POSEICO SPA
Via Pillea 42-44, 16153 Genova - ITALY
Tel. + 39 010 8599400 - Fax + 39 010 8682006
Sales Office:
Tel. + 39 010 8599400 - sales@poseico.com

FAST RECOVERY DIODE

ARF681

FOR IGBT, IEGT, GCT APPLICATIONS SNUBBERLESS OPERATION	
Nominal Pellet diameter	63 mm
Anode and Cathode pole diameter	63 mm
Ceramic housing thickness	26 mm

Repetitive voltage up to **4500 V**
Mean forward current **1283 A**
Surge current **23 kA**

TARGET SPECIFICATION

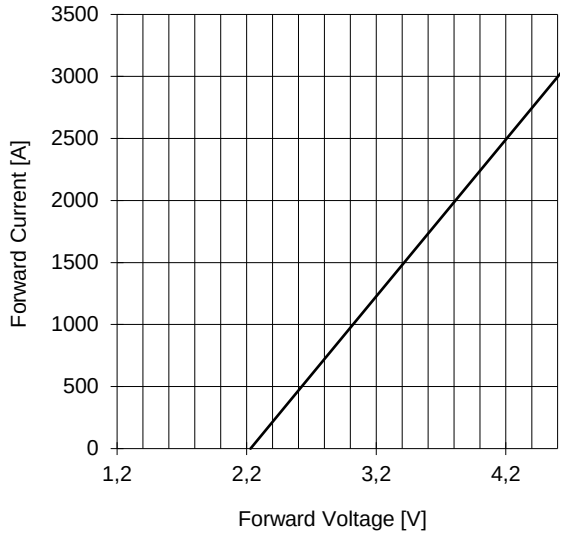
dic 11 - ISSUE : 07

Symbol	Characteristic	Conditions	Tj [°C]	Value	Unit
BLOCKING					
V_{RRM}	Repetitive peak reverse voltage		140	4500	V
V_{RSM}	Non-repetitive peak reverse voltage		140	4600	V
I_{RRM}	Repetitive peak reverse current	V=VRRM	140	100	mA
$V_{DC\ LINK}$	Permanent DC voltage		140	2800	V
CONDUCTING					
$I_{F(AV)}$	Mean forward current	180° sin ,50 Hz, Th=55°C, double side cooled		1283	A
$I_{F(AV)}$	Mean forward current	180° square,50 Hz,Th=55°C,double side cooled		1291	A
I_{FSM}	Surge forward current	Sine wave, 10 ms reapplied reverse voltage up to 50% VRSM	140	23	kA
I^2t	I^2t			2645 x1E3	A^2s
V_{FM}	Forward voltage	Forward current = 2500 A	140	4,20	V
$V_{F(TO)}$	Threshold voltage		140	2,23	V
r_F	Forward slope resistance		140	0,791	mohm
SWITCHING					
Q_{rr}	Reverse recovery charge	I F = 2500 A di/dt= 300 A/µs VR = 100 V	140	1400	µC
I_{rr}	Peak reverse recovery current		140	750	A
Q_{rr}	Reverse recovery charge	I F = 2500 A di/dt= 1000 A/µs VR = 2800 V LS = 250 nH See page 2: SWITCHING CHARACTERISTICS 01	140	3400	µC
I_{rr}	Peak reverse recovery current			1950	A
s	Softness (s-factor), min				
E_{OFF}	Turn off energy dissipation			6,0	J
V_{FR}	Peak forward recovery	di/dt= 400 A/µs	140		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		3,0	°C/kW
T_j	Operating junction temperature			-30 / 140	°C
F	Mounting force			35.0 / 40.0	kN
	Mass			830	g

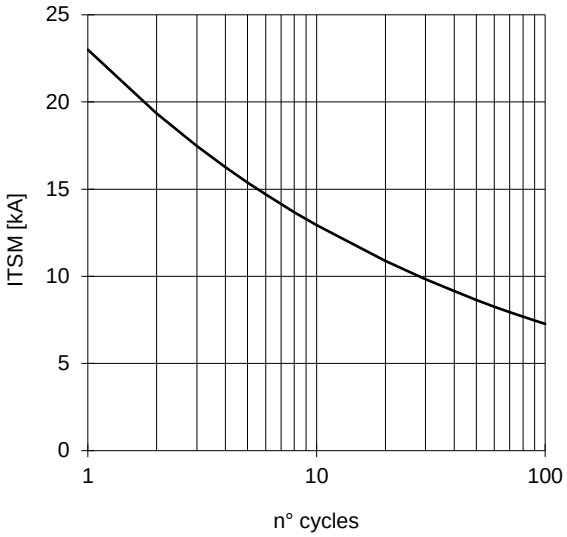
ORDERING INFORMATION : ARF681 S 45

standard specification — VRRM/100

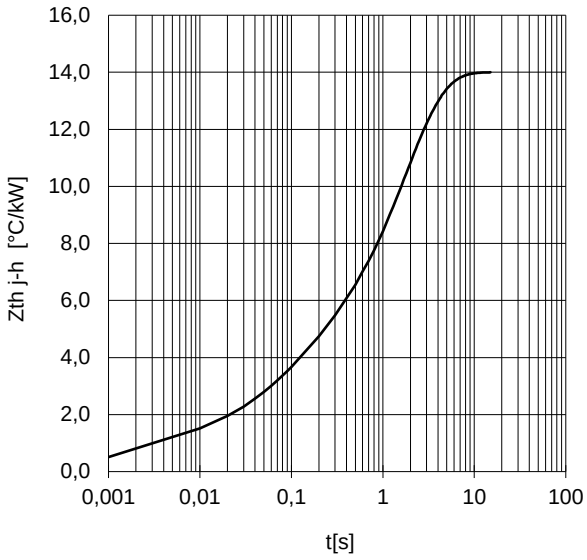
FORWARD CHARACTERISTIC
Tj = 140 °C

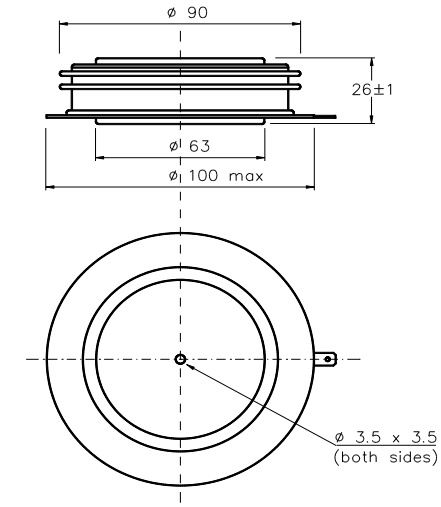


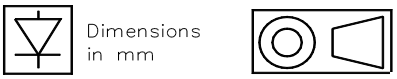
SURGE CHARACTERISTIC
Tj = 140 °C



TRANSIENT THERMAL IMPEDANCE
DOUBLE SIDE COOLED







All the characteristics given in this data sheet are guaranteed only with uniform clamping force, cleaned and lubricated heatsink, surfaces with flatness < .03 mm and roughness < 2 µm.
In the interest of product improvement POSEICO SpA 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 (simbols over shaded background) and characteristics is reported.

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