DRD6140A34

Rectifier Diode

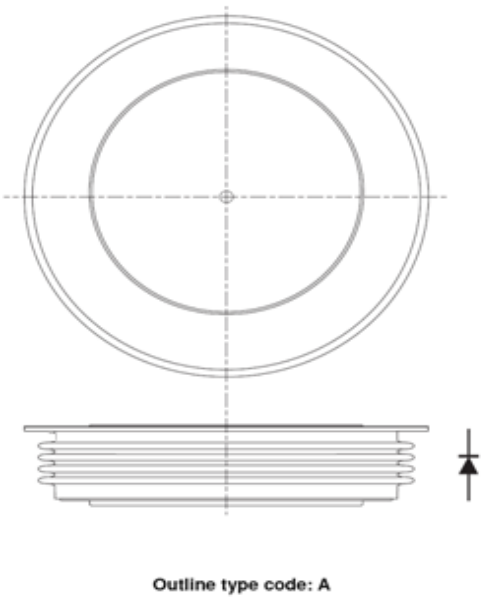
DS6014 – 1 March 2011 (LN28201)

FEATURES

- Double Side Cooling
- High Surge Capability

KEY PARAMETERS

V_{RRM}	3400V
$I_{F(AV)}$	6140A
I_{FSM}	84400A



(See Package Details for further information)

Fig. 1 Package outline

VOLTAGE RATINGS

Part and Ordering Number	Repetitive Peak Voltages V_{RRM} V	Conditions
DRD6140A34	3400	$V_{RSM} = V_{RRM}+100V$
DRD6140A32	3200	
DRD6140A30	3000	
DRD6140A28	2800	
DRD6140A26	2600	
DRD6140A24	2400	

ORDERING INFORMATION

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

For example:

DRD6140A34 for a 3400V device

CURRENT RATINGS

T_{case} = 75°C unless stated otherwise

Symbol	Parameter	Test Conditions	Max.	Units
Double Side Cooled				
$I_{F(AV)}$	Mean forward current	Half wave resistive load	7730	A
$I_{F(RMS)}$	RMS value	-	12140	A
I_F	Continuous (direct) on-state current	-	10930	A

T_{case} = 100°C unless stated otherwise

Symbol	Parameter	Test Conditions	Max.	Units
Double Side Cooled				
$I_{F(AV)}$	Mean forward current	Half wave resistive load	6140	A
$I_{F(RMS)}$	RMS value	-	9640	A
I_F	Continuous (direct) on-state current	-	8680	A

SURGE RATINGS

Symbol	Parameter	Test Conditions	Max.	Units
I_{FSM}	Surge (non-repetitive) on-state current	10ms half sine, T_{case} = 160°C	84.4	kA
I^2t	I^2t for fusing	V_R = 0	35.62	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	-	0.0057	°C/W
$R_{th(c-h)}$	Thermal resistance – case to heatsink	Double side cooled	DC	-	0.0015	°C/W
T_{vj}	Virtual junction temperature	Blocking V_{DRM} / $_{VRRM}$		-40	160	°C
T_{stg}	Storage temperature range			-40	160	°C
F_m	Clamping force			80	100	kN

CHARACTERISTICS

Symbol	Parameter	Test Conditions	Min.	Max.	Units
V_{FM}	Forward voltage	At 6000A peak, T_{case} = 160°C	-	1.10	V
I_{RM}	Peak reverse current	At $V_{DRM,}$ T_{case} = 160°C	-	400	mA
Q_S	Total stored charge	I_F = 4000A, dI_{RR}/dt =10A/µs T_{case} = 160°C, V_R =100V	-	7000	µC
V_{TO}	Threshold voltage	At T_{vj} = 160°C	-	0.80	V
r_T	Slope resistance	At T_{vj} = 160°C	-	0.05	mΩ

CURVES

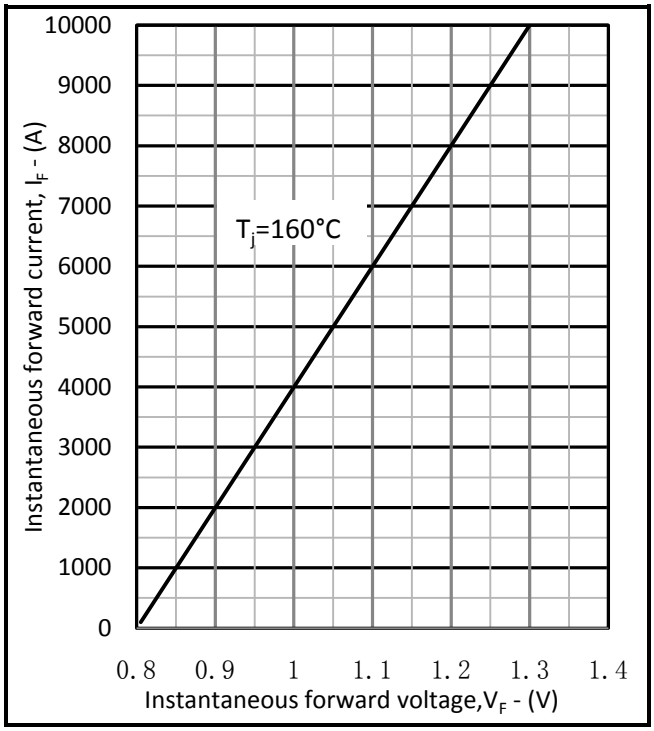


Fig.2 Maximum forward characteristics

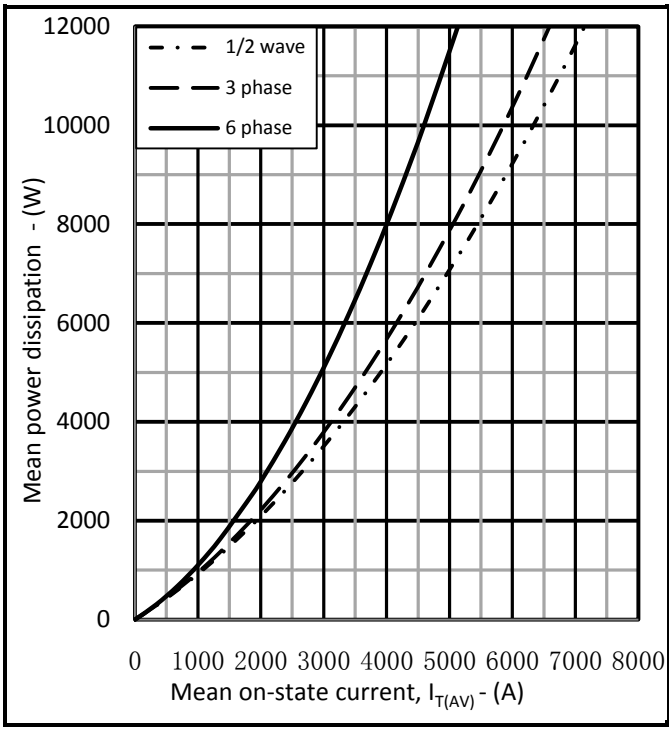


Fig.3 Dissipation curves

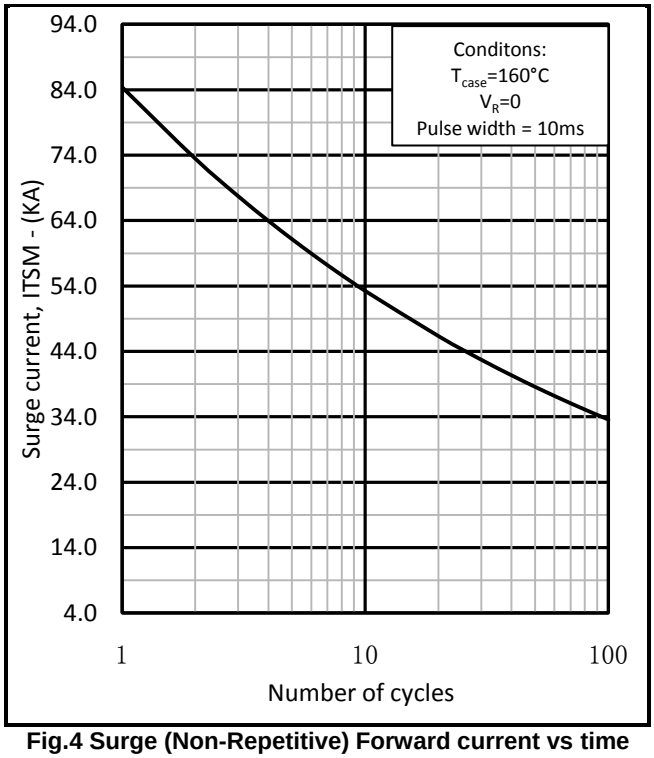


Fig.4 Surge (Non-Repetitive) Forward current vs time

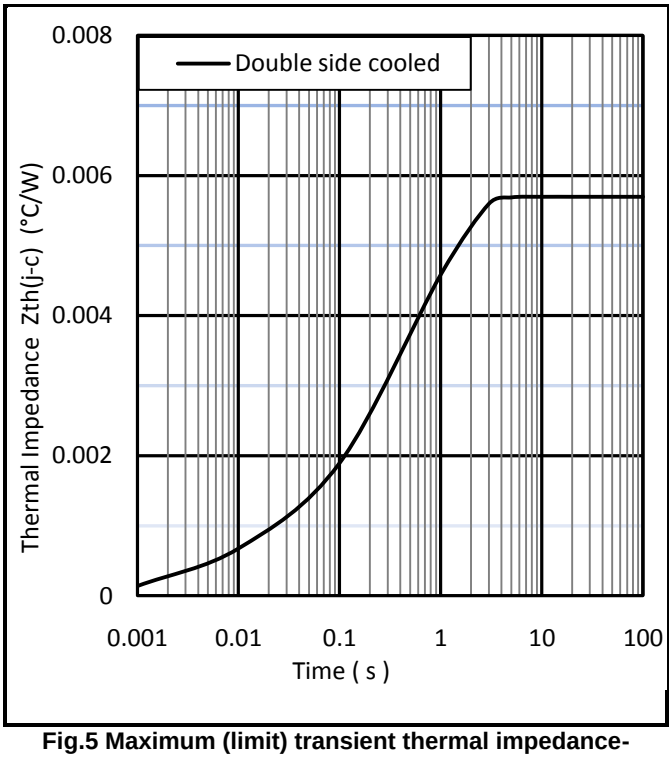
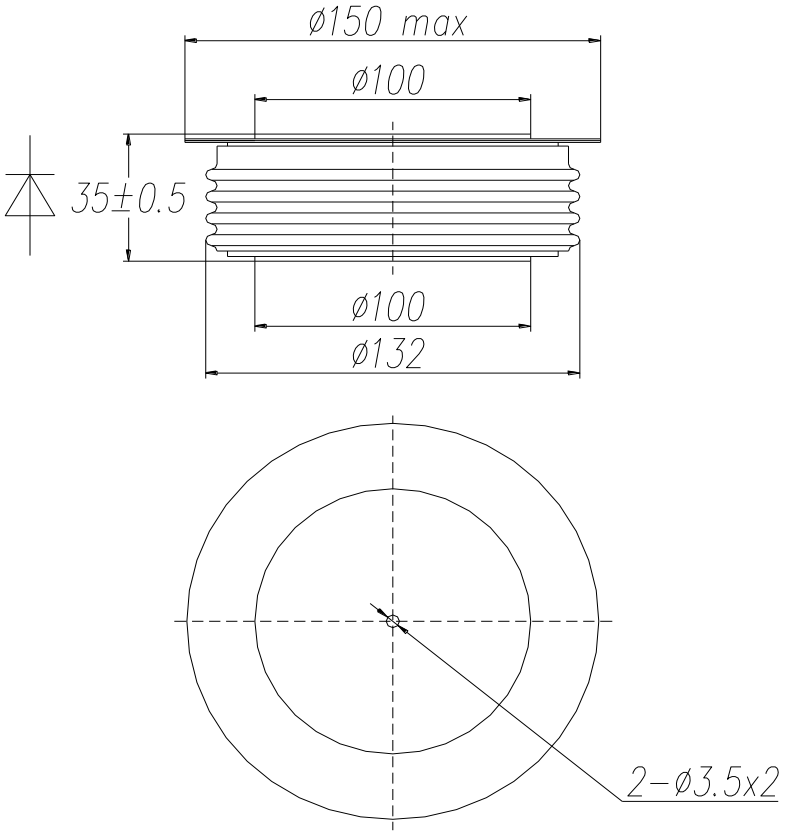


Fig.5 Maximum (limit) transient thermal impedance-junction to case

PACKAGE DETAILS

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



Package outline type code: A

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

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