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FAST RECOVERY DIODE**ARF681**

FOR IGBT, IEGT, GCT APPLICATIONS
SNUBBERLESS OPERATION
LOW LOSSES SOFT RECOVERY

Repetitive voltage up to

4500 V

Mean forward current

1145 A

Surge current

25 kA**TARGET SPECIFICATION**

mar 03 - ISSUE : 2

Symbol	Characteristic	Conditions	T _j [°C]	Value	Unit
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BLOCKING

V _{RRM}	Repetitive peak reverse voltage		125	4500	V
V _{RSM}	Non-repetitive peak reverse voltage		125	4600	V
I _{RRM}	Repetitive peak reverse current	V=VRRM	125	150	mA
V _{DC LINK}	Permanent DC voltage		125	2800	V

CONDUCTING

I _{F (AV)}	Mean forward current	180° sin ,50 Hz, Th=55°C, double side cooled		1145	A
I _{F (AV)}	Mean forward current	180° square,50 Hz,Th=55°C,double side cooled		1185	A
I _{FSM}	Surge forward current	Sine wave, 10 ms	125	25	kA
I ² t	I ² t	reapplied reverse voltage up to 50% VRSM		3125 x1E3	A²s
V _{FM}	Forward voltage	Forward current =2000 A	125	3.55	V
V _{F(TO)}	Threshold voltage		125	1.95	V
r _F	Forward slope resistance		125	0.800	mohm

SWITCHING

Q _{rr}	Reverse recovery charge	I _F = 1000 A di/dt= 250 A/μs VR = 100 V	125	1500	μC
I _{rr}	Peak reverse recovery current		125	730	A
t _{rr}	Reverse recovery time	I _F = 2100 A di/dt= 1000 A/μs VR = 1800 V	125		μs
Q _{rr}	Reverse recovery charge			2200	μC
I _{rr}	Peak reverse recovery current			1150	A
s	Softness (s-factor), min				
E _{OFF}	Turn off energy dissipation				J
V _{FR}	Peak forward recovery	di/dt= 400 A/μs	125		V

MOUNTING

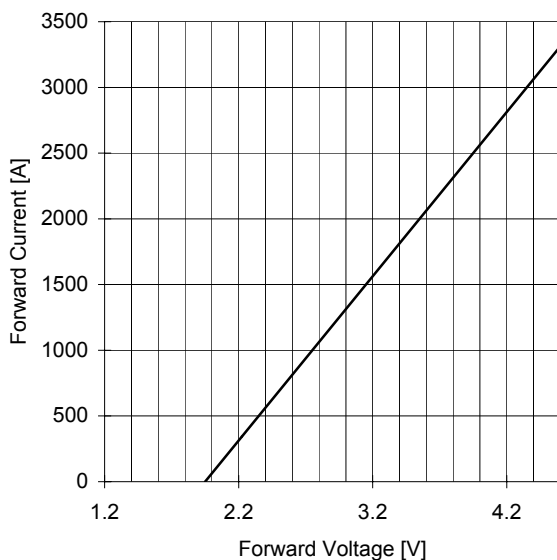
R _{th(j-h)}	Thermal impedance	Junction to heatsink, double side cooled		14.0	°C/kW
R _{th(c-h)}	Thermal impedance	Case to heatsink, double side cooled		6.0	°C/kW
T _j	Operating junction temperature			-30 / 125	°C
F	Mounting force			35.0 / 40.0	kN
	Mass			850	g

ORDERING INFORMATION : ARF681 S 45standard specification ☐ ☐ VRRM/100

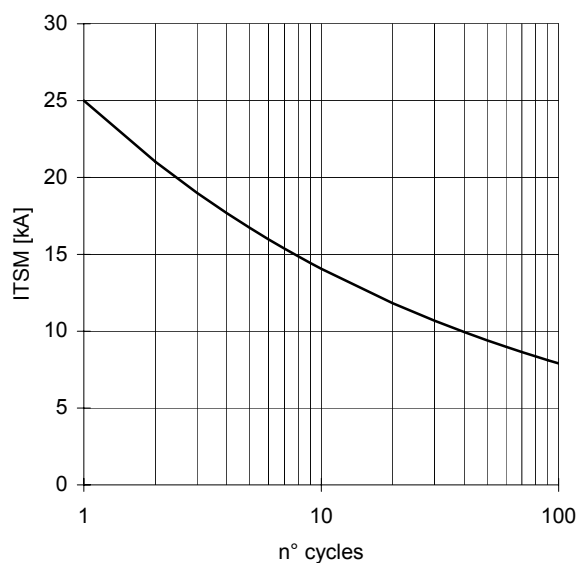
ARF681 FAST RECOVERY DIODE

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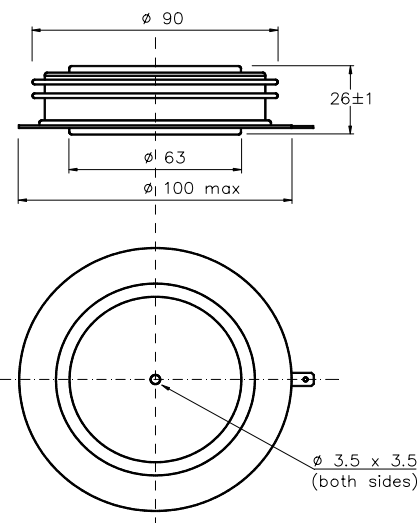
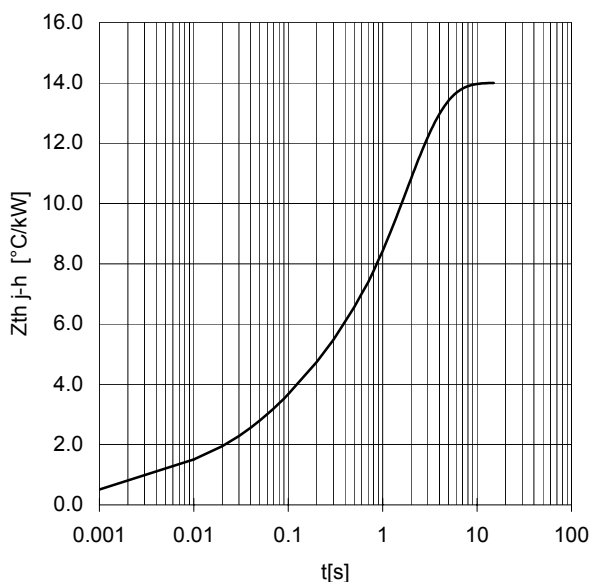
FORWARD CHARACTERISTIC
 $T_j = 125^\circ\text{C}$



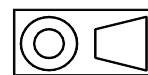
SURGE CHARACTERISTIC
 $T_j = 125^\circ\text{C}$



TRANSIENT THERMAL IMPEDANCE
DOUBLE SIDE COOLED



Dimensions
in mm



All the characteristics given in this data sheet are guaranteed only with uniform clamping force, cleaned and lubricated heatsink, surfaces with flatness $< .03 \text{ mm}$ and roughness $< 2 \mu\text{m}$.

In the interest of product improvement ANSALDO reserves the right to change any data given in this data sheet at any time without previous notice.

If not stated otherwise the maximum value of ratings (symbols over shaded background) and characteristics is reported.

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