

DNB65

RECTIFIER DIODE

APPLICATIONS

- Rectification.
- Freewheel Diode.
- DC Motor Control.
- Power Supplies.
- Welding.
- Battery Chargers.

KEY PARAMETERS

V_{RRM}	4500V
$I_{F(AV)}$	2000A
I_{FSM}	31000A

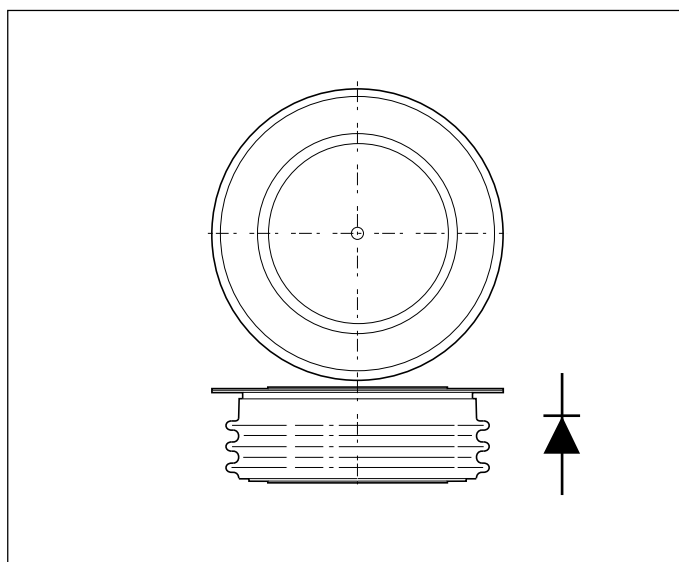
FEATURES

- Double Side Cooling.
- High Surge Capability.

VOLTAGE RATINGS

Type Number	Repetitive Peak Reverse Voltage V_{RRM} V	Conditions
DNB65 45	4500	$V_{RSM} = V_{RRM} + 100V$
DNB65 44	4400	
DNB65 42	4200	
DNB65 40	4000	
DNB65 38	3800	
DNB65 36	3600	

Lower voltage grades available.



Outline type code: DO200AD.
See package outlines for further information.

CURRENT RATINGS

Symbol	Parameter	Conditions	Max.	Units
Double Side Cooled				
$I_{F(AV)}$	Mean forward current	Half wave resistive load, $T_{case} = 100^{\circ}C$	2000	A
$I_{F(RMS)}$	RMS value	$T_{case} = 100^{\circ}C$	3140	A
I_F	Continuous (direct) forward current	$T_{case} = 100^{\circ}C$	2800	A
Single Side Cooled (Anode side)				
$I_{F(AV)}$	Mean forward current	Half wave resistive load, $T_{case} = 100^{\circ}C$	1284	A
$I_{F(RMS)}$	RMS value	$T_{case} = 100^{\circ}C$	2017	A
I_F	Continuous (direct) forward current	$T_{case} = 100^{\circ}C$	1715	A

DNB65

SURGE RATINGS

Symbol	Parameter	Conditions	Max.	Units
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; $T_{case} = 150^{\circ}C$ $V_R = 50\% V_{RRM} - 1/4$ sine	24.8	kA
I^2t	I^2t for fusing		3.075×10^6	A ² s
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; $T_{case} = 150^{\circ}C$ $V_R = 0$	31.0	kA
I^2t	I^2t for fusing		4.8×10^6	A ² s

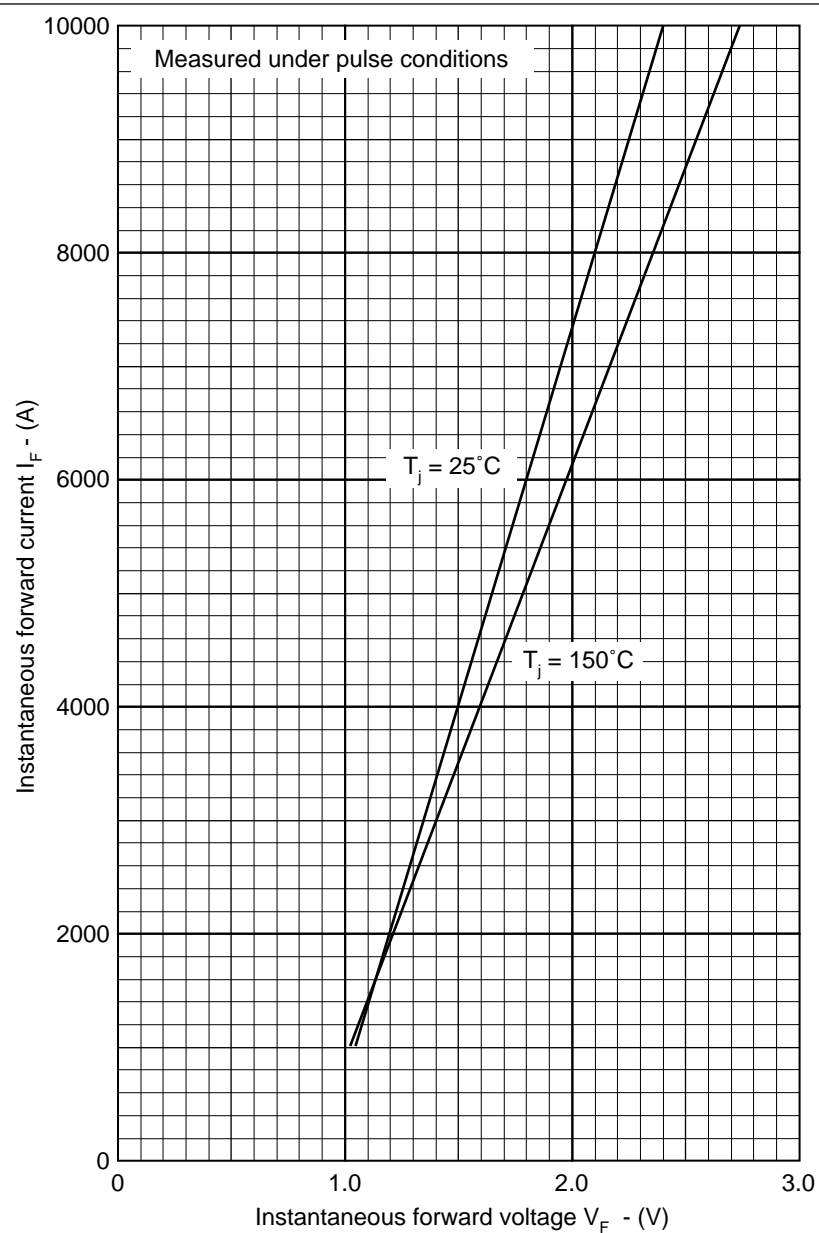
THERMAL AND MECHANICAL DATA

Symbol	Parameter	Conditions		Min.	Max.	Units
$R_{th(j-c)}$	Thermal resistance - junction to case	Double side cooled	dc	-	0.013	°C/W
		Single side cooled	Anode dc	-	0.025	°C/W
			Cathode dc	-	0.027	°C/W
$R_{th(c-h)}$	Thermal resistance - case to heatsink	Clamping force 45.0kN with mounting compound	Double side	-	0.003	°C/W
			Single side	-	0.006	°C/W
T_{vj}	Virtual junction temperature	Forward (conducting)		-	150	°C
		Reverse (blocking)		-	150	°C
T_{stg}	Storage temperature range			-55	175	°C
-	Clamping force			40.0	48.0	kN

CHARACTERISTICS

Symbol	Parameter	Conditions	Typ.	Max.	Units
V_{FM}	Forward voltage	At 3000A peak, $T_{case} = 25^{\circ}C$	-	1.45	V
I_{RRM}	Peak reverse current	At V_{RRM} , $T_{case} = 150^{\circ}C$	-	150	mA
Q_S	Total stored charge	$I_F = 1500A$, $dI_{RR}/dt = 25A/\mu s$ $T_{case} = 25^{\circ}C$, $V_R = 100V$	6000	-	μC
I_{RM}	Peak recovery current		-	500	A
t_{rr}	Reverse recovery time		25	-	μs
V_{TO}	Threshold voltage	At $T_{vj} = 150^{\circ}C$	-	0.84	V
r_T	Slope resistance	At $T_{vj} = 150^{\circ}C$	-	0.19	m Ω

CURVES

*Fig.1 Maximum (limit) forward characteristics*

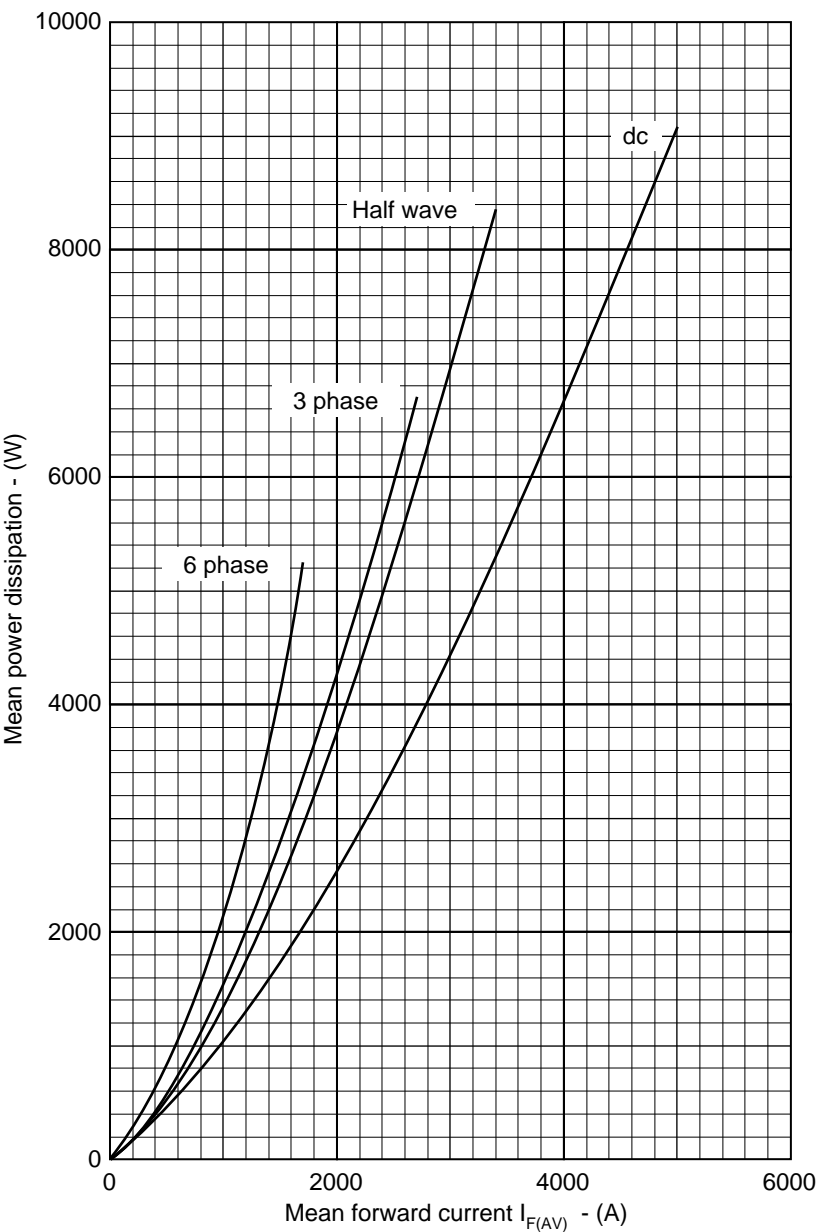


Fig.2 Dissipation curves

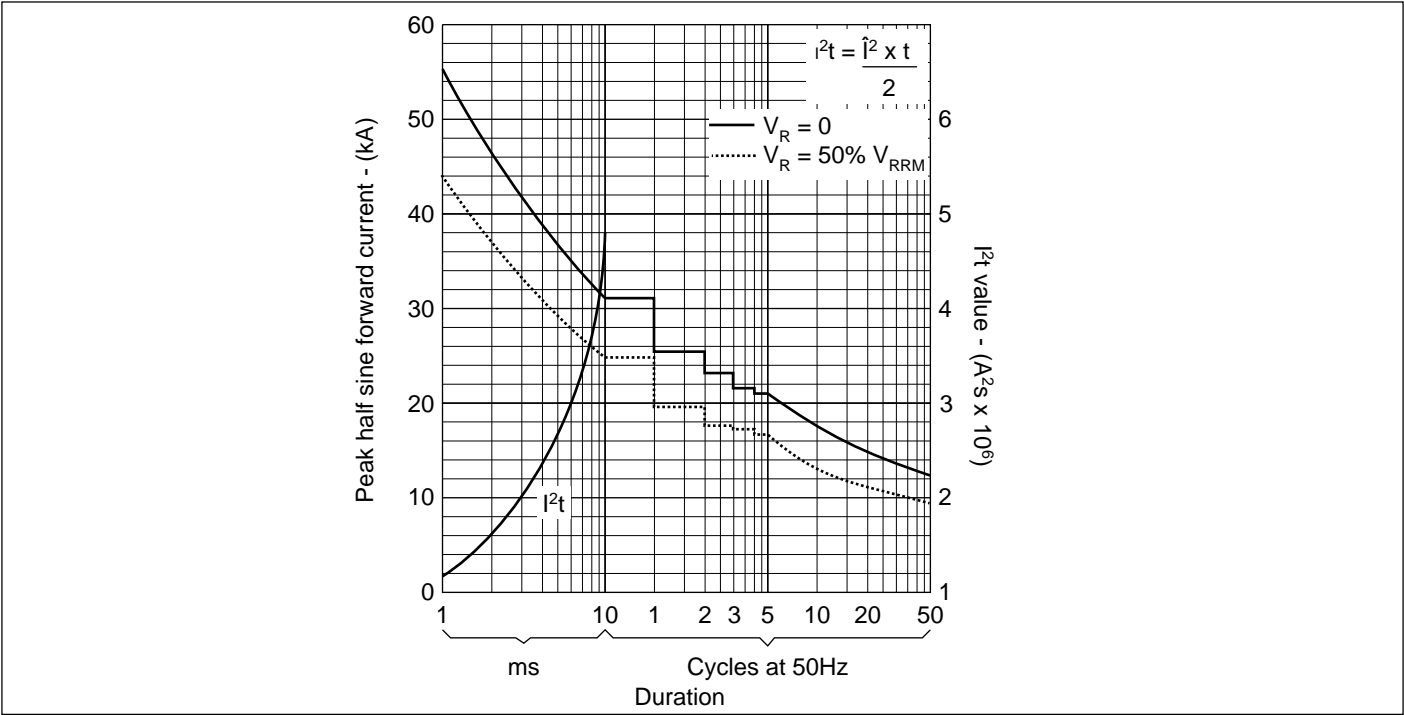


Fig.3 Surge (non-repetitive forward current vs time ($T_{case} = 150^\circ C$))

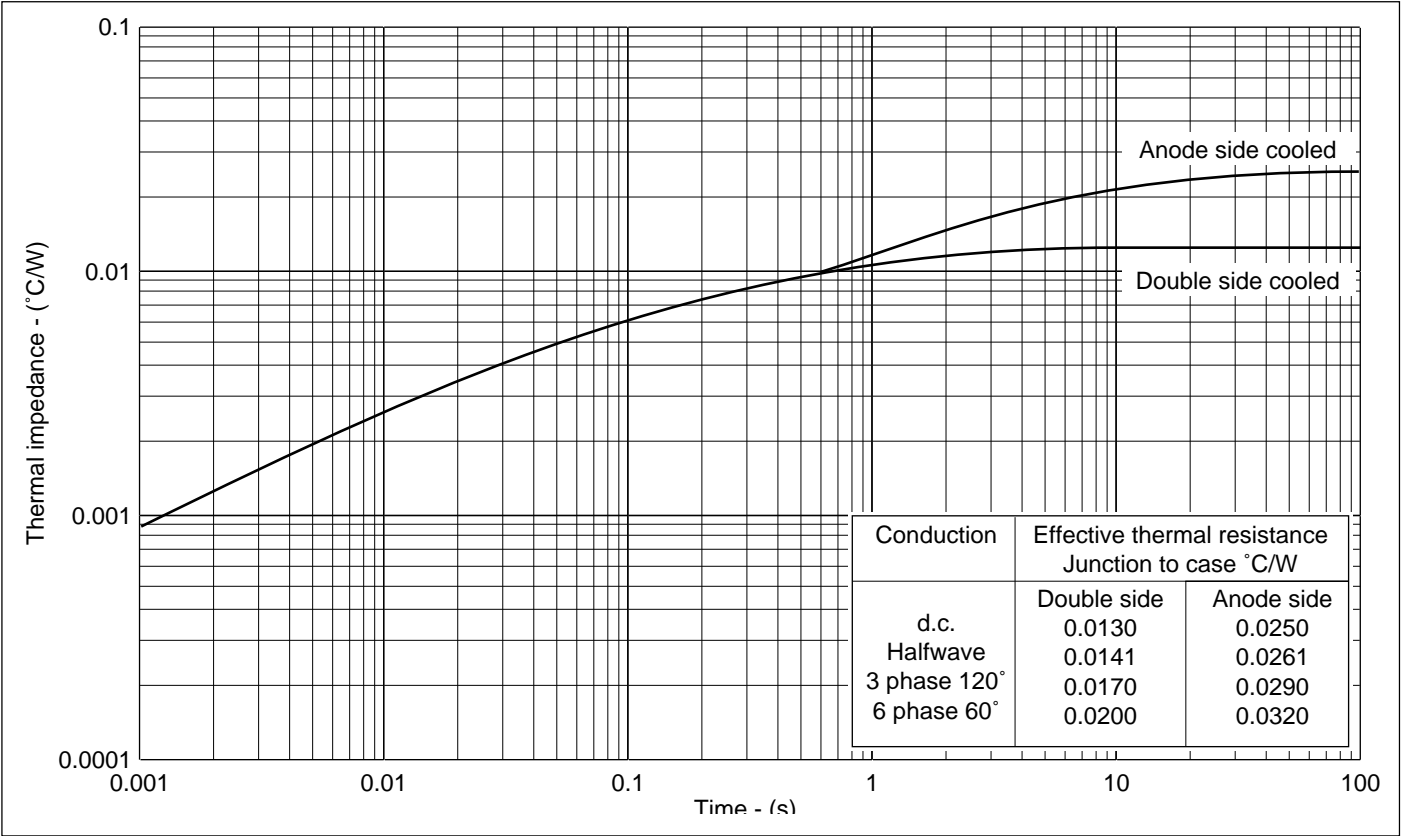
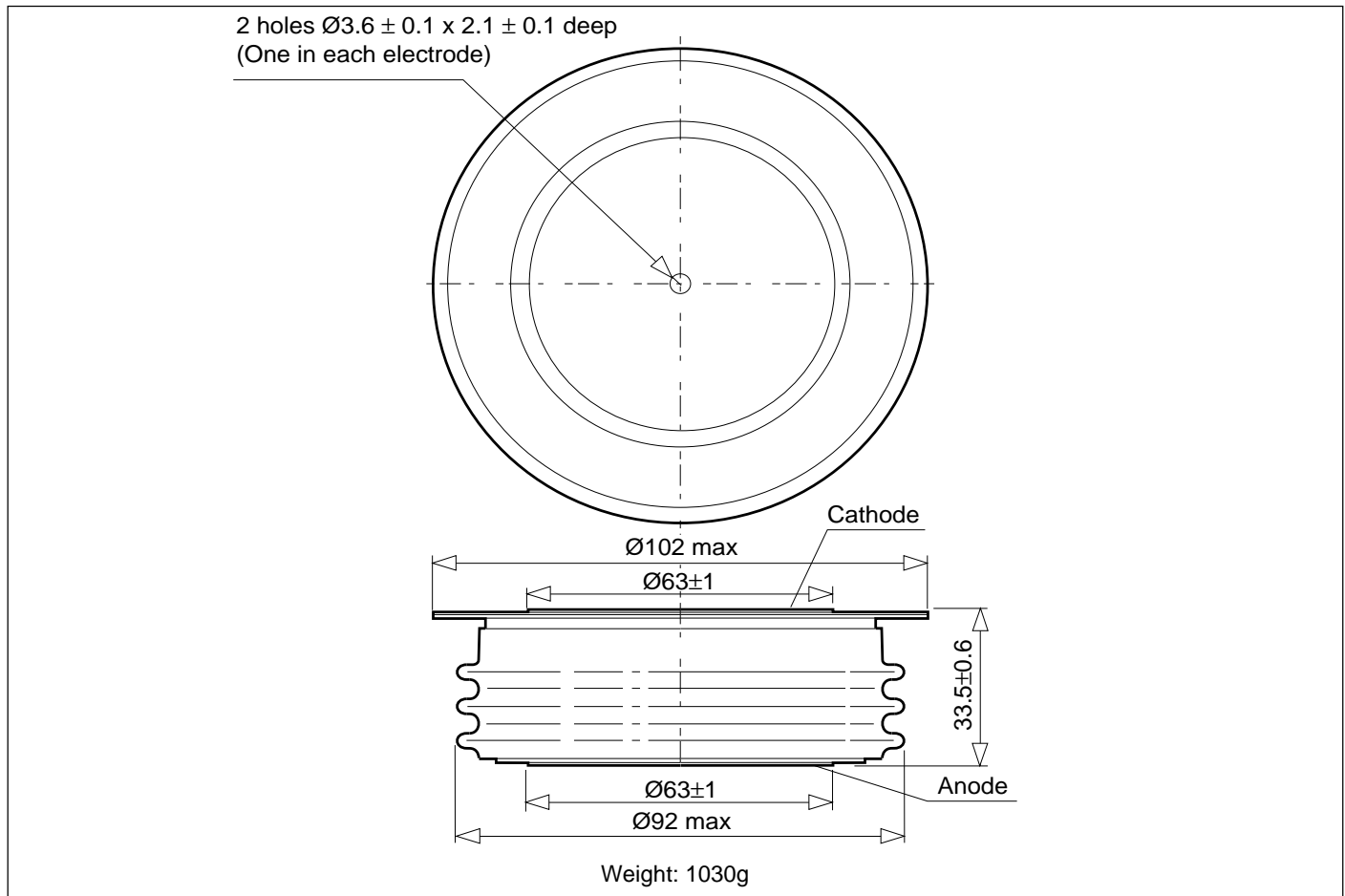


Fig.4 Maximum (limit) transient thermal impedance - junction to case - ($^\circ C/W$)

PACKAGE DETAILS - DO200AD

For further package information, please contact your local Customer Service Centre. All dimensions in mm, unless stated otherwise. DO NOT SCALE.



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