

COMPLIANT

Standard Recovery Diodes, (Hockey PUK Version), 800 A



A-PUK (DO-200AA)

PRIMARY CHARACTERISTICS				
I _{F(AV)}	800 A			
Package	A-PUK (DO-200AA)			
Circuit configuration	Single			

FEATURES

- Wide current range
- High voltage ratings up to 2400 V
- High surge current capabilities
- Diffused junction
- Hockey PUK version
- Case style A-PUK (DO-200AA)
- Designed and qualified for industrial level
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

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

MAJOR RATINGS AND CHARACTERISTICS				
PARAMETER	TEST CONDITIONS	VALUES	UNITS	
1		800	Α	
I _{F(AV)}	T _{hs}	55	°C	
1		1435	А	
I _F (RMS)	T _{hs}	25	°C	
1	50 Hz	8250	Α	
I _{FSM}	60 Hz	8640		
l ² t	50 Hz	340	kA ² s	
1-1	60 Hz	311	KA-S	
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 °C mA		
	04	400	500			
VS-SD400CC	08	800	900			
	12	1200	1300	15		
	16	1600	1700	15		
	20	2000	2100			
	24	2400	2500			



FORWARD CONDUCTION						
PARAMETER	SYMBOL	TEST CONDITIONS			VALUES	UNITS
Maximum average forward current		180° conduction, half sine wave		800 (425)	Α	
at heatsink temperature	I _{F(AV)}	Double side (single side) coole	d	55 (85)	°C
Maximum RMS forward current	I _{F(RMS)}	25 °C heatsin	k temperature do	uble side cooled	1435	
		t = 10 ms	No voltage		8250	
Maximum peak, one-cycle forward,		t = 8.3 ms	reapplied	Sinusoidal half wave,	8640	Α
non-repetitive surge current	I _{FSM}	t = 10 ms	50 % V _{RRM} reapplied		6940	
		t = 8.3 ms			7265	
Maximum I ² t for fusing	l ² t	t = 10 ms	No voltage	initial $T_J = T_J$ maximum	340	kA ² s
		t = 8.3 ms	reapplied		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	kA²√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		0.80	V	
High level value of threshold voltage	V _{F(TO)2}	$(I > \pi \times I_{F(AV)}), T_J = T_J \text{ maximum}$			0.83	V
Low level value of forward slope resistance	r _{f1}	(16.7 % x π x $I_{F(AV)} < I < \pi$ x $I_{F(AV)}$), $T_J = T_J$ maximum			0.55	mΩ
High level value of forward slope resistance	r _{f2}	$(I > \pi \times I_{F(AV)}), T_J = T_J \text{ maximum}$			0.53	1115.2
Maximum forward voltage drop	V _{FM}	$I_{pk} = 1930 \text{ A}, T_J = T_J \text{ maximum, } t_p = 10 \text{ ms sinusoidal}$ wave			1.86	V

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

△R _{thJ-hs} CONDUCTION						
CONDUCTION ANGLE	SINUSOIDAL CONDUCTION		RECTANGULAR CONDUCTION		TEST CONDITIONS	LIMITO
CONDUCTION ANGLE	SINGLE SIDE	DOUBLE SIDE	SINGLE SIDE	DOUBLE SIDE	TEST CONDITIONS	UNITS
180°	0.017	0.018	0.011	0.012	$T_J = T_J$ maximum	
120°	0.020	0.020	0.020	0.020		
90°	0.025	0.025	0.027	0.027		K/W
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

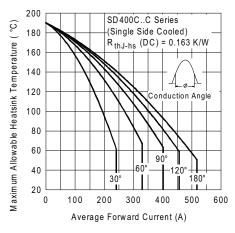


Fig. 1 - Current Ratings Characteristics

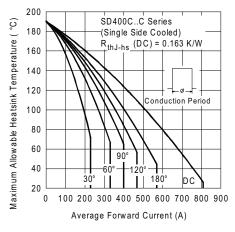


Fig. 2 - Current Ratings Characteristics

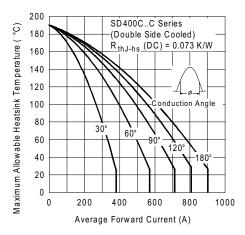


Fig. 3 - Current Ratings Characteristics

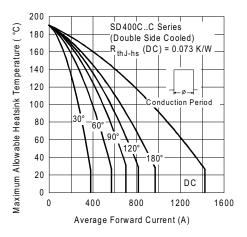


Fig. 4 - Current Ratings Characteristics

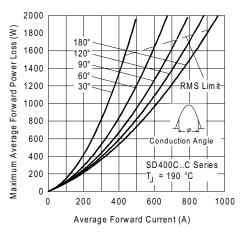


Fig. 5 - Forward Power Loss Characteristics

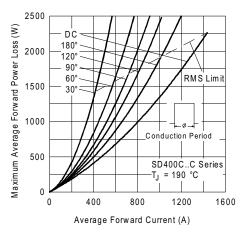


Fig. 6 - Forward Power Loss Characteristics

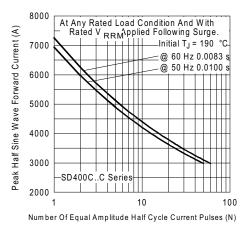


Fig. 7 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

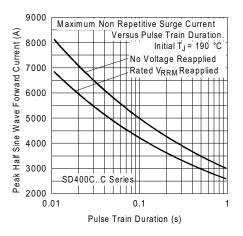


Fig. 8 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

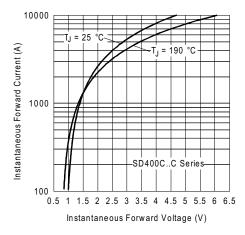


Fig. 9 - Forward Voltage Drop Characteristics

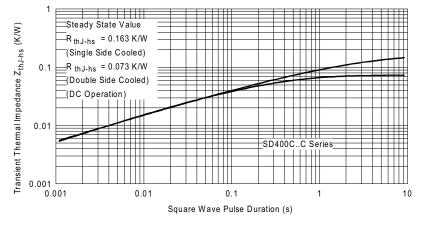
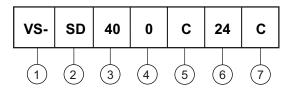


Fig. 10 - Thermal Impedance Z_{thJC} Characteristics



ORDERING INFORMATION TABLE

Device code



1 - Vishay Semiconductors product

2 - Diode

Essential part number

- 0 = standard recovery

5 - C = ceramic PUK

Voltage code x 100 = V_{RRM} (see Voltage Ratings table)

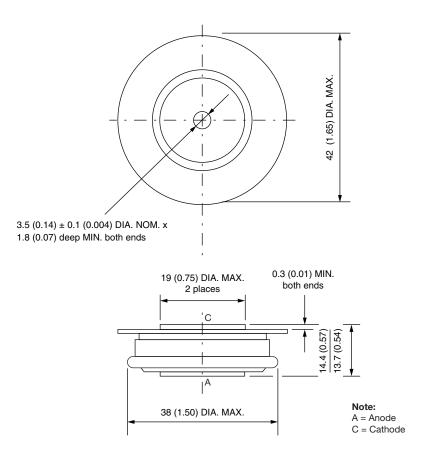
- C = PUK case A-PUK (DO-200AA)

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



DO-200AA

DIMENSIONS in millimeters (inches)



Quote between upper and lower pole pieces has to be considered after application of mounting force (see Thermal and Mechanical Specifications)



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