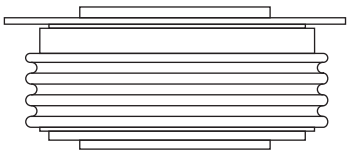
Standard Recovery Diodes (Hockey PUK Version), 3270A

FEATURES

- Wide current range
- High voltage ratings up to 2200V
- High surge current capabilities
- Diffused junction
- Hockey PUK version
- Case style DO-220AC(K-PUK), Nell's D-type Capsule
- Lead (Pb)-free



DO-200AC(K-PUK)
(Nell's D-type Capsule)

TYPICAL APPLICATIONS

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

PRODUCT SUMMARY	
$I_{F(AV)}$	3270A

MAJOR RATINGS AND CHARACTERISTICS			
PARAMETER	TEST CONDITIONS	VALUES	UNIT
$I_{F(AV)}$		3270	A
	T_{hs}	55	°C
$I_{F(RMS)}$		5950	A
	T_{hs}	25	°C
I_{FSM}	50 HZ	31000	A
	60 HZ	32460	
I^2t	50 HZ	4805	kA^2s
	60 HZ	4375	
V_{RRM}		800 to 2200	V
T_J	Typical	-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
D3270D	08	800	900	75
	12	1200	1300	
	16	1600	1700	
	20	2000	2100	
	22	2200	2300	

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			3270(1640)	A
					55(85)	°C
Maximum RMS forward current	$I_{F(RMS)}$	25°C heatsink temperature double side cooled			5950	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	31000	A
		t = 8.3ms			32460	
		t = 10ms	100%V_{RRM} reapplied		26040	
		t = 8.3ms			27270	
Maximum I^2t for fusing	I^2t	t = 10ms	No voltage reapplied		4805	kA^2s
		t = 8.3ms			4375	
		t = 10ms	100%V_{RRM} reapplied		3390	
		t = 8.3ms			3090	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	t = 0.1 to 10 ms, no voltage reapplied			48050	$kA^2\sqrt{s}$
Maximum value of threshold voltage	$V_{F(TO)}$	I_{FM} =9800A , T_J = T_J maximum			0.83	V
Maximum value of forward slope resistance	r_t	I_{FM} =9800A , T_J = T_J maximum			0.16	mΩ
Maximum forward voltage drop	V_{FM}	I_{pk} = 6400A, T_J = T_J maximum, t_p = 10 ms sinusoidal wave			1.50	V

THERMAL AND MECHANICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNIT
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	0.042	K/W
		DC operation double side cooled	0.020	
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

Fig.1 Current ratings characteristics

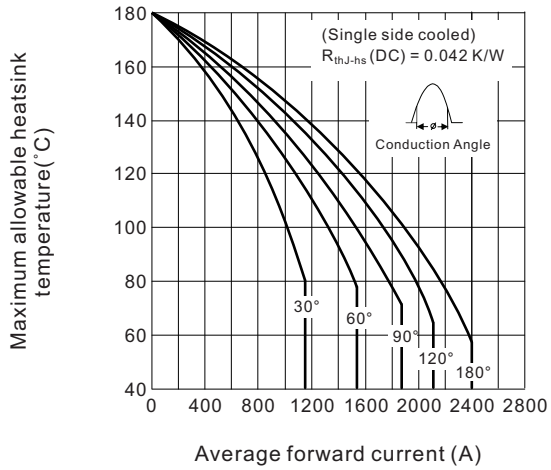


Fig.2 Current ratings characteristics

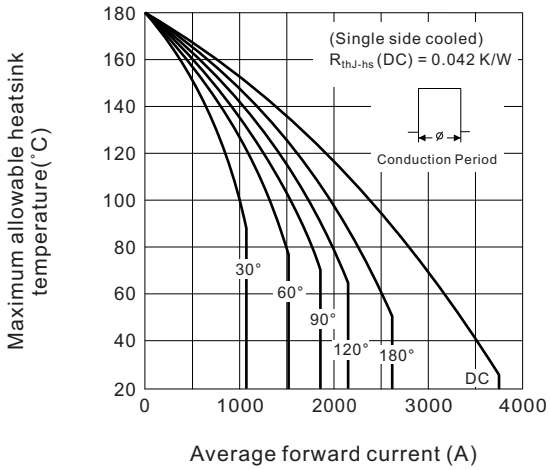


Fig.3 Current ratings characteristics

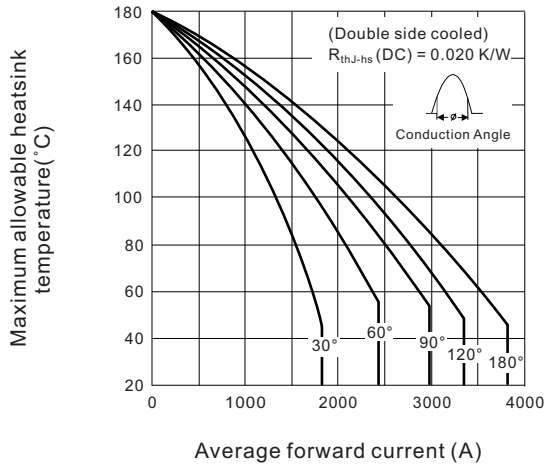


Fig.4 Current ratings characteristics

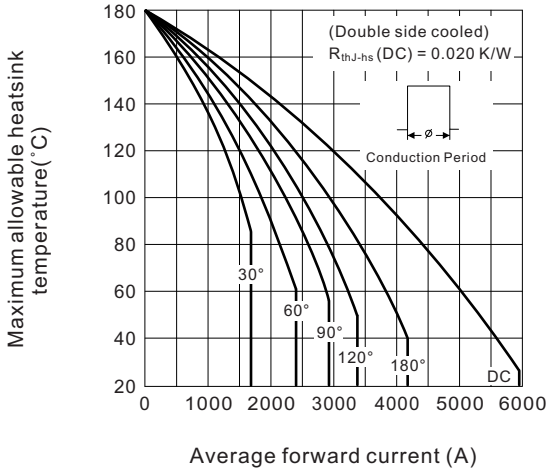


Fig.5 Forward power loss characteristics

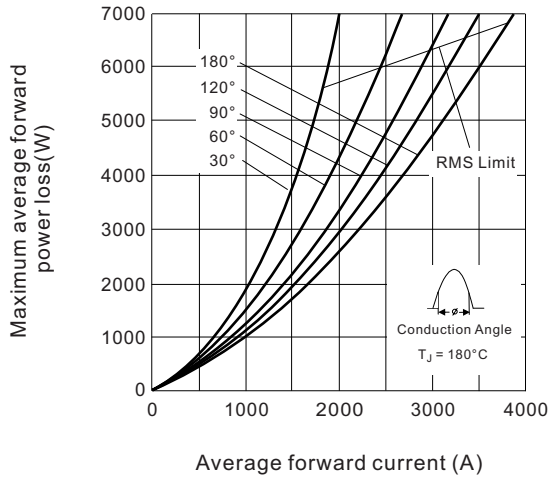


Fig.6 Forward power loss characteristics

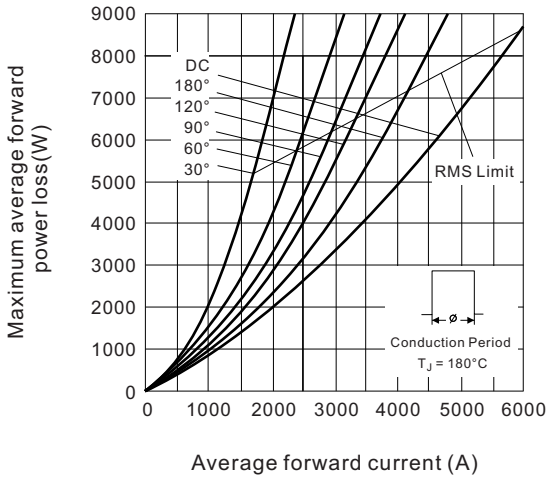


Fig.7 Maximum non-repetitive surge current single and double side cooled

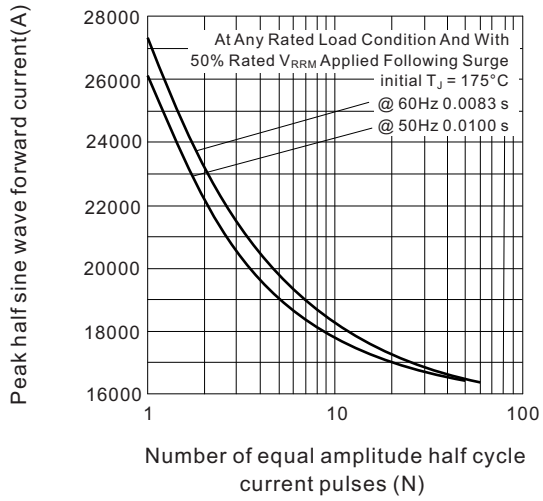


Fig.8 Maximum non-repetitive surge current single and double side cooled

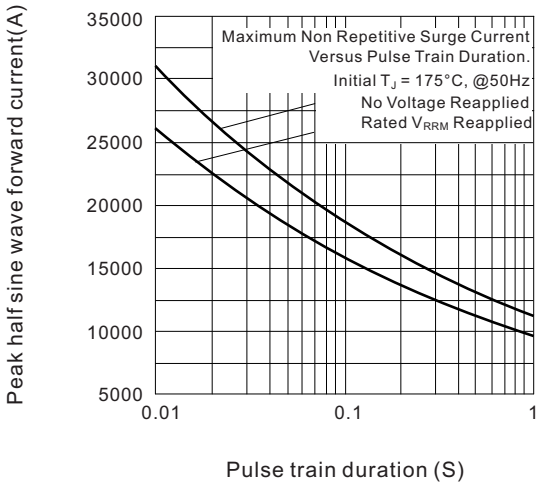


Fig.9 Forward voltage drop characteristcs

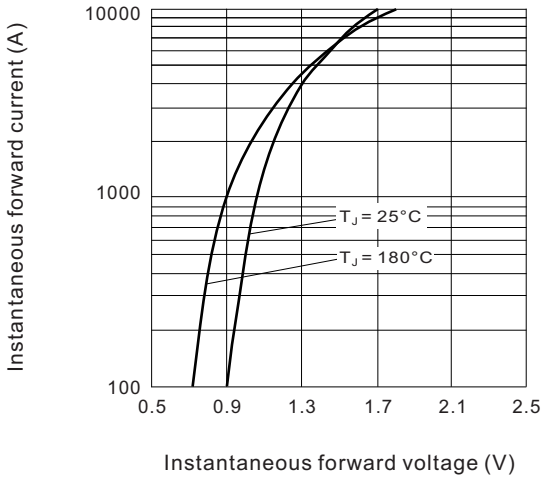
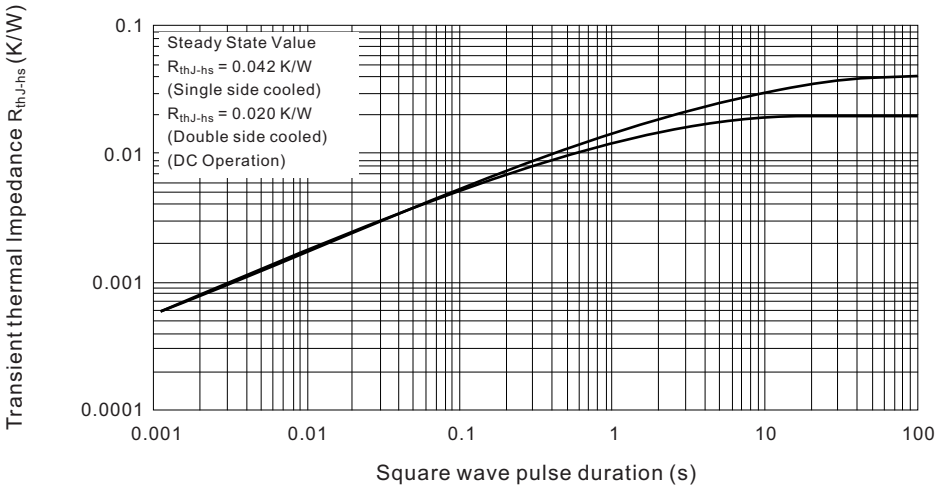


Fig.10 Thermal Impedance R_{thJ-hs} characteristics



ORDERING INFORMATION TABLE

Device code	D	3270	D	20
	1	2	3	4

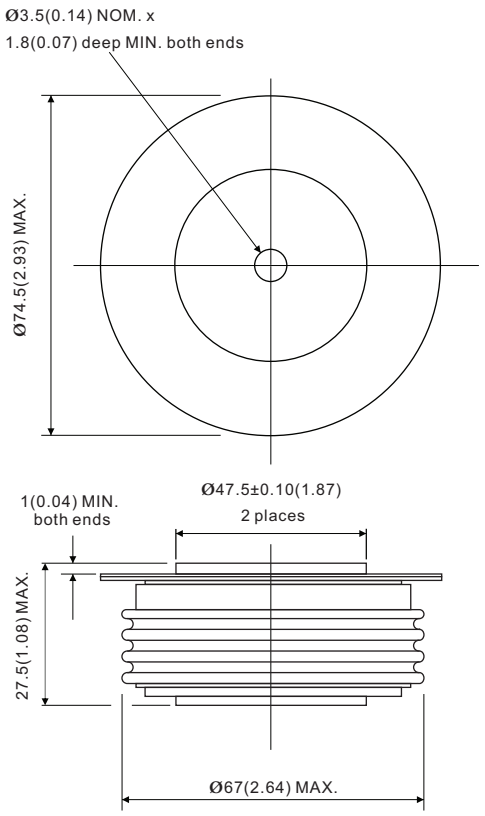
1 - "D" for standard recovery diode

2 - Maximum average forward current, "3270" for 3270A

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



All dimensions in millimeters (inches)