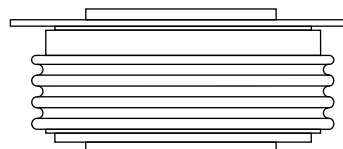


Standard Recovery Diodes (Hockey PUK Version), 4535A

FEATURES

- Wide current range
- Voltage ratings: 200V to 600V
- High surge current capabilities
- Diffused junction
- Hockey PUK version
- Case style DO-220AC(K-PUK),
Nell's D-type Capsule
- Lead (Pb)-free



DO-220AC(K-PUK)
(Nell's D-type Capsule)

TYPICAL APPLICATIONS

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

PRODUCT SUMMARY

$I_{F(AV)}$	4535A
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MAJOR RATINGS AND CHARACTERISTICS

PARAMETER	TEST CONDITIONS	VALUES	UNIT
$I_{F(AV)}$		4535	A
	T_{hs}	55	°C
$I_{F(RMS)}$		8200	A
	T_{hs}	25	°C
I_{FSM}	50 HZ	44000	A
	60 HZ	46070	
I^2t	50 HZ	9680	kA ² s
	60 HZ	8808	
V_{RRM}		200 to 600	V
T_J	Typical	-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 $T_J = T_J$ MAXIMUM mA
D4535D	02	200	300	50
	04	400	500	
	06	600	700	

FORWARD CONDUCTION						
PARAMETER	SYMBOL	TEST CONDITIONS			VALUES	UNIT
Maximum average forward current at heatsink temperature	I _{F(AV)}	180° conduction, half sine wave Double side (single side) cooled			4535(2300)	A
					55(85)	°C
Maximum RMS forward current	I _{F(RMS)}	25°C heatsink temperature double side cooled			8200	A
Maximum peak, one cycle non-reptitive surge current	I _{FSM}	t = 10ms	No voltage reapplied	Sinusoidal half wave, initial T _J = T _J maximum	44000	A
		t = 8.3ms			46070	
		t = 10ms	100%V _{RRM} reapplied		36960	
		t = 8.3ms			38700	
Maximum I ² t for fusing	I ² t	t = 10ms	No voltage reapplied		9680	kA ² s
		t = 8.3ms			8808	
		t = 10ms	100%V _{RRM} reapplied		6830	
		t = 8.3ms			6215	
Maximum I ² √t for fusing	I ² √t	t = 0.1 to 10 ms, no voltage reapplied			96800	kA ² √s
Maximum value of threshold voltage	V _{F(TO)}	I _{FM} =13630A, T _J =T _J maximum			0.770	V
Maximum value of forward slope resistance	r _t				0.055	mΩ
Maximum forward voltage drop	V _{FM}	I _{pk} = 6400A	T _J =T _J maximum	1.10	V	
		I _{pk} = 13630A		1.40		

THERMAL AND MECHANICAL SPECIFICATIONS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNIT
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	0.044	K/W
		DC operation double side cooled	0.022	
Mounting force, ±10%			22250 (2250)	N (kg)
Approximate weight			425	g
Case style		TO-200AC (K-PUK), Nell's D-type Capsule		

△ R _{thJC} CONDUCTION						
CONDUCTION ANGEL	SINUSOIDAL CONDUCTION		RECTANGULAR CONDUCTION		TEST CONDUCTIONS	UNITS
	SINGLE SIDE	DOUBLE SIDE	SINGLE SIDE	DOUBLE SIDE		
180°	0.002	0.002	0.001	0.001	T _J = T _J maximum	K/W
120°	0.002	0.002	0.002	0.002		
90°	0.003	0.003	0.003	0.003		
60°	0.004	0.004	0.004	0.004		
30°	0.007	0.007	0.007	0.007		

Note

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

Nell High Power Products

Fig.1 Current ratings characteristics

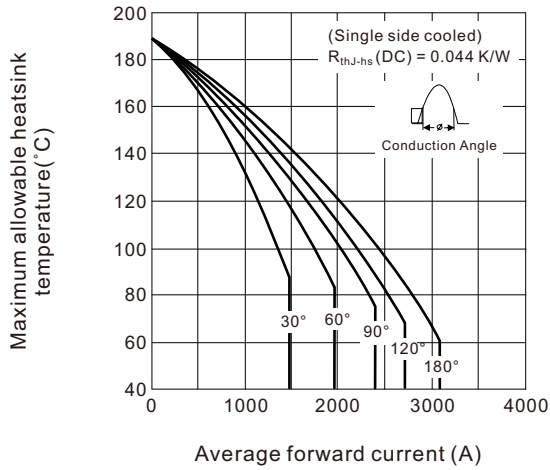


Fig.2 Current ratings characteristics

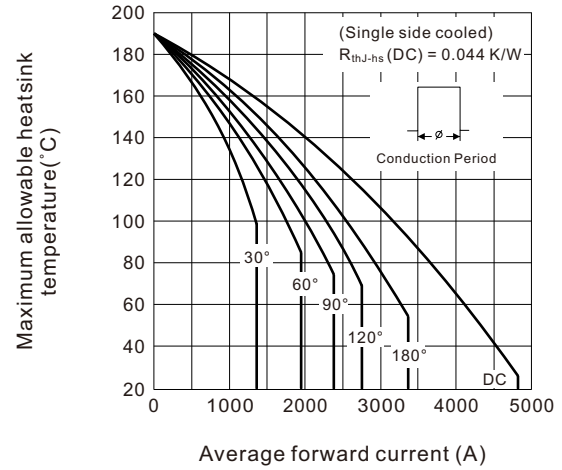


Fig.3 Current ratings characteristics

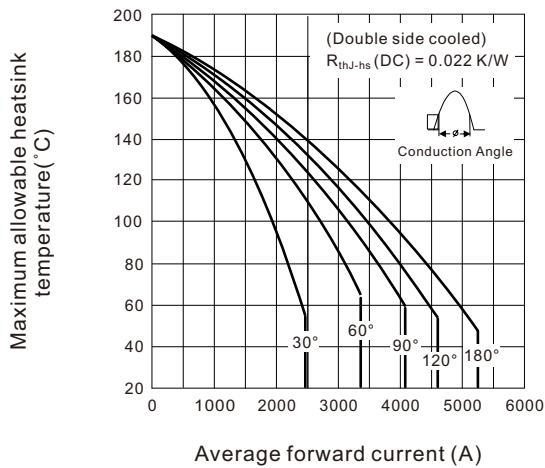


Fig.4 Current ratings characteristics

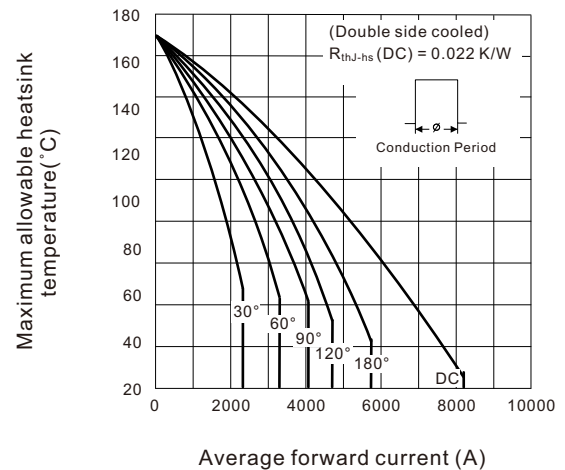


Fig.5 Forward power loss characteristics

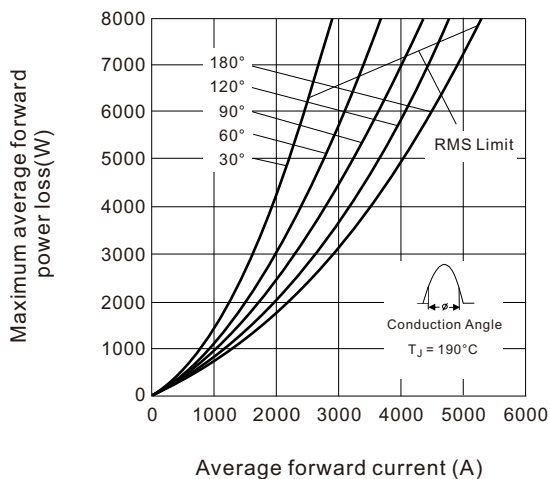


Fig.6 Forward power loss characteristics

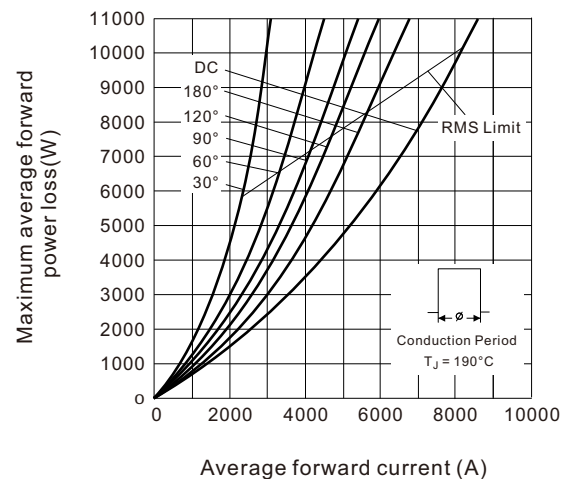


Fig.7 Maximum non-repetitive surge current single and double side cooled

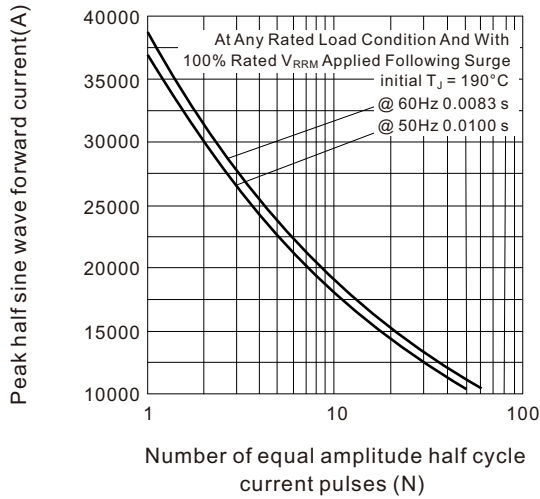


Fig.8 Maximum non-repetitive surge current single and double side cooled

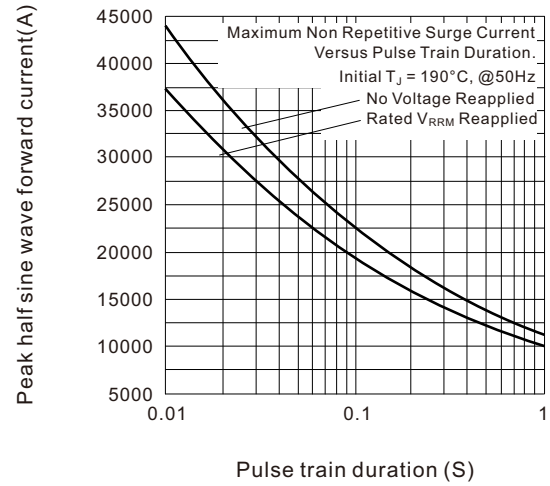


Fig.9 Forward voltage drop characteristics

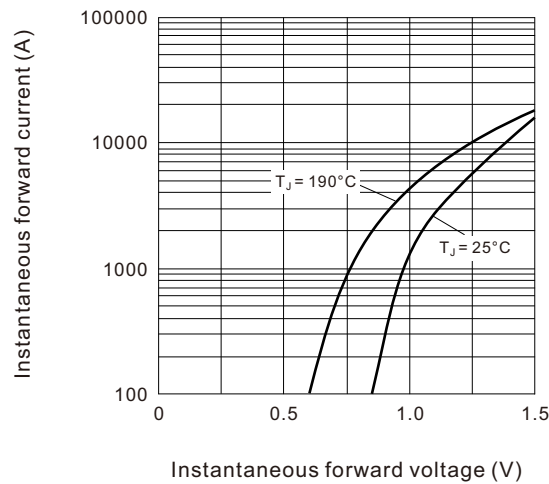
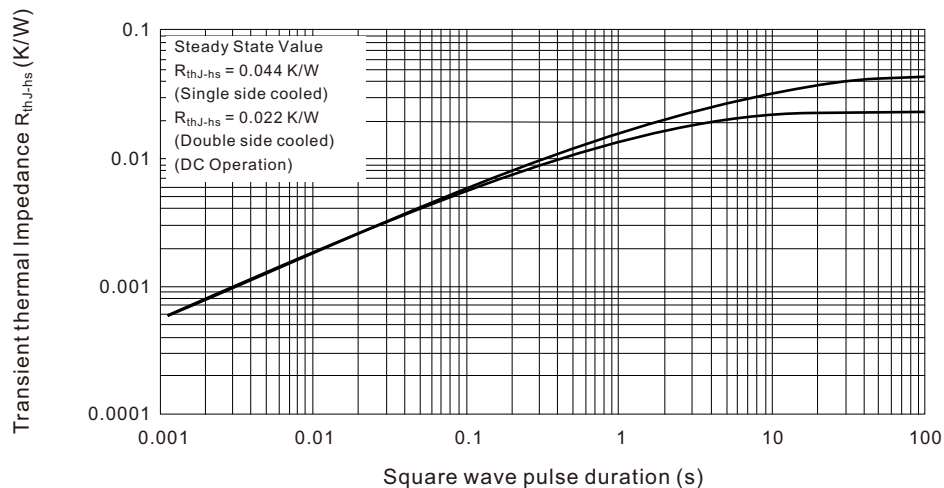


Fig.10 Thermal Impedance R_{thJ-hs} characteristics



ORDERING INFORMATION TABLE

Device code	D	4535	D	06
	①	②	③	④

- ① - "D" for standard recovery diode
- ② - Maximum average forward current, "4535" for 4535A
- ③ - Case style : "D" for Nell's D-type Capsule, DO-200AC (K-PUK)
- ④ - Voltage code, code x 100 = V_{RRM}

DO-220AC (K-PUK), Nell's D-type Capsule

