

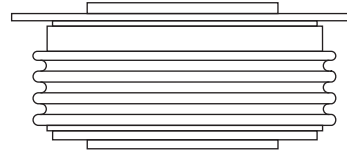
Standard Recovery Diodes (Hockey PUK Version), 1200A

FEATURES

- Wide current range
- High voltage ratings up to 3000 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	
$I_{T(AV)}$	1200A

MAJOR RATINGS AND CHARACTERISTICS			
PARAMETER	TEST CONDITIONS	VALUES	UNIT
$I_{F(AV)}$		1200	A
	T_{hs}	55	°C
$I_{F(RMS)}$		2280	A
	T_{hs}	25	°C
I_{FSM}	50 HZ	13600	A
	60 HZ	14240	
I^2t	50 HZ	925	kA ² s
	60 HZ	840	
V_{RRM}		800 to 3000	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
D1200C	08	800	900	30
	12	1200	1300	
	16	1600	1700	
	18	1800	1900	
	20	2000	2100	
	24	2400	2500	
	30	3000	3100	

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		1200(550)	A
				55 (85)	°C
Maximum RMS forward current	$I_{F(RMS)}$	25°C heatsink temperature double side cooled		2280	A
Maximum peak, one cycle non-repetitive surge current	I_{FSM}	t = 10ms	No voltage reapplied	Sinusoidal half wave, initial $T_J = T_J$ maximum	A
		t = 8.3ms			
		t = 10ms	100% V_{RRM} reapplied		
		t = 8.3ms			
Maximum I^2t for fusing	I^2t	t = 10ms	No voltage reapplied		kA ² s
		t = 8.3ms			
		t = 10ms	100% V_{RRM} reapplied		
		t = 8.3ms			
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	t = 0.1 to 10 ms, no voltage reapplied		9248	kA ² √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		0.80	V
High level value of threshold voltage	$V_{F(TO)2}$	$(I > \pi \times I_{F(AV)})$, $T_J = T_J$ maximum		0.93	
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		0.36	mΩ
High level value of forward slope resistance	r_{t2}	$(I > \pi \times I_{F(AV)})$, $T_J = T_J$ maximum		0.30	
Maximum forward voltage drop	V_{FM}	$I_{pk} = 2000A$, $T_J = T_J$ 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 150	°C
Maximum storage temperature range	T_{stg}		-55 to 200	
Maximum thermal resistance, junction to heatsink	R_{thJ-hs}	DC operation single side cooled	0.073	K/W
		DC operation double side cooled	0.031	
Mounting force, ±10%			14700 (1500)	N (kg)
Approximate weight			250	g
Case style		DO-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°	0.009	0.009	0.006	0.006	$T_J = T_J$ maximum	K/W
120°	0.011	0.011	0.011	0.011		
90°	0.014	0.014	0.015	0.015		
60°	0.020	0.020	0.021	0.021		
30°	0.036	0.036	0.036	0.036		

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

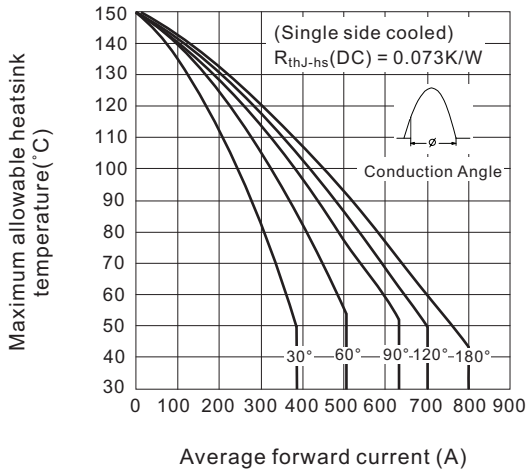


Fig.2 Current ratings characteristics

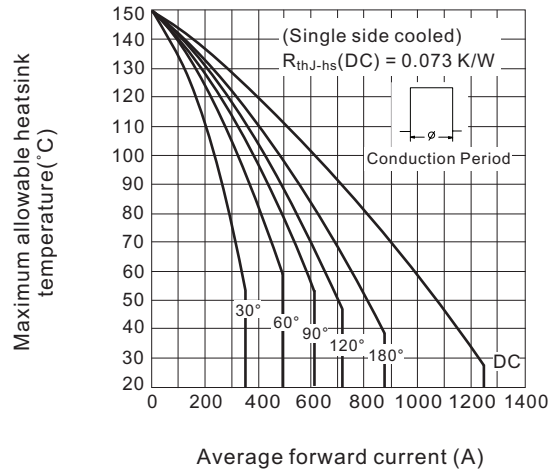


Fig.3 Current ratings characteristics

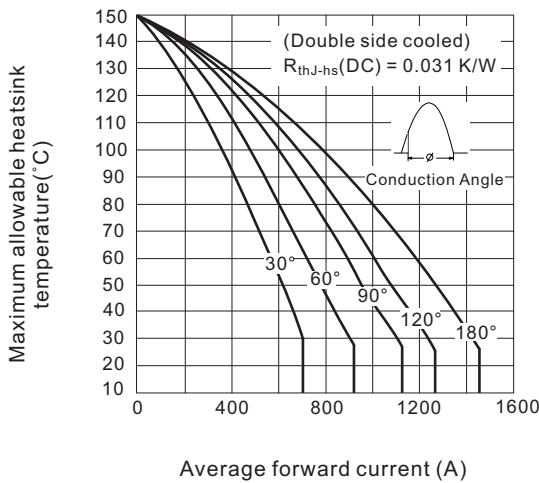


Fig.4 Current ratings characteristics

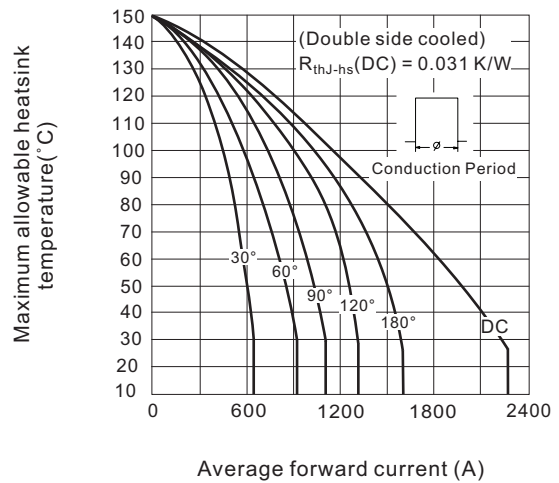


Fig.5 Forward power loss characteristics

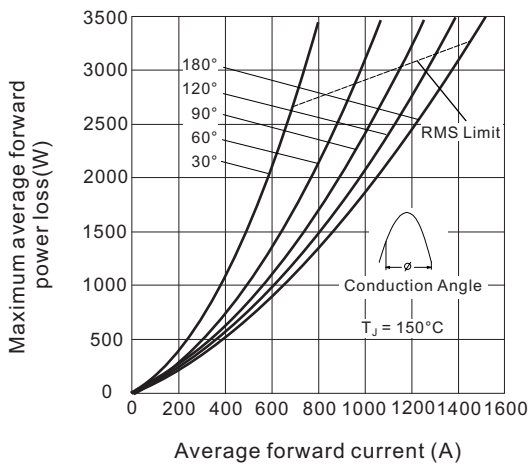


Fig.6 Forward power loss characteristics

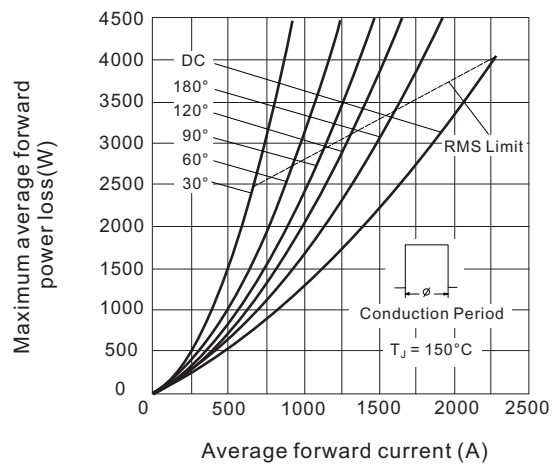


Fig.7 Maximum non-repetitive surge current single and double side cooled

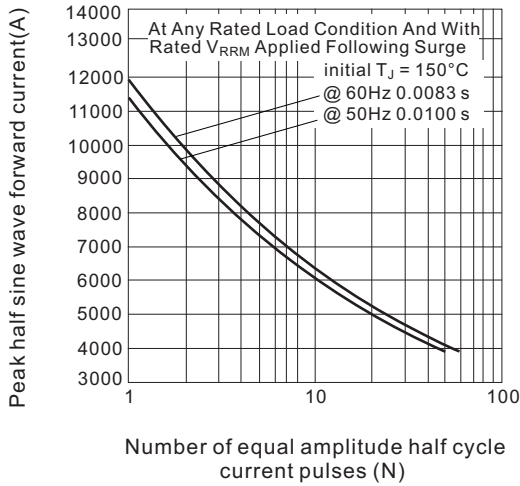


Fig.8 Maximum non-repetitive surge current single and double side cooled

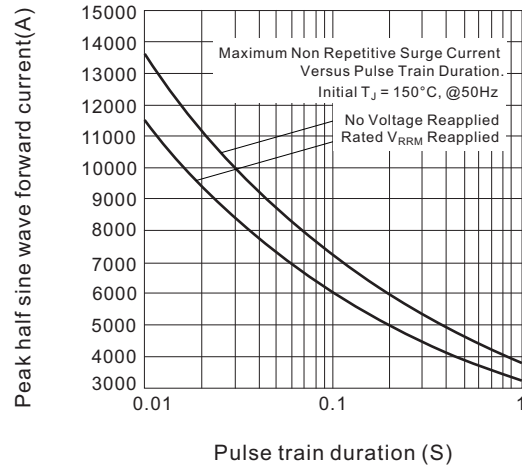


Fig.9 Forward voltage drop characteristics

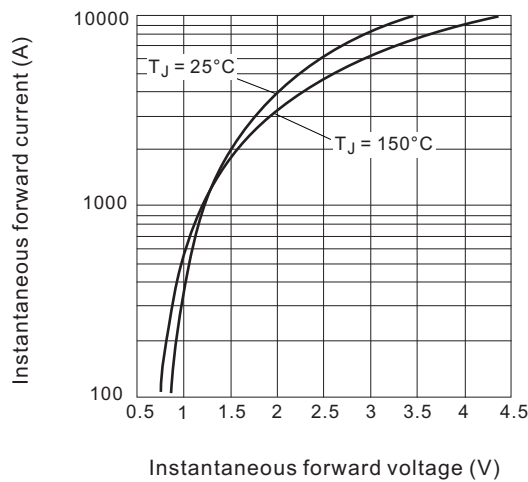
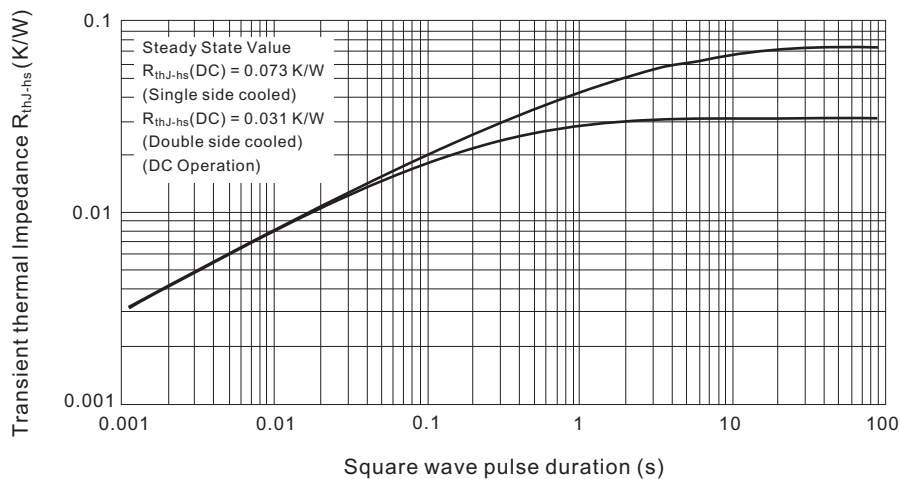


Fig.10 Thermal Impedance R_{thJ-hs} characteristics

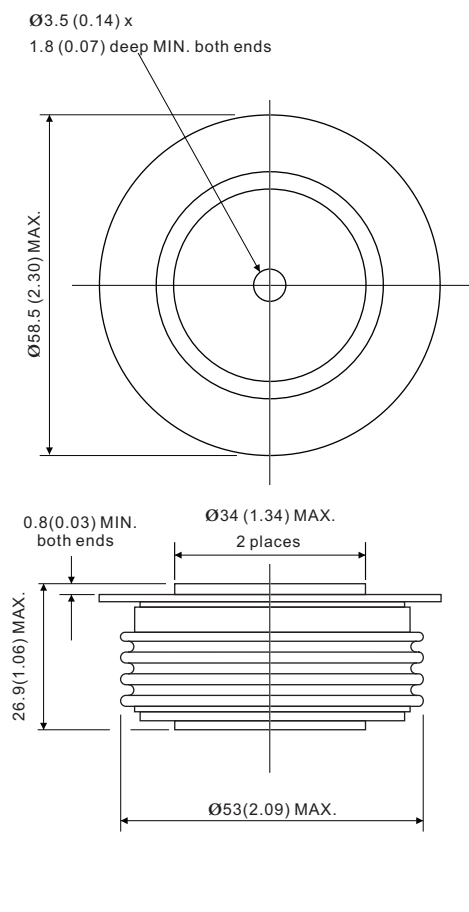


ORDERING INFORMATION TABLE

Device code	D	1200	C	20
	①	②	③	④

- ① - "D" for standard recovery diode
- ② - Maximum average forward current, "1200" for 1200A
- 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)

