



POSEICO SPA

Power SEMiconductors Italian Corporation

POSEICO SPA
Via N. Lorenzi 8, 16152 Genova - ITALY
Tel. +39 010 6556234 - Fax +39 010 6557519
Sales Office:
Tel. +39 010 6556775 - Fax +39 010 6442510

FAST RECOVERY DIODE

ARF681

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

Repetitive voltage up to
Mean forward current
Surge current

4500 V
1145 A
25 kA

TARGET SPECIFICATION

mar 03 - ISSUE : 2

Symbol	Characteristic	Conditions	T _j [°C]	Value	Unit
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	A ² s
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

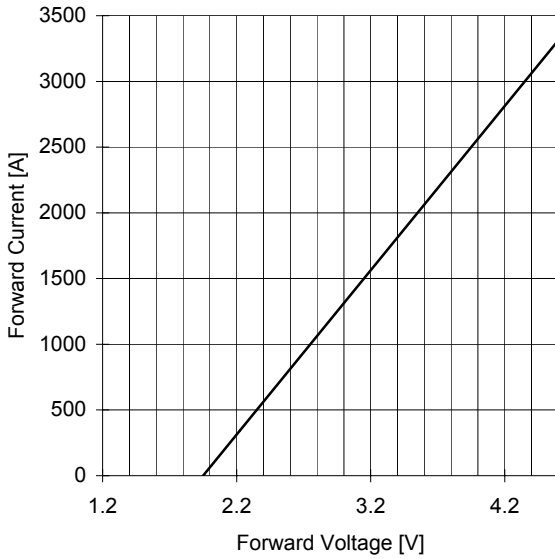
ORDERING INFORMATION : ARF681 S 45

standard specification VRRM/100

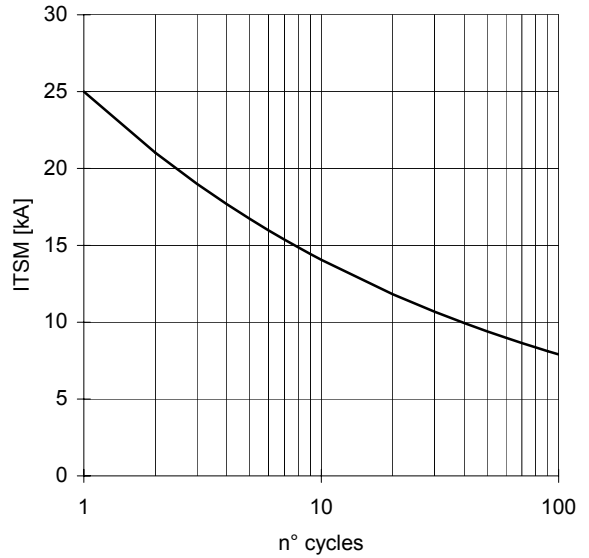
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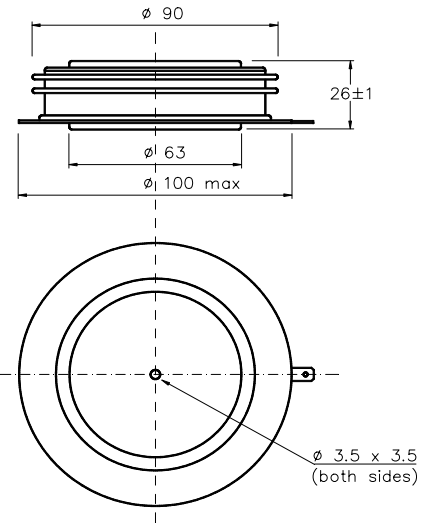
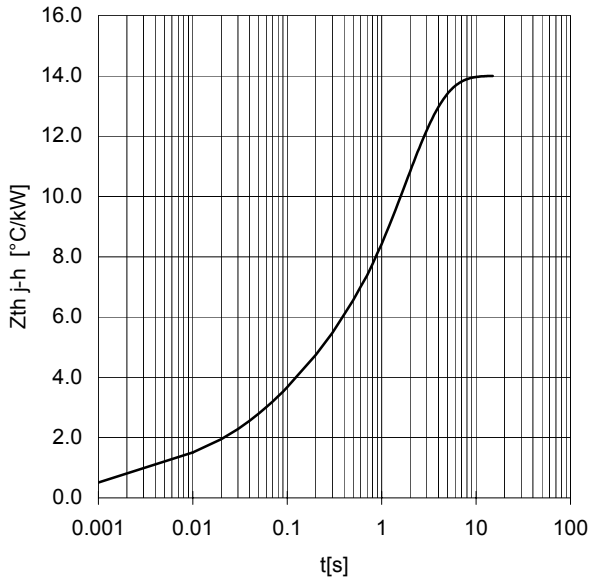
FORWARD CHARACTERISTIC
 $T_j = 125^\circ\text{C}$



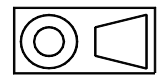
SURGE CHARACTERISTIC
 $T_j = 125^\circ\text{C}$



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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