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POwer SEmiconductors Italian COrporation

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## RECTIFIER DIODE

# AR772

Repetitive voltage up to **5000 V**  
Mean forward current **4175 A**  
Surge current **45 kA**

### FINAL SPECIFICATION

Iug 02 - ISSUE : 1

Symbol	Characteristic	Conditions	T <sub>j</sub> [°C]	Value	Unit
<b>BLOCKING</b>					
V <sub>RRM</sub>	Repetitive peak reverse voltage		175	5000	V
V <sub>RSM</sub>	Non-repetitive peak reverse voltage		175	5100	V
I <sub>RRM</sub>	Repetitive peak reverse current	V=VRRM	175	200	mA
<b>CONDUCTING</b>					
I <sub>F(AV)</sub>	Mean forward current	180° sin ,50 Hz, Th=55°C, double side cooled		4175	A
I <sub>F(AV)</sub>	Mean forward current	180° sin ,50 Hz, Tc=85°C, double side cooled		3970	A
I <sub>FSM</sub>	Surge forward current	Sine wave, 10 ms without reverse voltage	175	45	kA
I <sup>2</sup> t	I <sup>2</sup> t			10125 x 1E3	A <sup>2</sup> s
V <sub>FM</sub>	Forward voltage	Forward current = 3000 A	25	1.45	V
V <sub>F(TO)</sub>	Threshold voltage		175	0.76	V
r <sub>F</sub>	Forward slope resistance		175	0.180	mohm
<b>SWITCHING</b>					
t <sub>rr</sub>	Reverse recovery time	I= 1600 A			µs
Q <sub>rr</sub>	Reverse recovery charge	di/dt= 2A/µs	175		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		11	°C/kW
R <sub>th(c-h)</sub>	Thermal impedance	Case to heatsink, double side cooled		2	°C/kW
T <sub>j</sub>	Operating junction temperature			-30 / 175	°C
F	Mounting force			46.0 / 54.0	kN
	Mass			1700	g

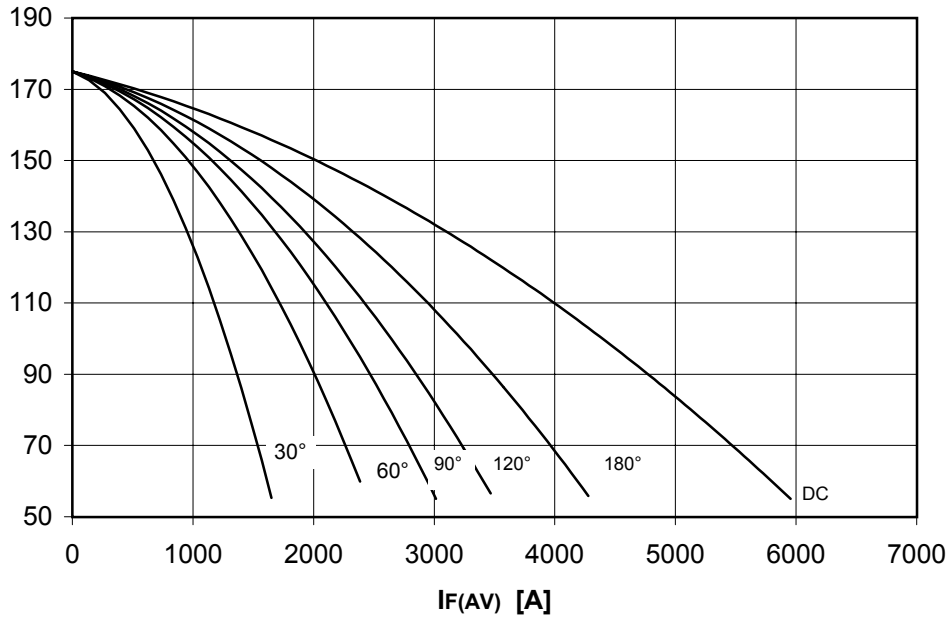
### ORDERING INFORMATION : AR772 S 50

standard specification   VRRM/100

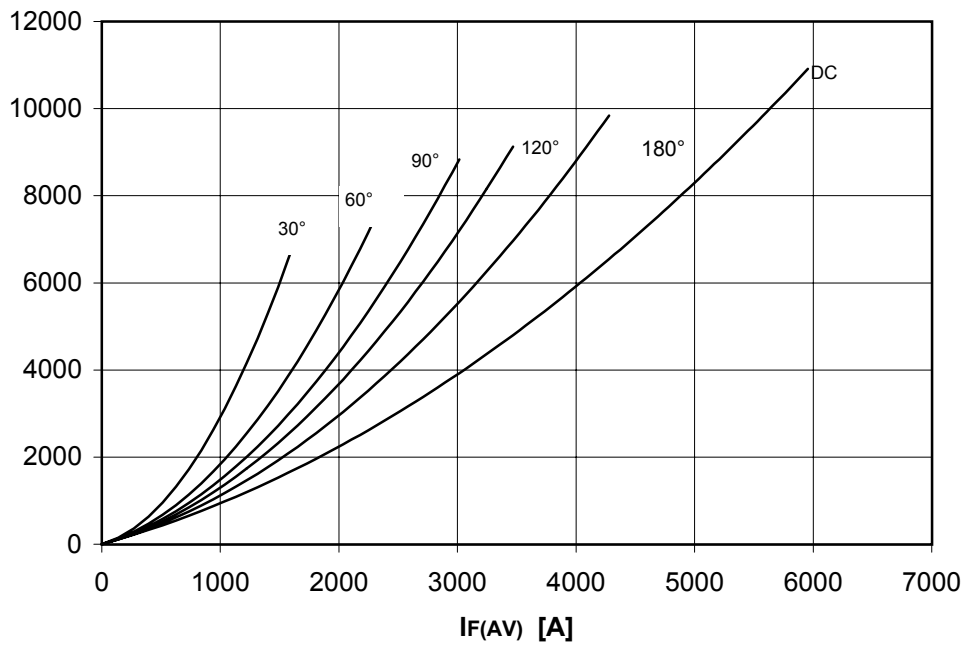
## DISSIPATION CHARACTERISTICS

### SQUARE WAVE

Th [°C]



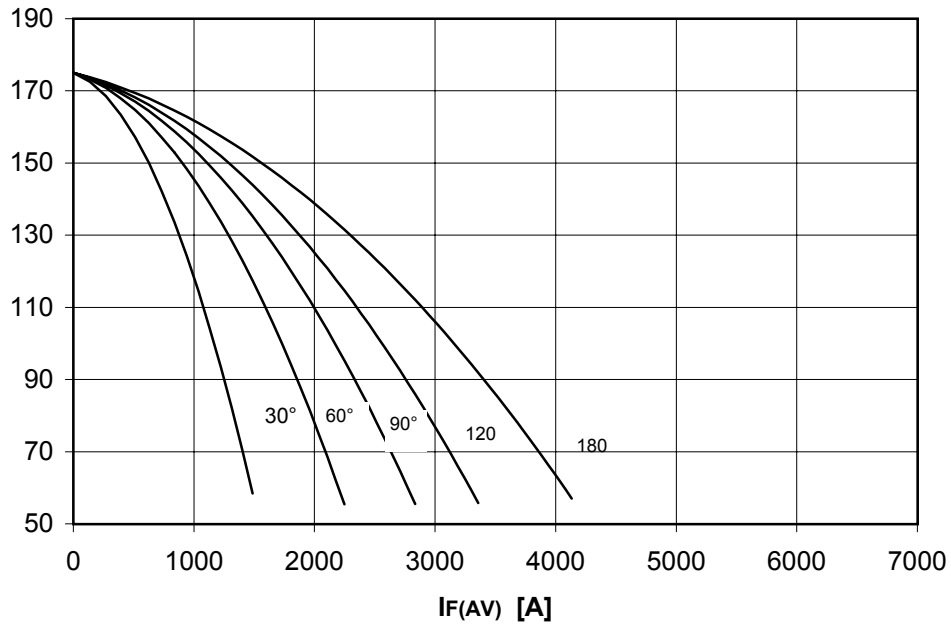
PF(AV) [W]



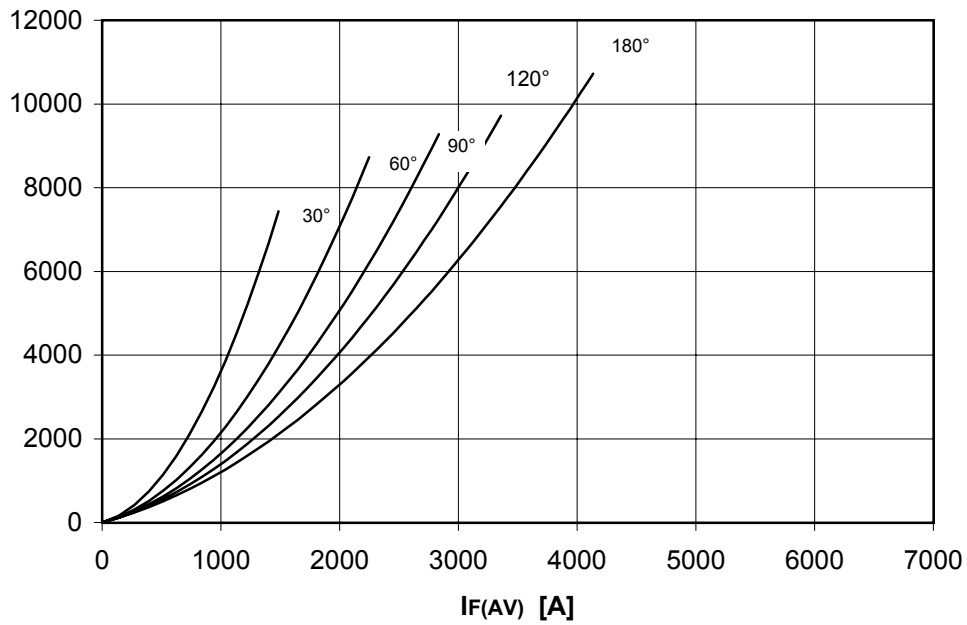
## DISSIPATION CHARACTERISTICS

SINE WAVE

Th [°C]



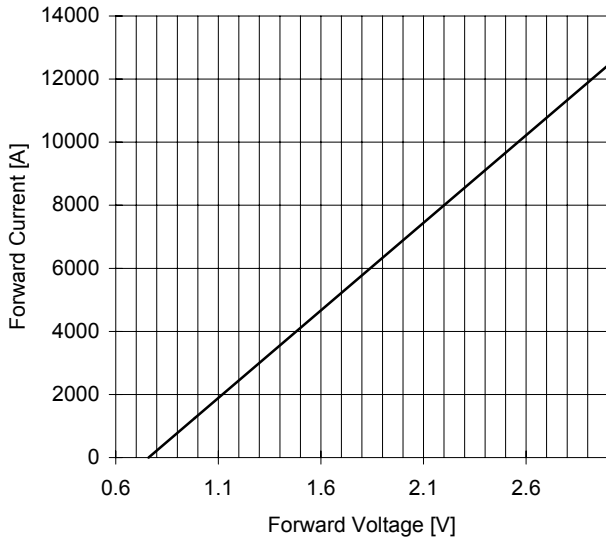
PF(AV) [W]



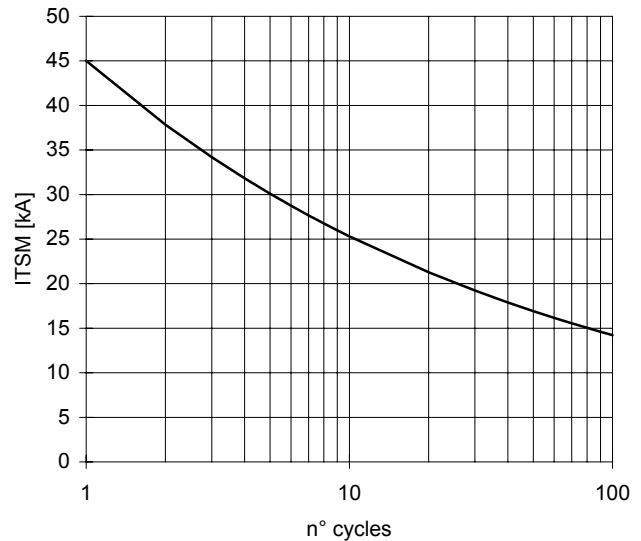
# AR772 RECTIFIER DIODE

FINAL SPECIFICATION lug 02 - ISSUE : 1

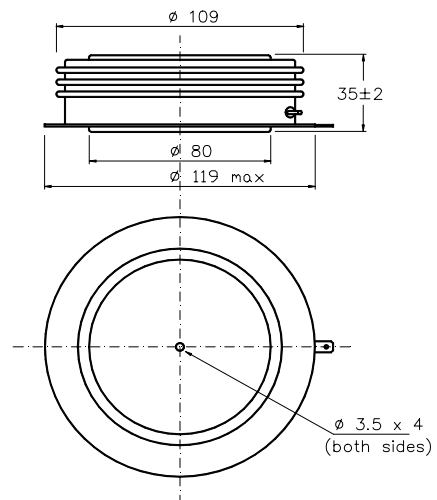
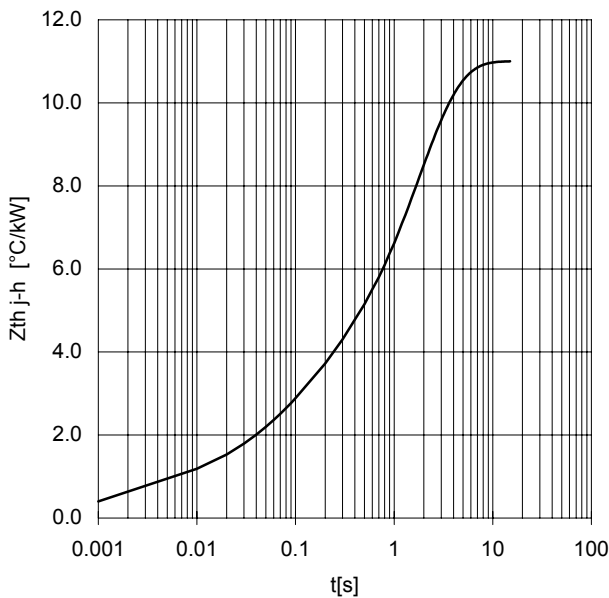
FORWARD CHARACTERISTIC  
 $T_j = 175\text{ }^\circ\text{C}$



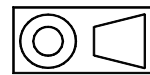
SURGE CHARACTERISTIC  
 $T_j = 175\text{ }^\circ\text{C}$



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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