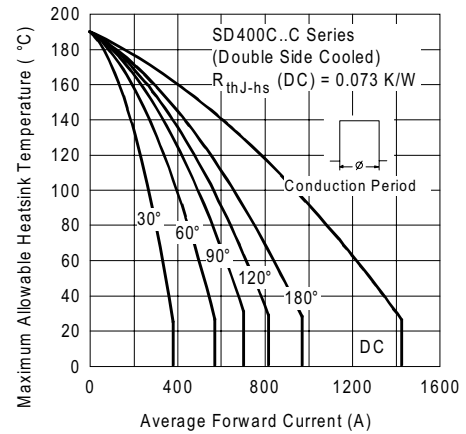


Fig. 4 - Current Ratings Characteristics

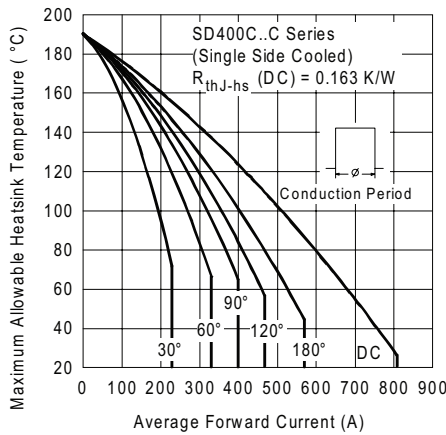


Fig. 2 - Current Ratings Characteristics

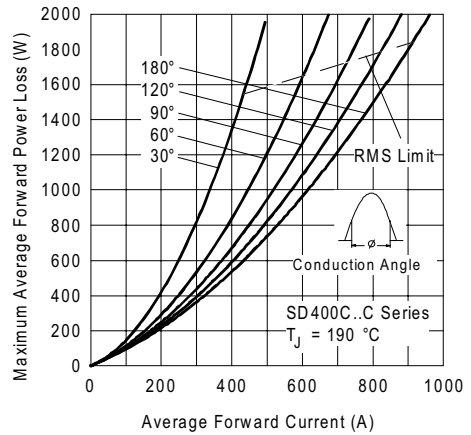


Fig. 5 - Forward Power Loss Characteristics

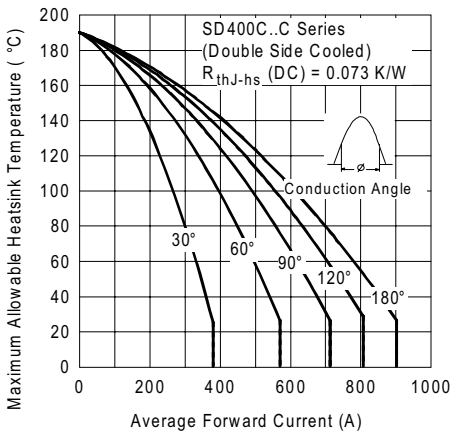


Fig. 3 - Current Ratings Characteristics

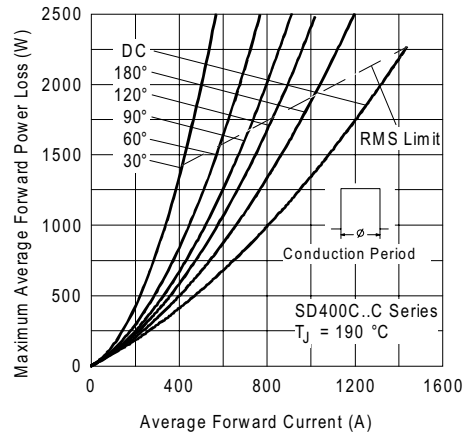


Fig. 6 - Forward Power Loss Characteristics

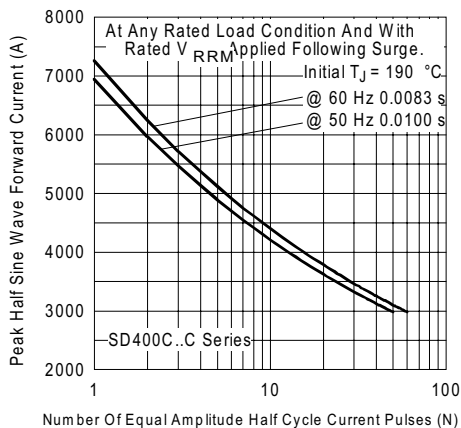


Fig. 7 - Maximum Non-Repetitive Surge Current
Single and Double Side Cooled

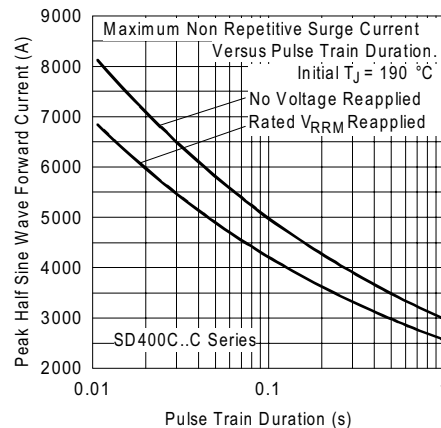


Fig. 8 - Maximum Non-Repetitive Surge Current
Single and Double Side Cooled

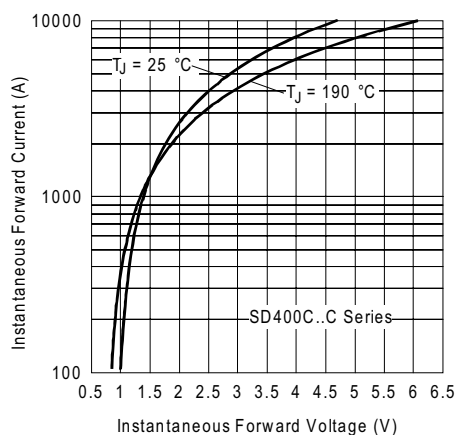


Fig. 9 - Forward Voltage Drop Characteristics

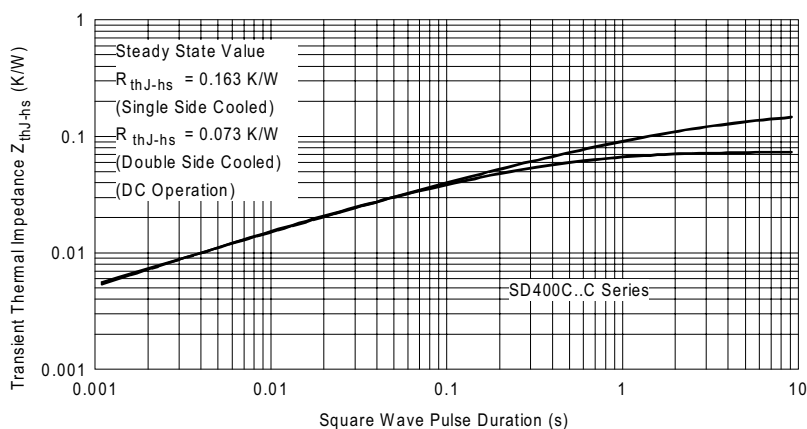


Fig. 10 - Thermal Impedance Z_{thJC} Characteristics



ORDERING INFORMATION TABLE

Device code	SD	40	0	C	24	C
	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 | - | C = PUK case DO-200AA |

LINKS TO RELATED DOCUMENTS	
Dimensions	http://www.vishay.com/doc?95248



Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.