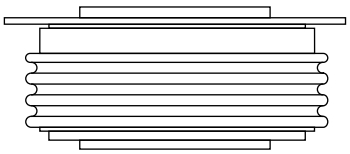
Standard Recovery Diodes (Hockey PUK Version), 2500A

FEATURES

- Wide current range
- High voltage ratings up to 2500V
- 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	
$I_{F(AV)}$	2500A

MAJOR RATINGS AND CHARACTERISTICS			
PARAMETER	TEST CONDITIONS	VALUES	UNIT
$I_{F(AV)}$		2500	A
	T_{hs}	55	°C
$I_{F(RMS)}$		4300	A
	T_{hs}	25	°C
I_{FSM}	50 HZ	26000	A
	60 HZ	27200	
I^2t	50 HZ	3380	kA^2s
	60 HZ	3070	
V_{RRM}		800 to 2500	V
T_J	Typical	-40 to 175	°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
D2500D	08	800	900	75
	12	1200	1300	
	16	1600	1700	
	20	2000	2100	
	25	2500	2600	

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			2500(1300)	A
					55(85)	°C
Maximum RMS forward current	$I_{F(RMS)}$	25°C heatsink temperature double side cooled			4300	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	26000	A
		t = 8.3ms			27200	
		t = 10ms	100%V_{RRM} reapplied		21800	
		t = 8.3ms			22850	
Maximum I^2t for fusing	I^2t	t = 10ms	No voltage reapplied		3380	kA^2s
		t = 8.3ms			3070	
		t = 10ms	100%V_{RRM} reapplied		2380	
		t = 8.3ms			2170	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	t = 0.1 to 10 ms, no voltage reapplied			33800	$kA^2\sqrt{s}$
Low level value of threshold voltage	$V_{F(TO)1}$	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, $T_J = T_J$ maximum			0.83	V
High level value of threshold voltage	$V_{F(TO)2}$	$(I > \pi \times I_{F(AV)})$, $T_J = T_J$ maximum			1.00	
Low level value of forward slope resistance	r_{t1}	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, $T_J = T_J$ maximum			0.19	mΩ
High level value of forward slope resistance	r_{t2}	$(I > \pi \times I_{F(AV)})$, $T_J = T_J$ maximum			0.17	
Maximum forward voltage drop	V_{FM}	I_{pk} = 4000A, $T_J = T_J$ maximum, t_p = 10 ms sinusoidal wave			1.55	V

THERMAL AND MECHANICAL SPECIFICATIONS				
PARAMETER	**SYMBOL**	**TEST CONDITIONS**	**VALUES**	**UNIT**
Maximum junction operating temperature range	T_J		-40 to 175	°C
Maximum storage temperature range	T_{stg}		-55 to 200	
Maximum thermal resistance, junction to heatsink	$R_{thJ\text{-}hs}$	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 $R_{thJ\text{-}hs}$ when devices operate at different conduction angles than DC

Fig.1 Current ratings characteristics

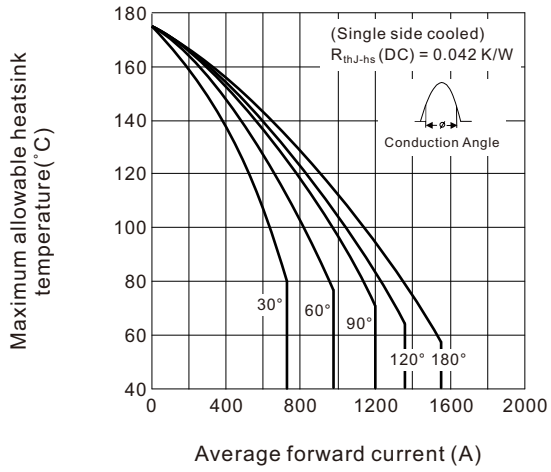


Fig.2 Current ratings characteristics

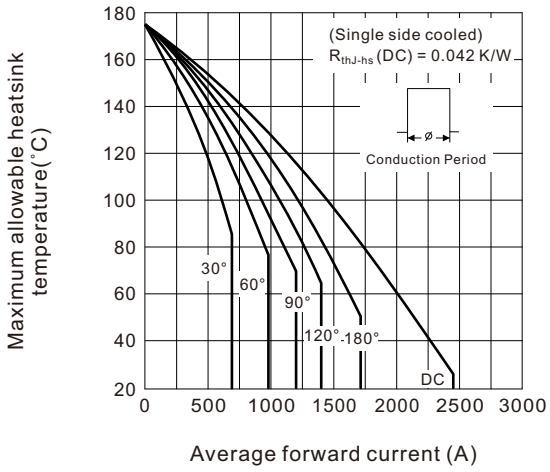


Fig.3 Current ratings characteristics

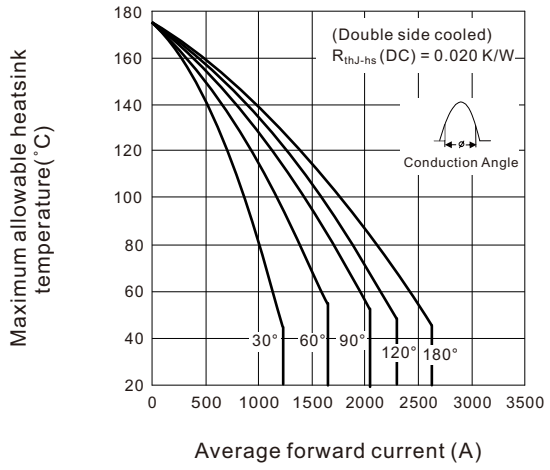


Fig.4 Current ratings characteristics

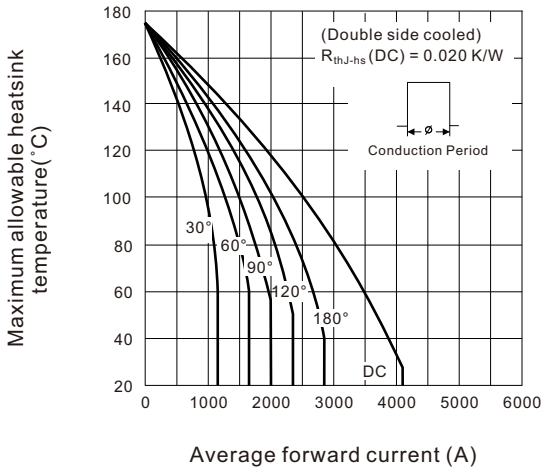


Fig.5 Forward power loss characteristics

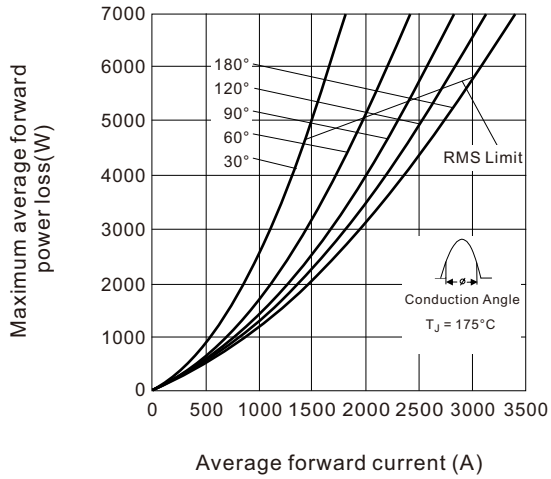


Fig.6 Forward power loss characteristics

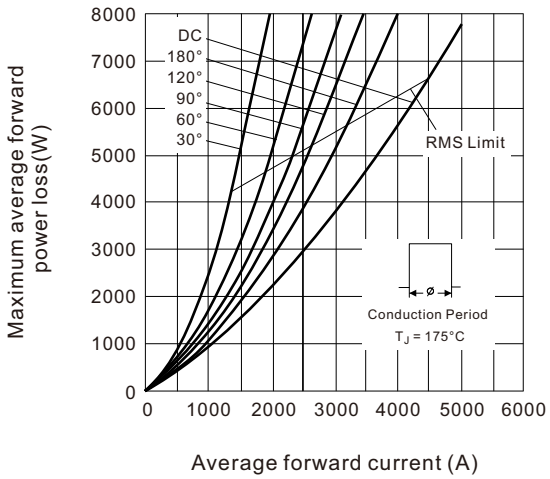


Fig.7 Maximum non-repetitive surge current single and double side cooled

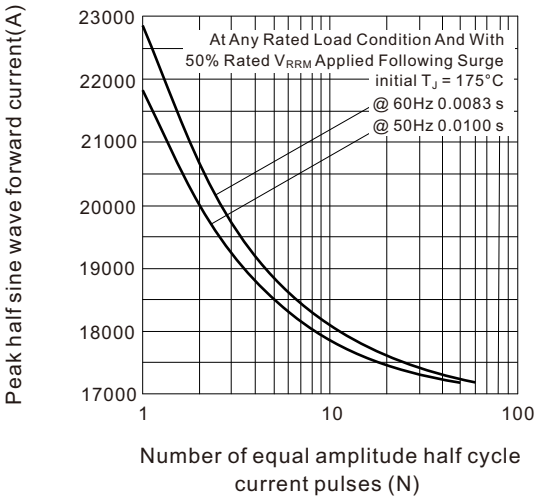


Fig.8 Maximum non-repetitive surge current single and double side cooled

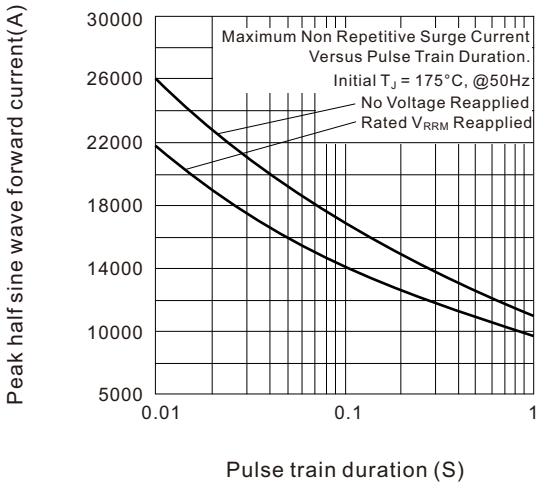


Fig.9 Forward voltage drop characteristcs

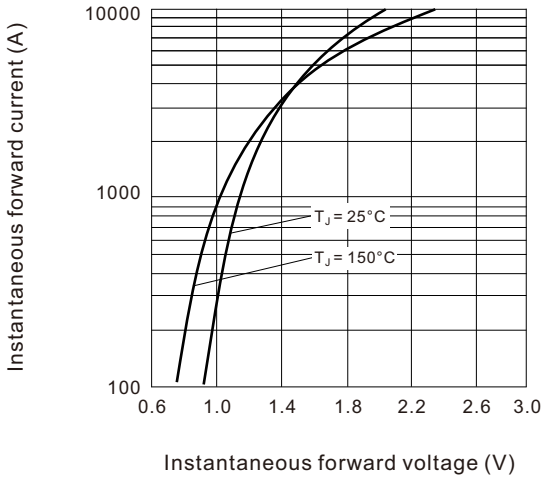
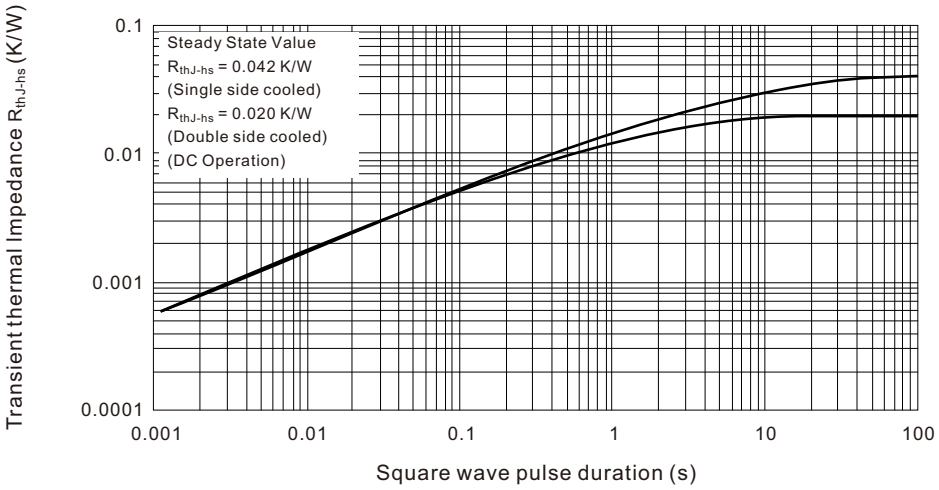


Fig.10 Thermal Impedance $R_{thJ\text{-}hs}$ characteristics



ORDERING INFORMATION TABLE

Device code	D	2500	D	20
	1	2	3	4

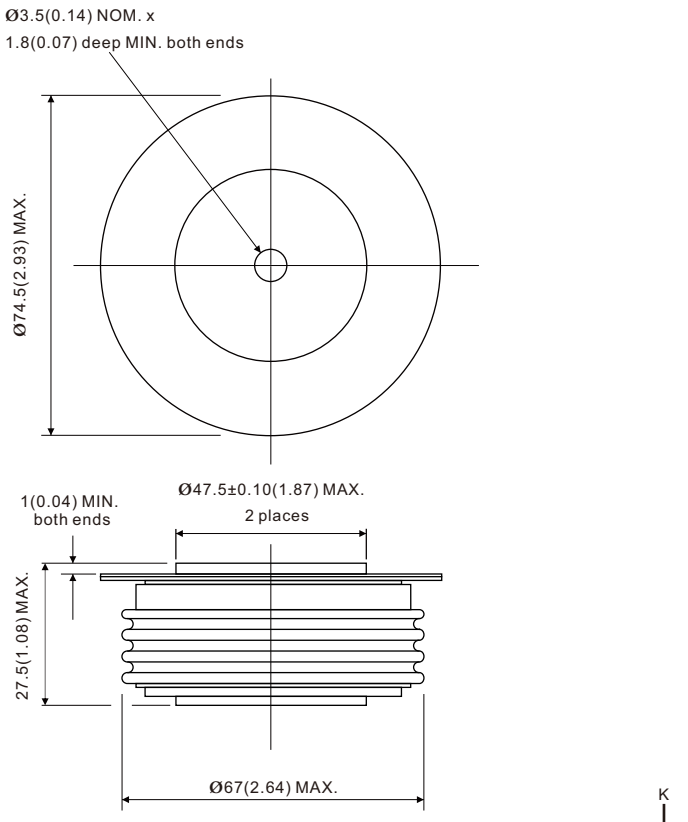
1 - "D" for standard recovery diode

2 - Maximum average forward current, "2500" for 2500A

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)