

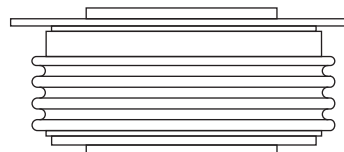
Standard Recovery Diodes (Hockey PUK Version), 2060A

FEATURES

- Wide current range
- High voltage ratings up to 2500 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

$I_{F(AV)}$	2060A
-------------	-------

MAJOR RATINGS AND CHARACTERISTICS

PARAMETER	TEST CONDITIONS	VALUES	UNIT
$I_{F(AV)}$		2060	A
	T_{hs}	55	°C
$I_{F(RMS)}$		3900	A
	T_{hs}	25	°C
I_{FSM}	50 HZ	23900	A
	60 HZ	25020	
I^2t	50 HZ	2856	kA ² s
	60 HZ	2598	
V_{RRM}		1600 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
D2060C	16	1600	1700	60
	20	2000	2100	
	24	2400	2500	
	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			2060(1040)	A	
					55 (85)	°C	
Maximum RMS forward current	I _{F(RMS)}	25°C heatsink temperature double side cooled			3900	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	23900	A	
		t = 8.3ms			25020		
		t = 10ms	100%V _{RRM} reapplied		20070		
		t = 8.3ms			21020		
Maximum I ² t for fusing	I ² t	t = 10ms	No voltage reapplied		2856	kA ² s	
		t = 8.3ms			2598		
		t = 10ms	100%V _{RRM} reapplied		2014		
		t = 8.3ms			1834		
Maximum I ² √t for fusing	I ² √t	t = 0.1 to 10 ms, no voltage reapplied			28560	kA ² √s	
Low level value of threshold voltage	V _{F(TO)1}	(16.7% x π x I _{F(AV)}) < I < π x I _{F(AV)}), T _J =T _J maximum			0.74	V	
High level value of threshold voltage	V _{F(TO)2}	(I > π x I _{F(AV)}), T _J =T _J maximum			0.86		
Low level value of forward slope resistance	r _{t1}	(16.7% x π x I _{F(AV)}) < I < π x I _{F(AV)}), T _J =T _J maximum			0.13	mΩ	
High level value of forward slope resistance	r _{t2}	(I > π x I _{F(AV)}), T _J =T _J maximum			0.12		
Maximum forward voltage drop	V _{FM}	I _{pk} = 6000A, T _J =T _J maximum, t _p = 10 ms sinusoidal wave			1.60	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}			-40 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				255	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°	0.009	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°	0.035	0.035	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

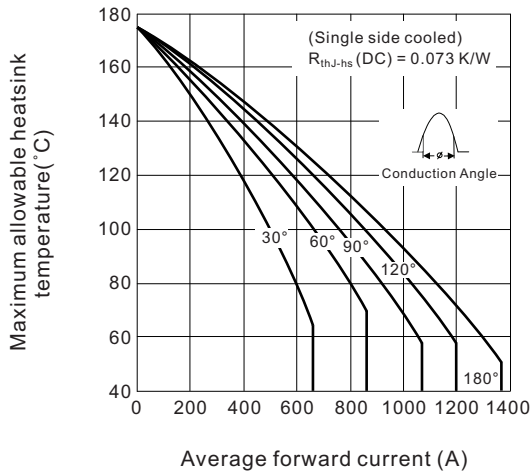


Fig.2 Current ratings characteristics

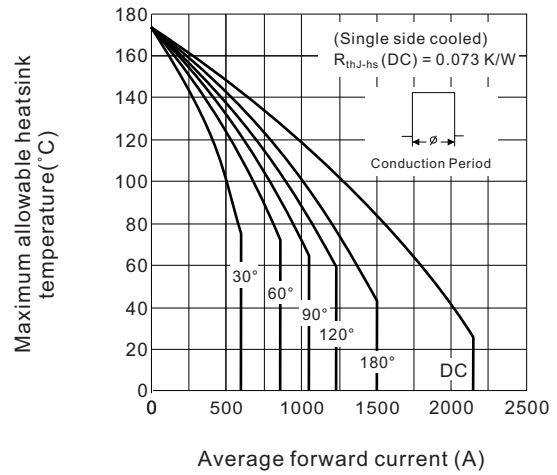


Fig.3 Current ratings characteristics

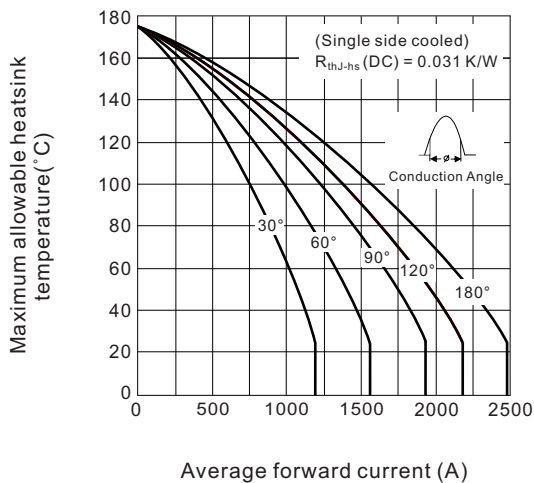


Fig.4 Current ratings characteristics

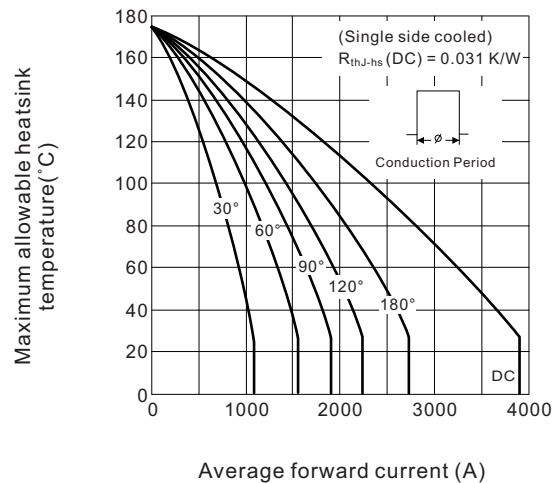


Fig.5 Forward power loss characteristics

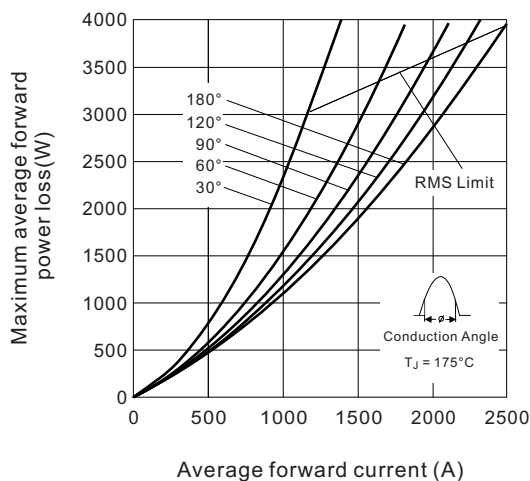


Fig.6 Forward power loss characteristics

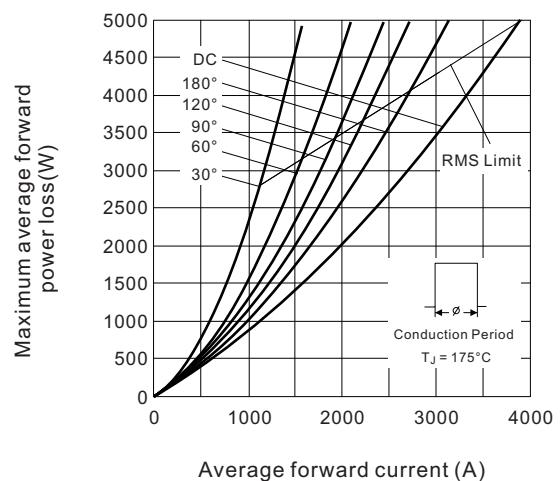


Fig.7 Maximum non-repetitive surge current single and double side cooled

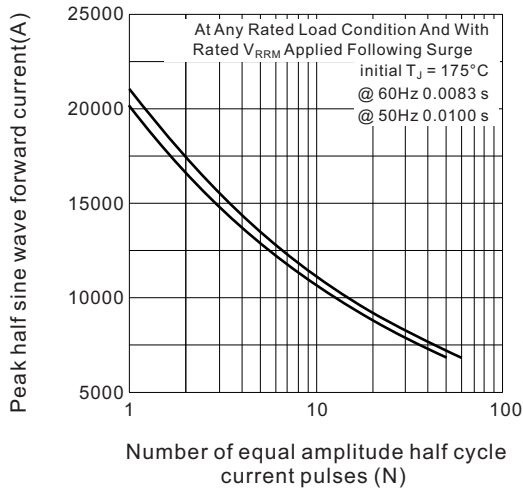


Fig.8 Maximum non-repetitive surge current single and double side cooled

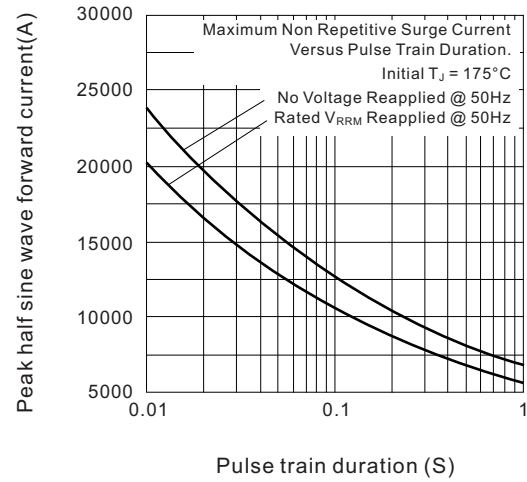


Fig.9 Forward voltage drop characteristics

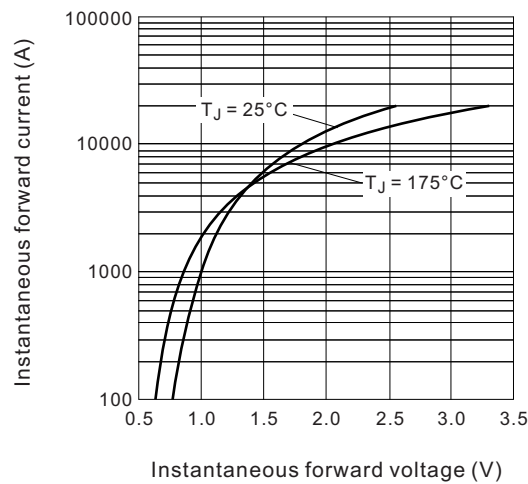
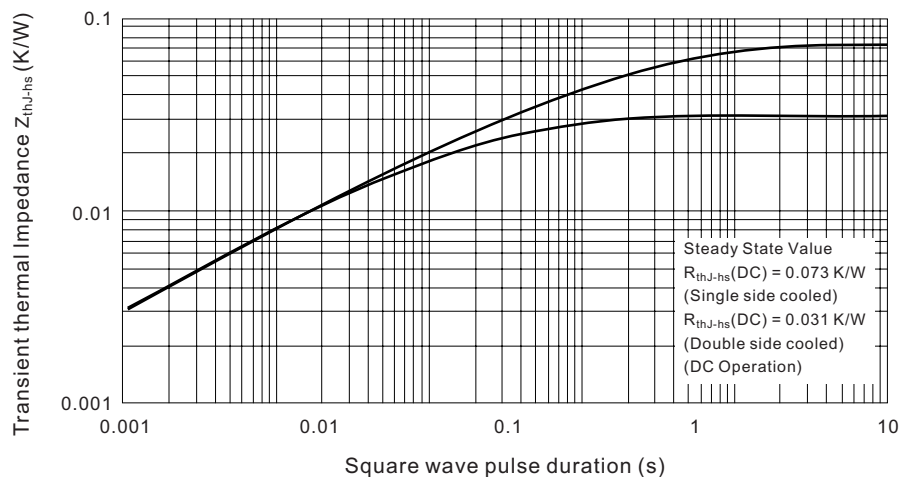


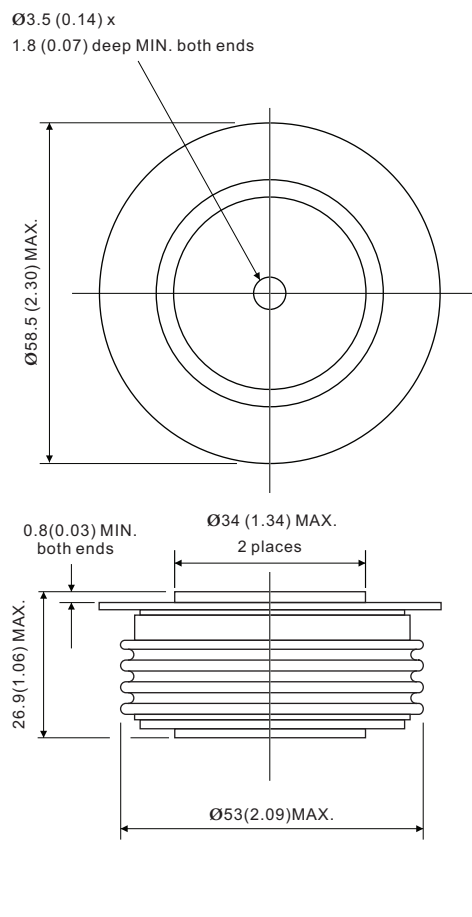
Fig.10 Thermal Impedance Z_{thJ-hs} characteristics



ORDERING INFORMATION TABLE

Device code	D	2060	C	20
	①	②	③	④

- ① - "D" for standard recovery diode
- ② - Maximum average forward current, "2060" for 2060A
- 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)