

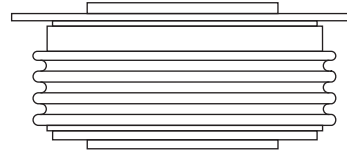
## Standard Recovery Diodes (Hockey PUK Version), 1400A

### FEATURES

- Wide current range
- High voltage ratings up to 3600 V
- High surge current capabilities
- Diffused junction
- Hockey PUK version
- Case style DO-200AB(B-PUK), Nell's C-type Capsule
- Lead (Pb)-free

### TYPICAL APPLICATIONS

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



DO-200AB(B-PUK)  
(Nell's C-type Capsule)

PRODUCT SUMMARY	
$I_{T(AV)}$	1400A

MAJOR RATINGS AND CHARACTERISTICS			
PARAMETER	TEST CONDITIONS	VALUES	UNIT
$I_{F(AV)}$		1400	A
	$T_{hs}$	55	°C
$I_{F(RMS)}$		2600	A
	$T_{hs}$	25	°C
$I_{FSM}$	50 HZ	10600	A
	60 HZ	11100	
$I^2t$	50 HZ	562	kA <sup>2</sup> s
	60 HZ	511	
$V_{RRM}$		2500 to 3600	V
$T_J$	Typical	-40 to 150	°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
D1400C	25	2500	2600	35
	30	3000	3100	
	32	3200	3300	
	36	3600	3700	

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		1400(795)	A
				55 (85)	°C
Maximum RMS forward current	$I_{F(RMS)}$	25°C heatsink temperature double side cooled		2600	A
Maximum peak, one cycle non-repetitive surge current	$I_{FSM}$	t = 10ms	No voltage reapplied	10600	A
		t = 8.3ms		11100	
		t = 10ms	100% $V_{RRM}$ reapplied	8940	
		t = 8.3ms		9375	
Maximum $I^2t$ for fusing	$I^2t$	t = 10ms	No voltage reapplied	562	kA <sup>2</sup> s
		t = 8.3ms		511	
		t = 10ms	100% $V_{RRM}$ reapplied	400	
		t = 8.3ms		365	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	t = 0.1 to 10 ms, no voltage reapplied		5618	kA <sup>2</sup> √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		0.84	V
High level value of threshold voltage	$V_{F(TO)2}$	$(I > \pi \times I_{F(AV)})$ , $T_J = T_J$ maximum		0.88	
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		0.40	mΩ
High level value of forward slope resistance	$r_{t2}$	$(I > \pi \times I_{F(AV)})$ , $T_J = T_J$ maximum		0.38	
Maximum forward voltage drop	$V_{FM}$	$I_{pk} = 1500A$ , $T_J = T_J$ maximum, $t_p = 10$ ms sinusoidal wave		1.44	V

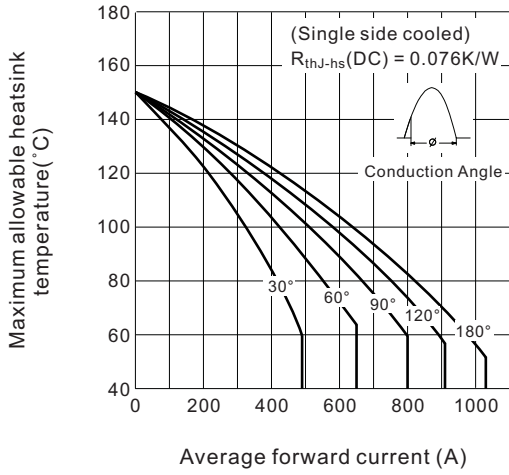
THERMAL AND MECHANICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNIT
Maximum junction operating temperature range	$T_J$			-40 to 150	°C
Maximum storage temperature range	$T_{stg}$			-40 to 200	
Maximum thermal resistance, junction to heatsink	$R_{thJ-hs}$	DC operation single side cooled		0.076	K/W
		DC operation double side cooled		0.038	
Mounting force, ±10%				9800 (1000)	N (kg)
Approximate weight				250	g
Case style		TO-200AB (B-PUK), Nell's C-type Capsule			

△ $R_{thJC}$ CONDUCTION						
CONDUCTION ANGEL	SINUSOIDAL CONDUCTION		RECTANGULAR CONDUCTION		TEST CONDUCTIONS	UNITS
	SINGLE SIDE	DOUBLE SIDE	SINGLE SIDE	DOUBLE SIDE		
180°	0.007	0.007	0.005	0.005	$T_J = T_J$ maximum	K/W
120°	0.008	0.008	0.008	0.008		
90°	0.010	0.010	0.011	0.011		
60°	0.015	0.015	0.016	0.016		
30°	0.026	0.026	0.026	0.026		

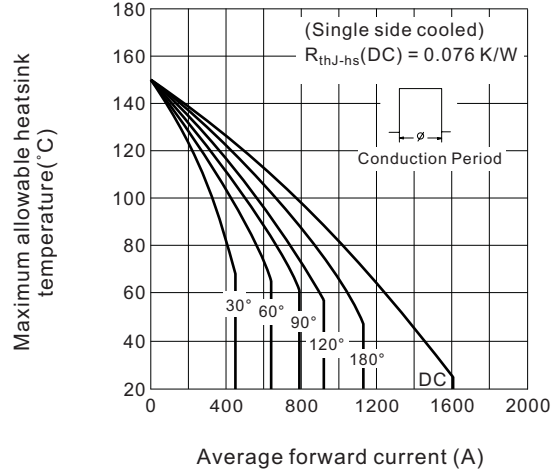
**Note**

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

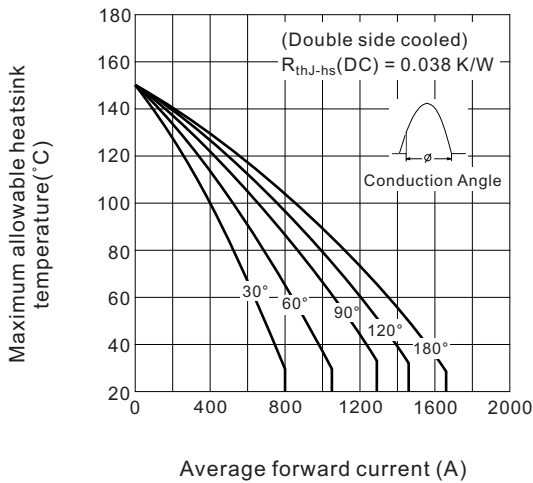
**Fig.1 Current ratings characteristics**



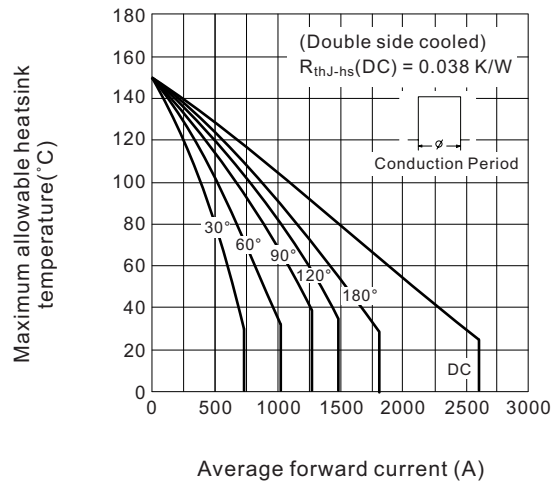
**Fig.2 Current ratings characteristics**



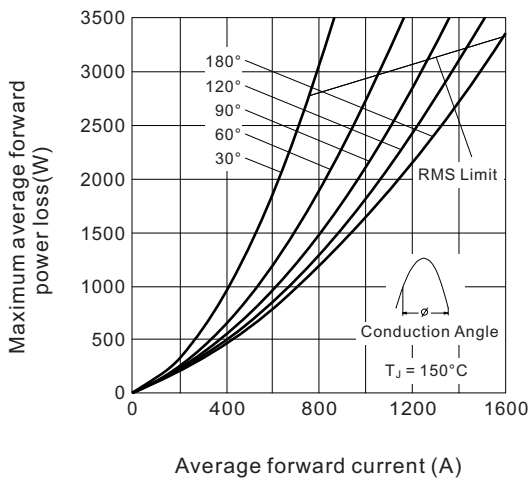
**Fig.3 Current ratings characteristics**



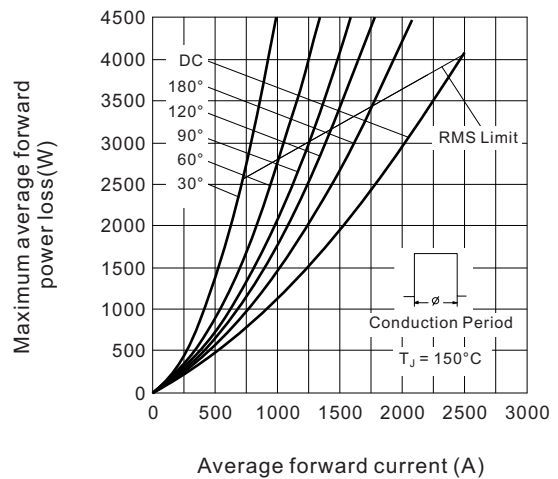
**Fig.4 Current ratings characteristics**



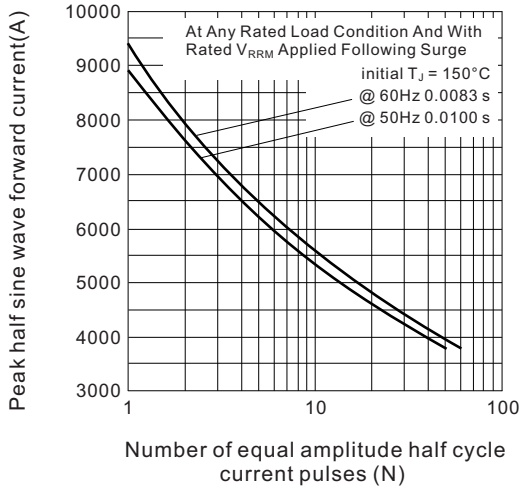
**Fig.5 Forward power loss characteristics**



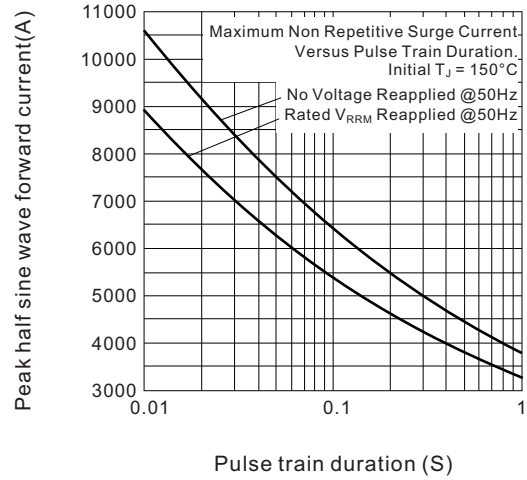
**Fig.6 Forward power loss characteristics**



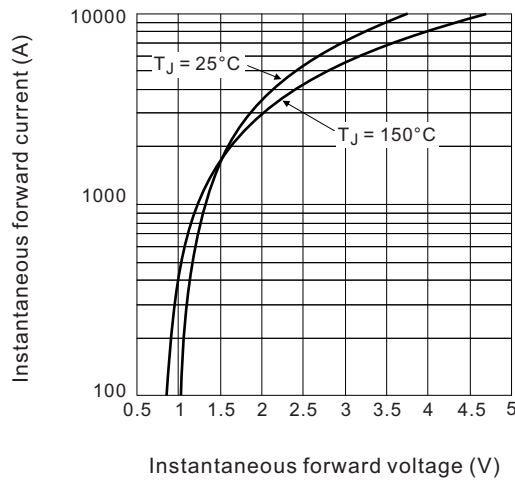
**Fig.7 Maximum non-repetitive surge current single and double side cooled**



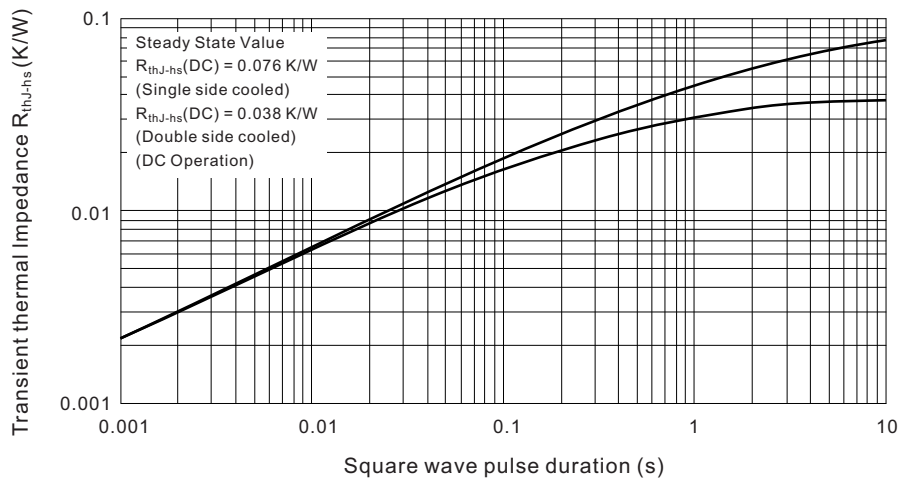
**Fig.8 Maximum non-repetitive surge current single and double side cooled**



**Fig.9 Forward voltage drop characteristics**



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

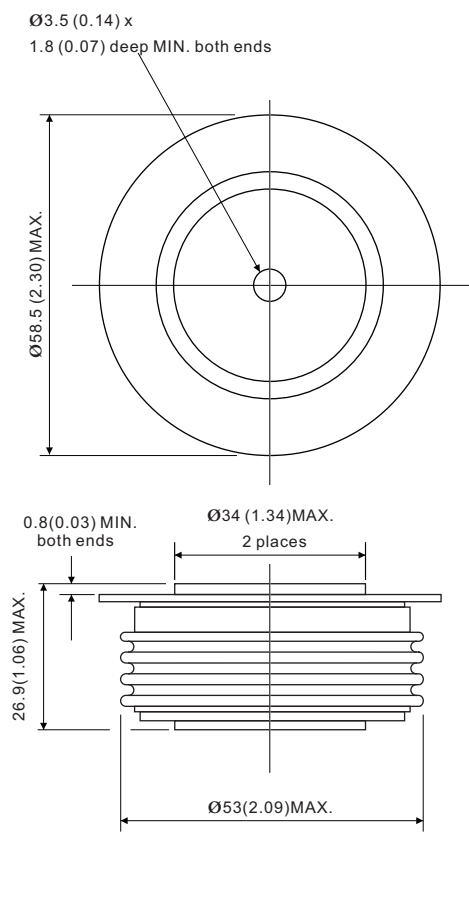


### ORDERING INFORMATION TABLE

Device code	<b>D</b>	<b>1400</b>	<b>C</b>	<b>30</b>
	①	②	③	④

- ① - "D" for standard recovery diode
- ② - Maximum average forward current, "1400" for 1400A
- ③ - Case style : "C" for Nell's C-type Capsule, DO-200AB (B-PUK)
- ④ - Voltage code, code x 100 =  $V_{RRM}$

#### DO-220AB (B-PUK), Nell's C-type Capsule



All dimensions in millimeters (inches)

