

FEATURES

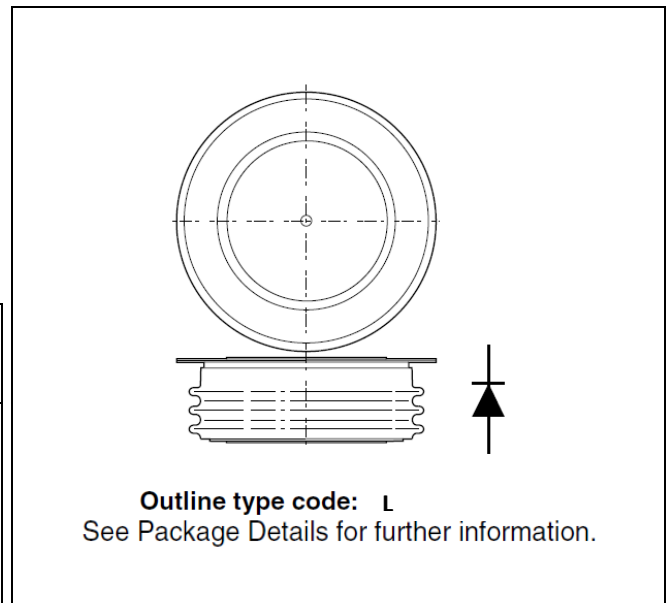
- Double Side Cooling
- High Surge Capability

KEY PARAMETERS

V_{RRM}	2500V
$I_{F(AV)}$	3438A
I_{FSM}	32kA

VOLTAGE RATINGS

Part and Ordering Number	Repetitive Peak Voltages V_{RRM} V	Conditions
DRD2880L25 DRD2880L24 DRD2880L22	2500 2400 2200	$V_{RSM} = V_{RRM} + 100V$


Fig. 1 Package outline
ORDERING INFORMATION

When ordering, select the required part number shown in the Voltage Ratings selection table.

For example:

DRD2880L24 for a 2400V device

CURRENT RATINGS

$T_{case} = 75^{\circ}C$ unless stated otherwise

Symbol	Parameter	Test Conditions	Max.	Units
Double Side Cooled				
$I_{F(AV)}$	Mean forward current	Half wave resistive load	3438	A
$I_{F(RMS)}$	RMS value	-	5401	A
I_F	Continuous (direct) on-state current	-	4997	A
Single Side Cooled (Anode side)				
$I_{F(AV)}$	Mean forward current	Half wave resistive load	2589	A
$I_{F(RMS)}$	RMS value	-	4066	A
I_F	Continuous (direct) on-state current	-	3586	A

$T_{case} = 100^{\circ}C$ unless stated otherwise

Symbol	Parameter	Test Conditions	Max.	Units
Double Side Cooled				
$I_{F(AV)}$	Mean forward current	Half wave resistive load	2880	A
$I_{F(RMS)}$	RMS value	-	4520	A
I_F	Continuous (direct) on-state current	-	4100	A
Single Side Cooled (Anode side)				
$I_{F(AV)}$	Mean forward current	Half wave resistive load	1870	A
$I_{F(RMS)}$	RMS value	-	2940	A
I_F	Continuous (direct) on-state current	-	2550	A

SURGE RATINGS

Symbol	Parameter	Test Conditions	Max.	Units
I_{FSM}	Surge (non-repetitive) on-state current	10ms half sine, $T_{case} = 175^{\circ}C$ $V_R = 50\% V_{RRM} - \frac{1}{4}$ sine	25.5	kA
I^2t	I^2t for fusing		3.25	MA^2s
I_{FSM}	Surge (non-repetitive) on-state current	10ms half sine, $T_{case} = 175^{\circ}C$ $V_R = 0$	32	kA
I^2t	I^2t for fusing		5.12	MA^2s

THERMAL AND MECHANICAL RATINGS

Symbol	Parameter	Test Conditions	Min.	Max.	Units	
$R_{th(j-c)}$	Thermal resistance – junction to case	Double side cooled	DC	-	0.013	$^{\circ}C/W$
		Single side cooled	Anode DC	-	0.025	$^{\circ}C/W$
			Cathode DC	-	0.027	$^{\circ}C/W$
$R_{th(c-h)}$	Thermal resistance – case to heatsink	Clamping force 43kN (with mounting compound)	Double side	-	0.003	$^{\circ}C/W$
		Single side	-	0.006	$^{\circ}C/W$	
T_{vj}	Virtual junction temperature	On-state (conducting)	-	185	$^{\circ}C$	
		Reverse (blocking)	-	175	$^{\circ}C$	
T_{stg}	Storage temperature range		-55	200	$^{\circ}C$	
F_m	Clamping force		40.0	48.0	kN	

CHARACTERISTICS

Symbol	Parameter	Test Conditions	Typ.	Max.	Units
V _{FM}	Forward voltage	At 1500A peak, T _{case} = 25°C	-	1.05	V
I _{RM}	Peak reverse current	At V _{RRM} , T _{case} = 175°C	-	100	mA
Q _S	Total stored charge	I _F = 2000A, dI _{RR} /dt = 3A/μs	3000		μC
I _{rr}	Peak reverse recovery current	T _{case} = 175°C, V _R = 100V	140		A
V _{TO}	Threshold voltage	At T _{vj} = 175°C	-	0.79	V
r _T	Slope resistance	At T _{vj} = 175°C	-	0.15	mΩ

CURVES

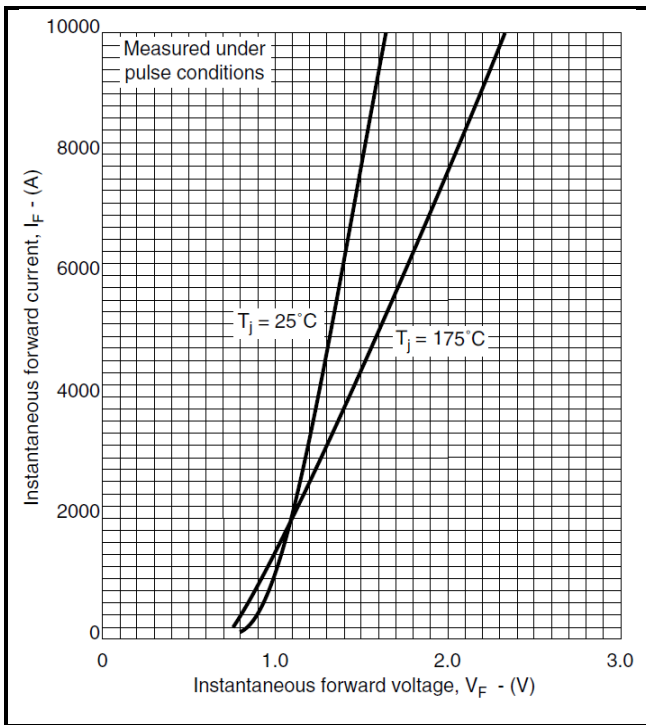


Fig.2 Maximum & minimum on-state characteristics

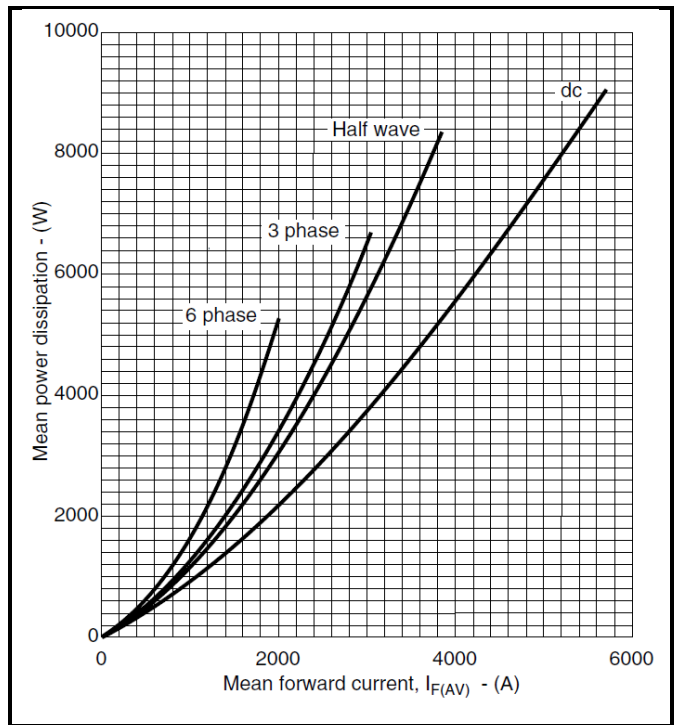


Fig.3 Dissipation curves

V_{TM} EQUATION

$$V_{TM} = A + B \ln(I_T) + C \cdot I_T + D \cdot \sqrt{I_T}$$

Where A = 0.827166
 B = -0.03596
 C = 0.00111
 D = 0.007187

these values are valid for T_j = 175°C for I_F 500A to 10000A

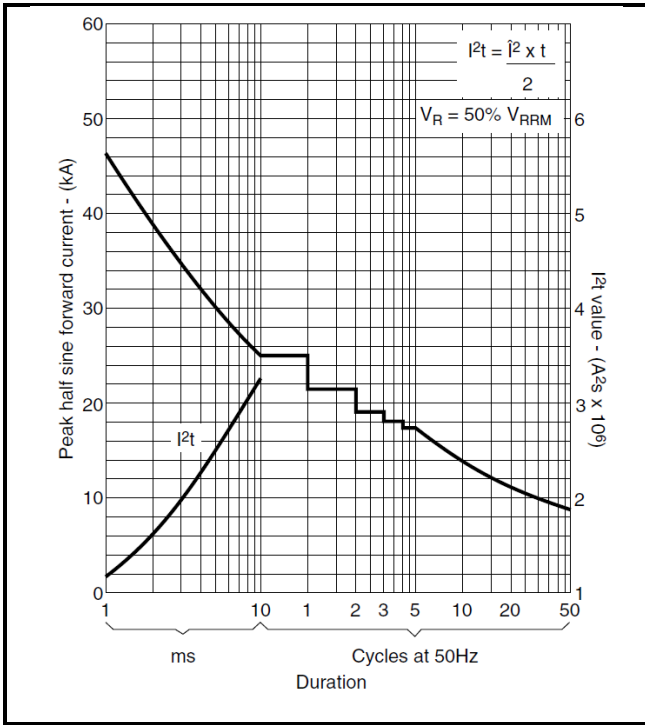


Fig.4 Surge (Non-Repetitive) Forward current vs time

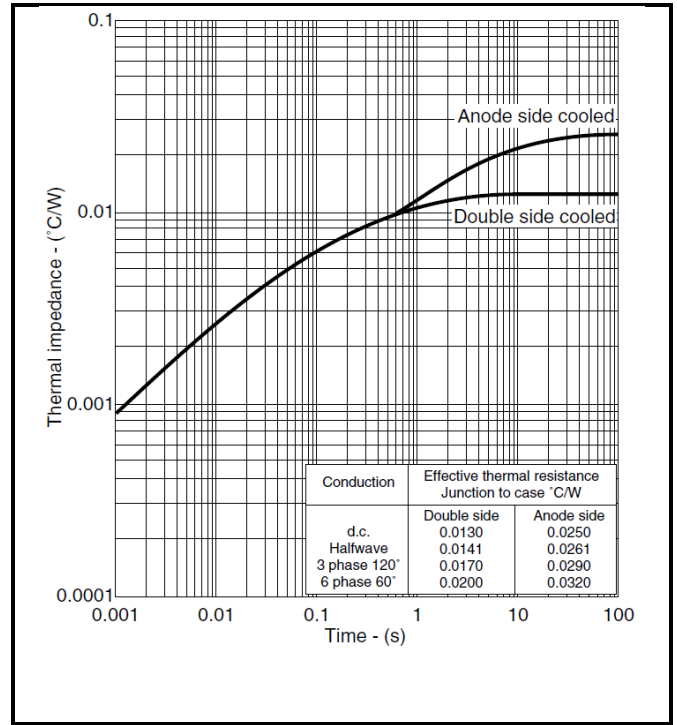
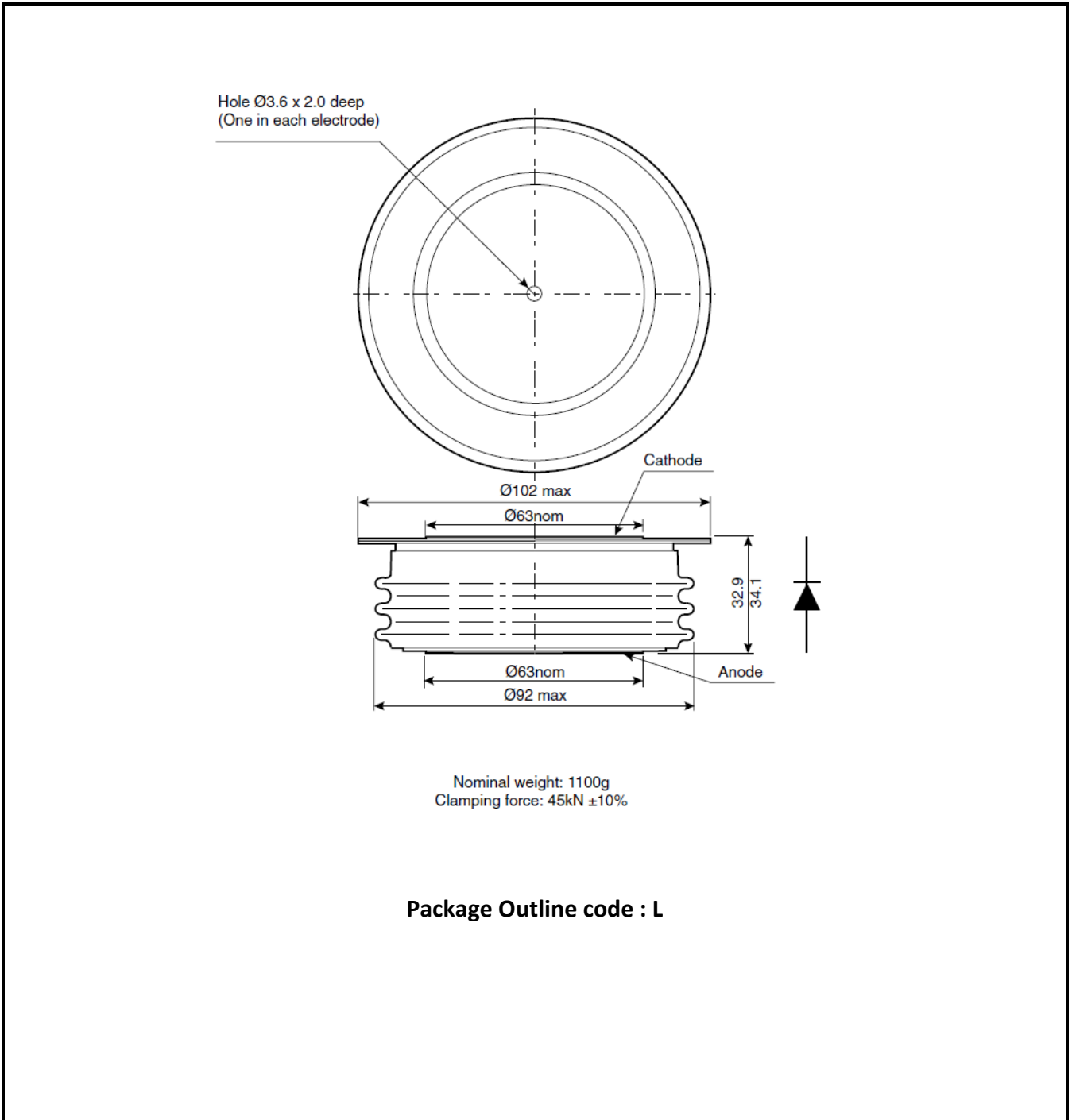


Fig.5 Maximum (limit) transient thermal impedance- junction to case

PACKAGE DETAILS

For further package information, please contact Customer Services. All dimensions in mm, unless stated otherwise. DO NOT SCALE.



Note:
Some packages may be supplied with gate and or tags.

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