

RECTIFIER DIODE

ARF422

Repetitive voltage up to	1600 V
Mean forward current	940 A
Surge current	14 kA

FINAL SPECIFICATION

June 17 - Issue: 4

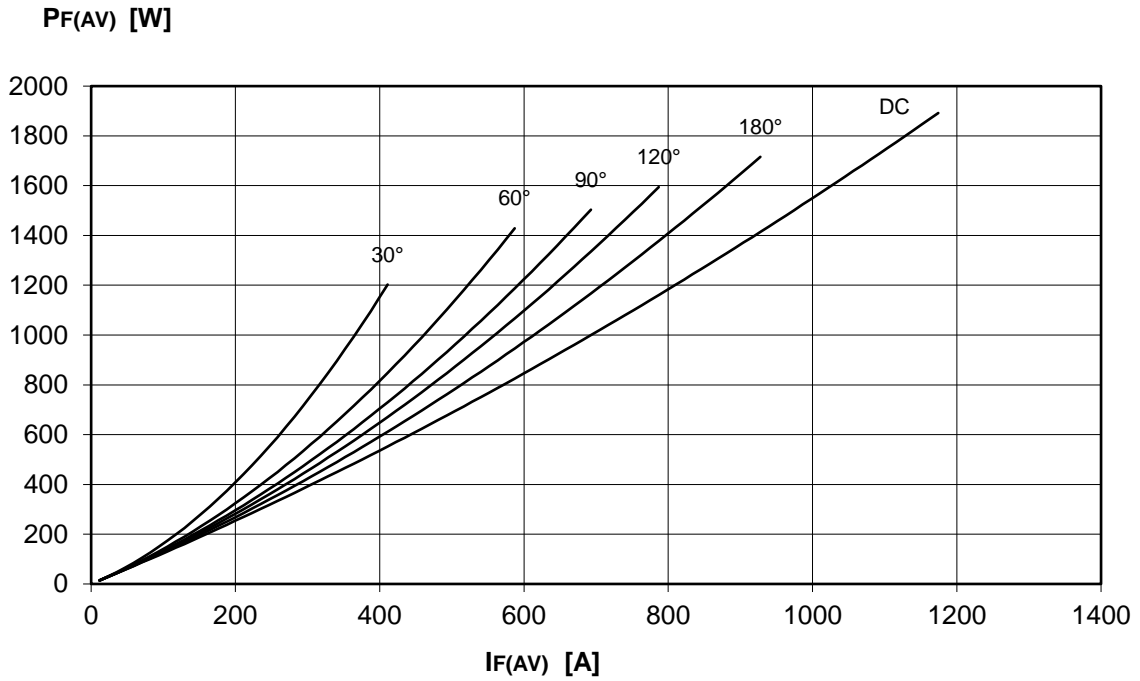
Symbol	Characteristic	Conditions	T _j [°C]	Value	Unit
BLOCKING					
V _{RRM}	Repetitive peak reverse voltage		125	1600	V
V _{RSM}	Non-repetitive peak reverse voltage		125	1700	V
I _{RRM}	Repetitive peak reverse current	V=VRRM	125	50	mA
CONDUCTING					
I _{F(AV)}	Mean forward current	180° sin, 50 Hz, Th=55°C, double side cooled		940	A
I _{F(AV)}	Mean forward current	180°square, 50 Hz, Th=55°C, double side cooled		929	A
I _{FSM}	Surge forward current	Sine wave, 10 ms riapped reverse voltage up to 50% VRSM	125	14	kA
I ² t	I ² t			980 x 10 ³	A ² s
V _{FM}	Forward voltage	Forward current = 1200 A	25	1,62	V
V _{F(TO)}	Threshold voltage		125	1,20	V
r _F	Forward slope resistance		125	0,350	mohm
SWITCHING					
t _{rr}	Reverse recovery time	IF= 1000A di/dt= 60 A/μs VR= 50V	125	3,5	μs
Q _{rr}	Reverse recovery charge			200	μC
I _{rr}	Peak reverse recovery current			120	A
s	Softness (s-factor), min			0,5	
V _{FR}	Peak forward recovery	di/dt = 100 A/μs	125	5	V
MOUNTING					
R _{th(j-h)}	Thermal impedance, DC	Junction to heatsink, double side cooled		37,0	°C/kW
R _{th(c-h)}	Thermal impedance	Case to heatsink, double side cooled		7,0	°C/kW
T _j	Operating junction temperature			-30 / 125	°C
F	Mounting force			11.8 / 13.2	kN
	Mass			300	g

ORDERING INFORMATION : ARF422 S 16

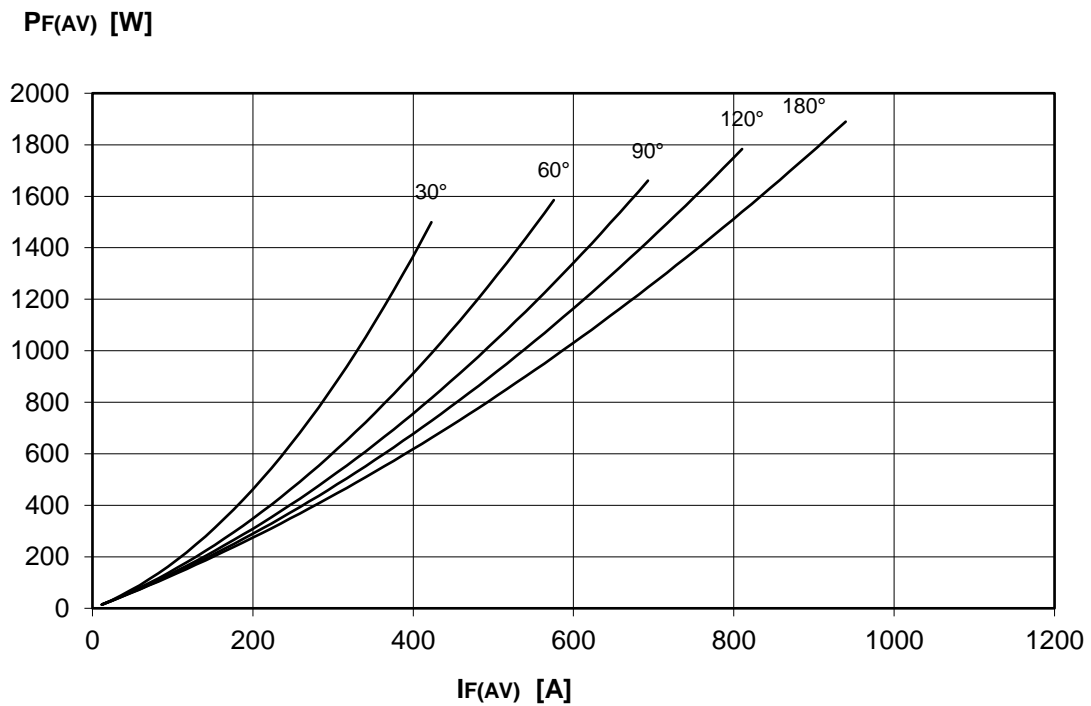
 standard specification VRRM/100

DISSIPATION CHARACTERISTICS

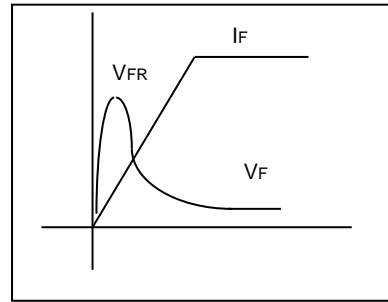
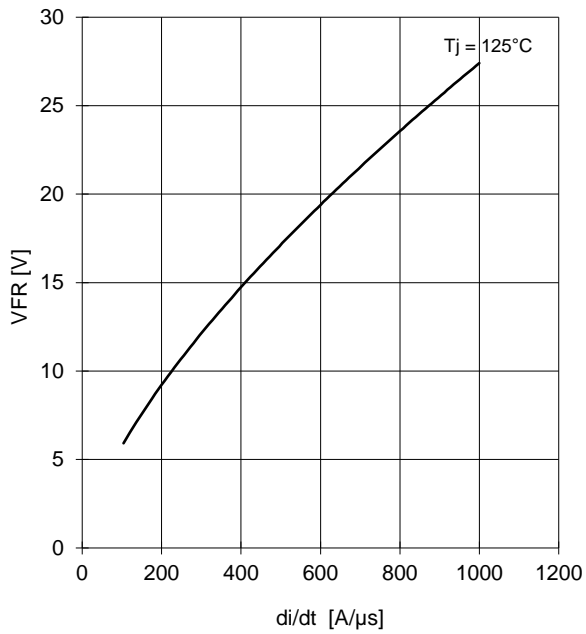
SQUARE WAVE (50Hz)



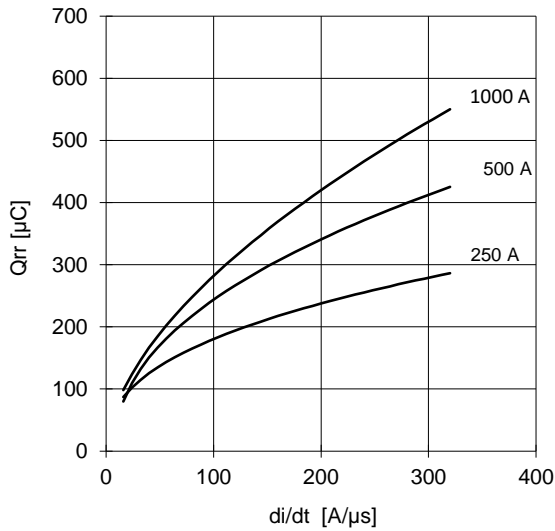
SINE WAVE (50Hz)



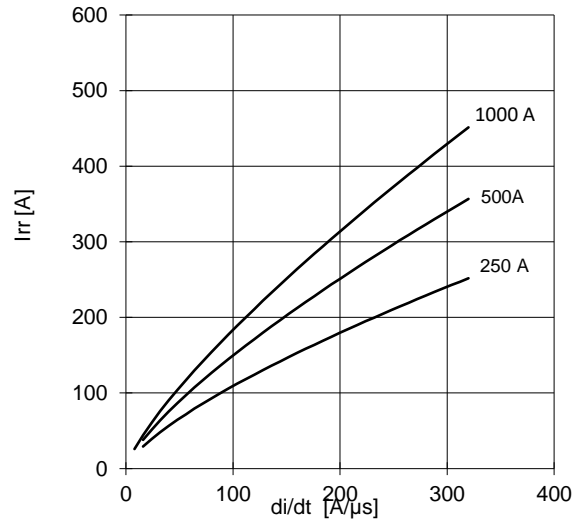
FORWARD RECOVERY VOLTAGE



REVERSE RECOVERY CHARGE Tj = 125 °C



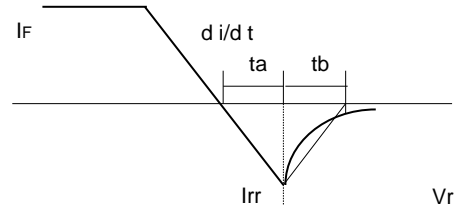
REVERSE RECOVERY CURRENT Tj = 125 °C



$$t_a = I_{rr} / (di/dt) \quad t_b = t_{rr} - t_a$$

$$\text{Softness (s factor)} \quad s = t_b / t_a$$

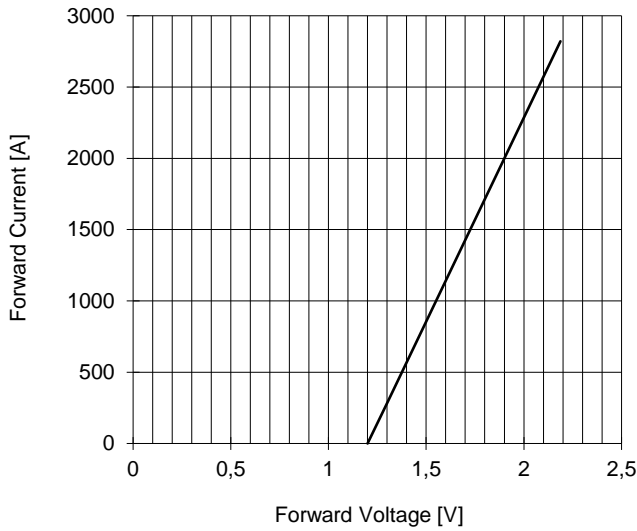
$$\text{Energy dissipation during recovery } E_r = V_r \cdot (Q_{rr} - I_{rr} \cdot t_a / 2)$$



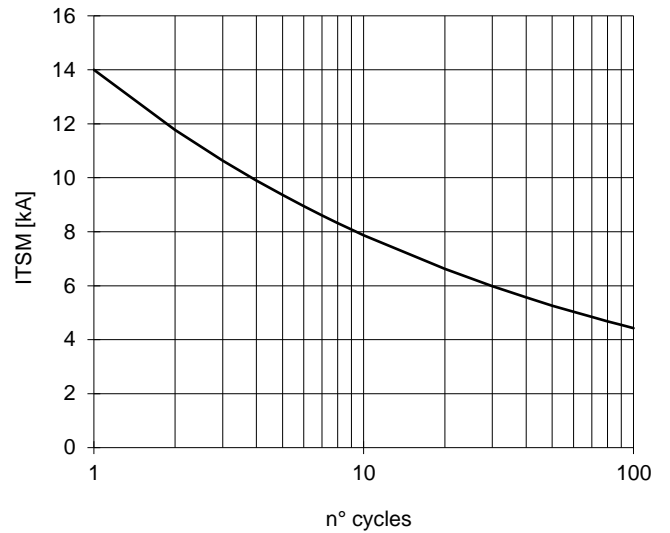
ARF422 RECTIFIER DIODE

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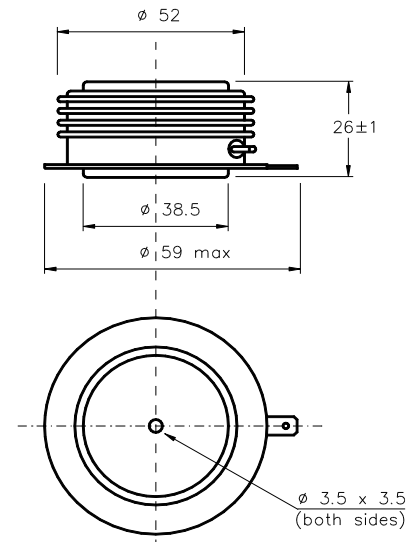
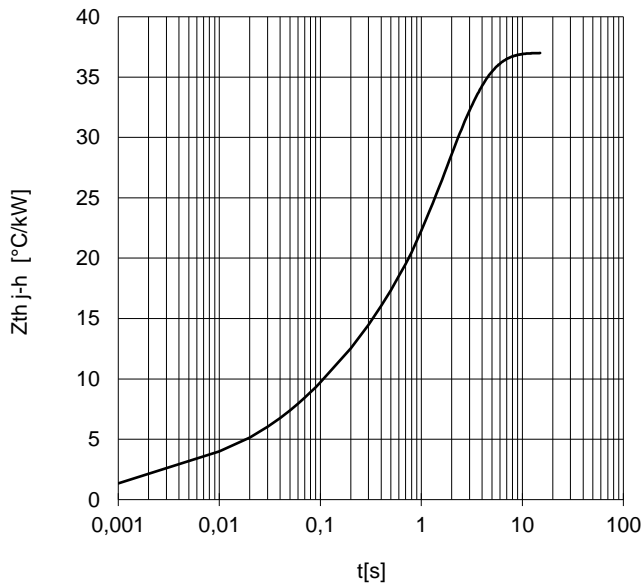
FORWARD CHARACTERISTIC
T_j = 125 °C



SURGE CHARACTERISTIC
T_j = 125 °C



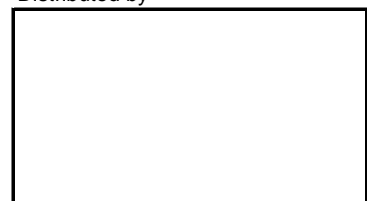
TRANSIENT THERMAL IMPEDANCE
DOUBLE SIDE COOLED



Dimensions
in mm



Distributed by



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 (symbols over shaded background) and characteristics is reported.