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Power SEmiconductors Italian COrporation

POSEICO SPA  
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**RECTIFIER DIODE**

**AR609**

Repetitive voltage up to **600 V**  
Mean forward current **5380 A**  
Surge current **50.4 kA**

**FINAL SPECIFICATION**

ago 02 - ISSUE : 03

Symbol	Characteristic	Conditions	T <sub>j</sub> [°C]	Value	Unit
<b>BLOCKING</b>					
V <sub>RRM</sub>	Repetitive peak reverse voltage		190	600	V
V <sub>RSM</sub>	Non-repetitive peak reverse voltage		190	700	V
I <sub>RRM</sub>	Repetitive peak reverse current	V=VRRM	190	75	mA
<b>CONDUCTING</b>					
I <sub>F(AV)</sub>	Mean forward current	180° sin ,50 Hz, Th=55°C, double side cooled		5380	A
I <sub>F(AV)</sub>	Mean forward current	180° sin ,50 Hz, Tc=85°C, double side cooled		5720	A
I <sub>FSM</sub>	Surge forward current	Sine wave, 10 ms without reverse voltage	190	50.4	kA
I <sup>2</sup> t	I <sup>2</sup> t			12701 x 1E3	A <sup>2</sup> s
V <sub>FM</sub>	Forward voltage	Forward current = 4500 A	25	1.05	V
V <sub>F(TO)</sub>	Threshold voltage		190	0.73	V
r <sub>F</sub>	Forward slope resistance		190	0.035	mohm
<b>SWITCHING</b>					
t <sub>rr</sub>	Reverse recovery time				µs
Q <sub>rr</sub>	Reverse recovery charge		190		µC
I <sub>rr</sub>	Peak reverse recovery current				A
<b>MOUNTING</b>					
R <sub>th(j-h)</sub>	Thermal impedance, DC	Junction to heatsink, double side cooled		21	°C/kW
R <sub>th(c-h)</sub>	Thermal impedance	Case to heatsink, double side cooled		6	°C/kW
T <sub>j</sub>	Operating junction temperature			-30 / 190	°C
F	Mounting force			22.0 / 24.5	kN
	Mass			520	g

**ORDERING INFORMATION : AR609 S 06**

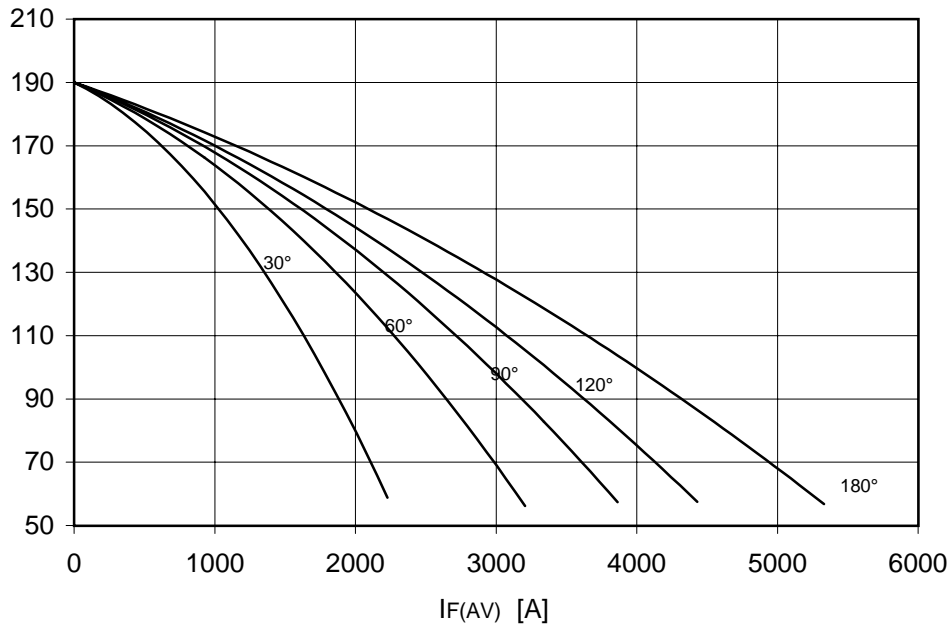
standard specification   VRRM/100



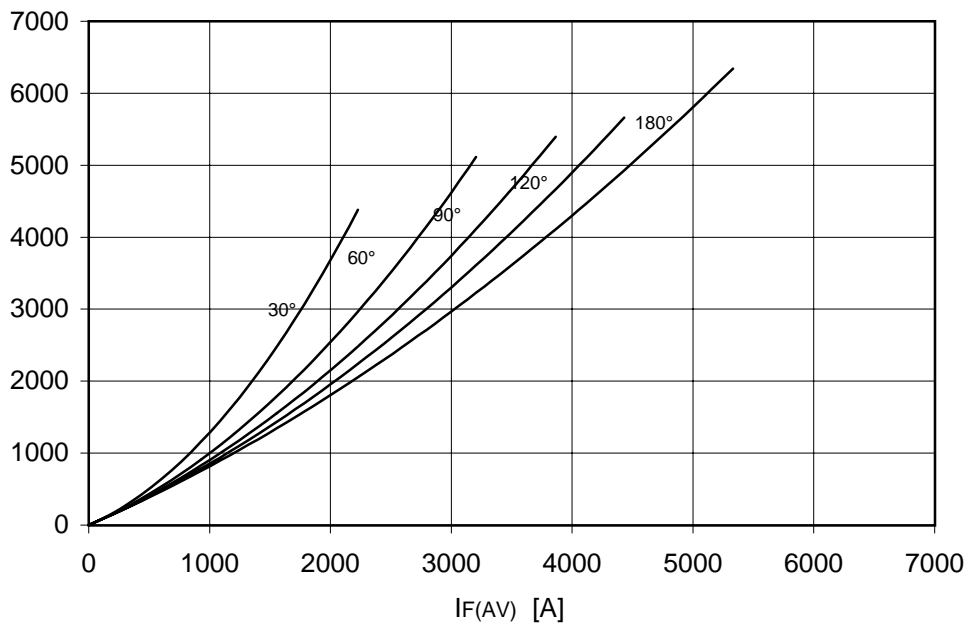
## DISSIPATION CHARACTERISTICS

### SINE WAVE

Th [°C]



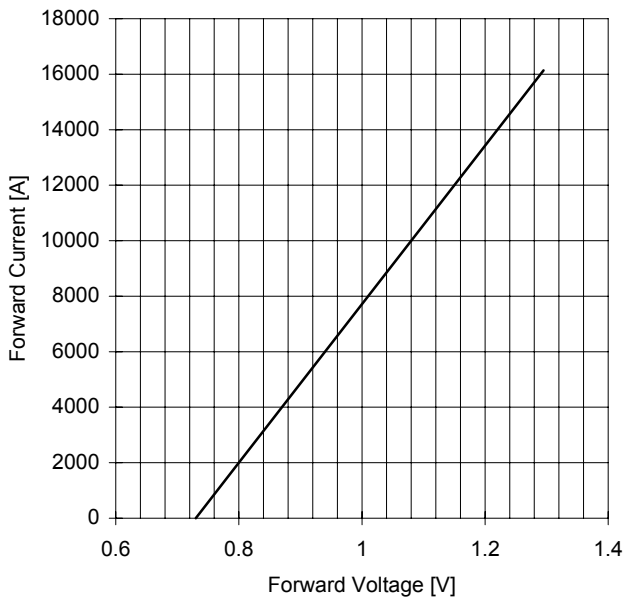
PF(AV) [W]



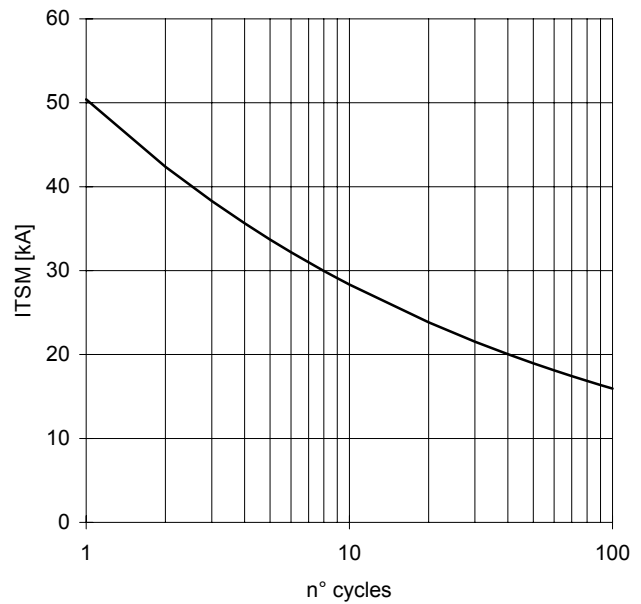
# AR609 RECTIFIER DIODE

FINAL SPECIFICATION ago 02 - ISSUE : 03

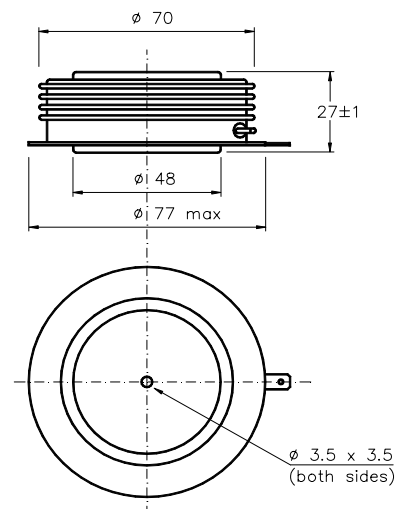
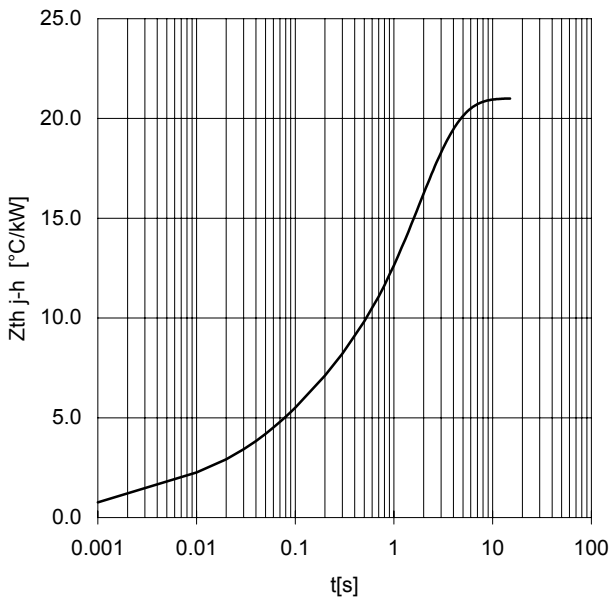
FORWARD CHARACTERISTIC  
 $T_j = 190\text{ }^\circ\text{C}$



SURGE CHARACTERISTIC  
 $T_j = 190\text{ }^\circ\text{C}$



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 mm and roughness < 2  $\mu\text{m}$ .

In the interest of product improvement POSEICO 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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