

FAST RECOVERY DIODE

ARF490

Repetitive voltage up to

5600 V

Mean forward current

652 A

Surge current

10 kA
FINAL SPECIFICATION

June 17 - Issue: 2

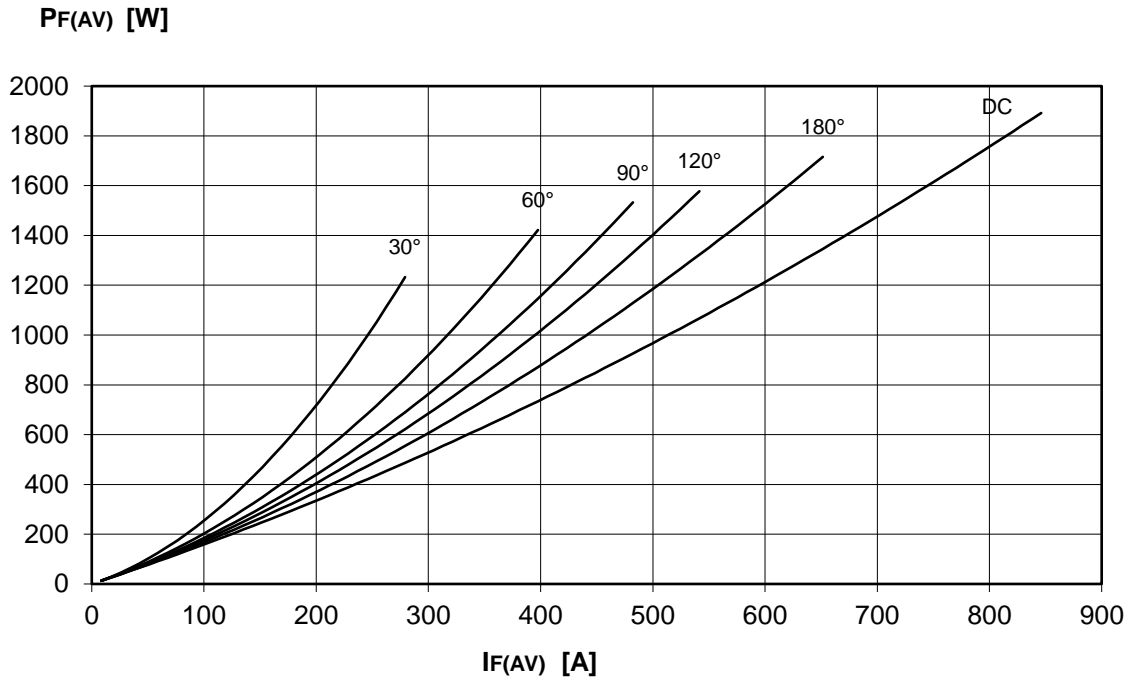
Symbol	Characteristic	Conditions	T _j [°C]	Value	Unit
BLOCKING					
V _{RRM}	Repetitive peak reverse voltage		125	5600	V
V _{RSM}	Non-repetitive peak reverse voltage		125	5700	V
I _{RRM}	Repetitive peak reverse current	V=VRRM	125	100	mA
CONDUCTING					
I _{F(AV)}	Mean forward current	180° sin, 50 Hz, Th=55°C, double side cooled		652	A
I _{F(AV)}	Mean forward current	180°square, 50 Hz, Th=55°C, double side cooled		652	A
I _{FSM}	Surge forward current	Sine wave, 10 ms	125	9,5	kA
I ² t	I ² t	riapped reverse voltage up to 50% VRSM		451 x 10 ³	A ² s
V _{FM}	Forward voltage	Forward current = 1200 A	25	2,54	V
V _{F(TO)}	Threshold voltage		125	1,50	V
r _F	Forward slope resistance		125	0,870	mohm
SWITCHING					
t _{rr}	Reverse recovery time	IF= 1000A	125	4,8	μs
Q _{rr}	Reverse recovery charge	di/dt= 200 A/μs		1400	μC
I _{rr}	Peak reverse recovery current	VR= 100V		580	A
s	Softness (s-factor), min	50% chord		0,5	
V _{FR}	Peak forward recovery	di/dt = 400 A/μs	125	60	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 : ARF490 S 56

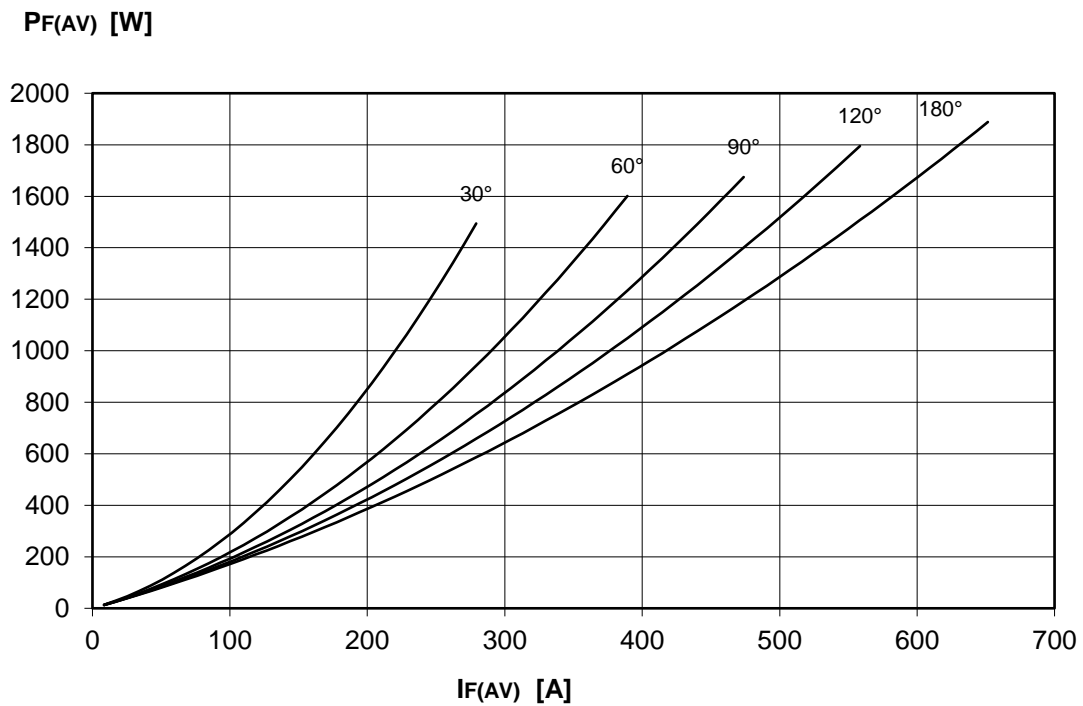
 standard specification VRRM/100

DISSIPATION CHARACTERISTICS

SQUARE WAVE (50Hz)



SINE WAVE (50Hz)

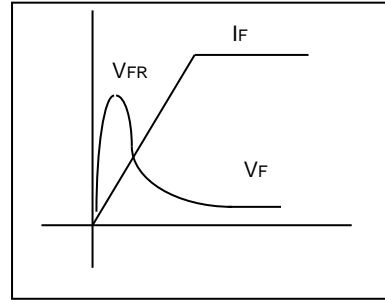
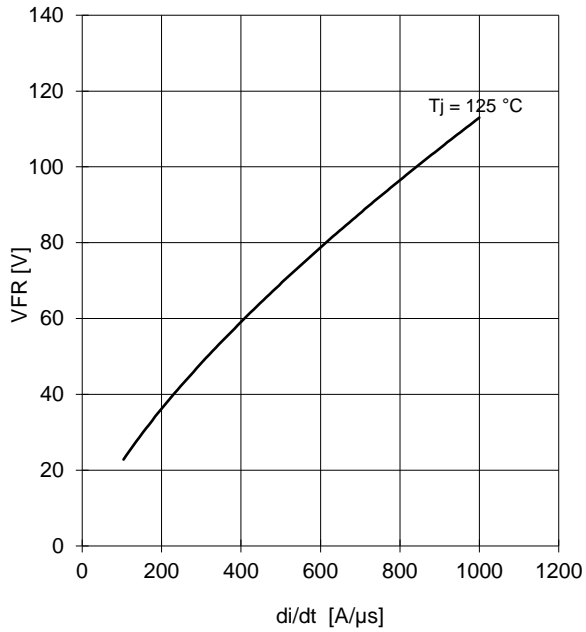


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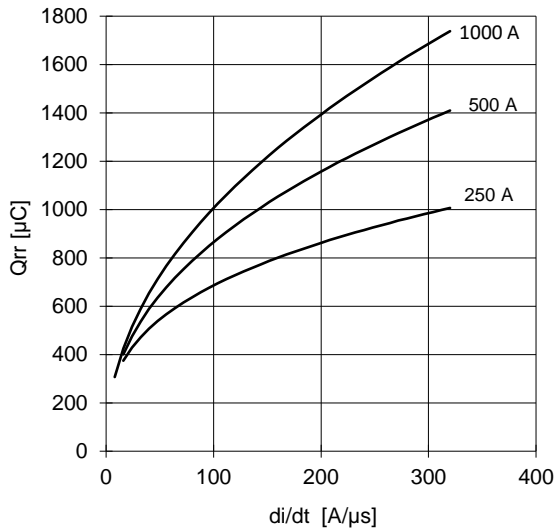


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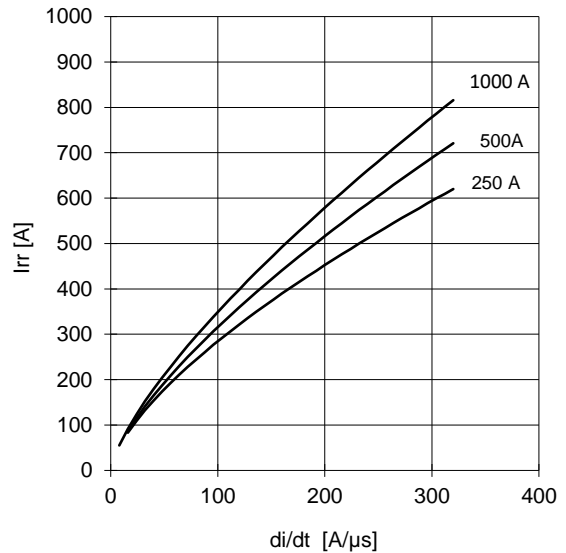
FORWARD RECOVERY VOLTAGE



REVERSE RECOVERY CHARGE Tj = 125 °C



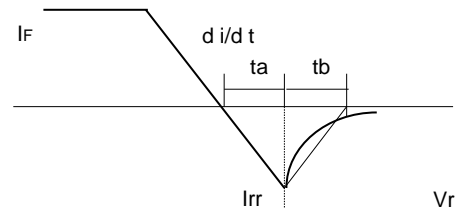
REVERSE RECOVERY CURRENT Tj = 125 °C



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

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

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

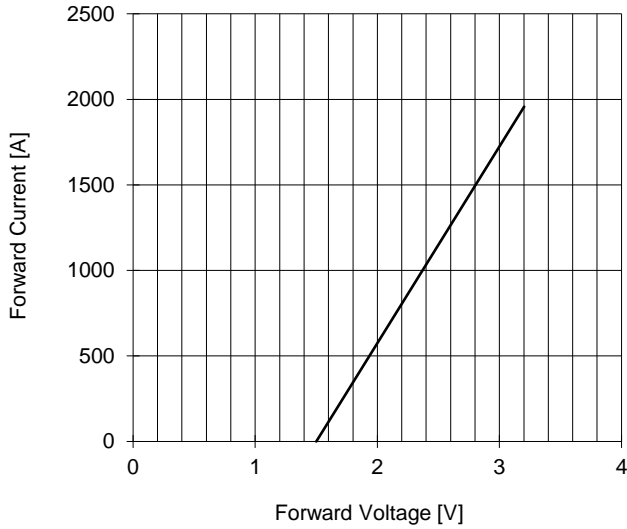


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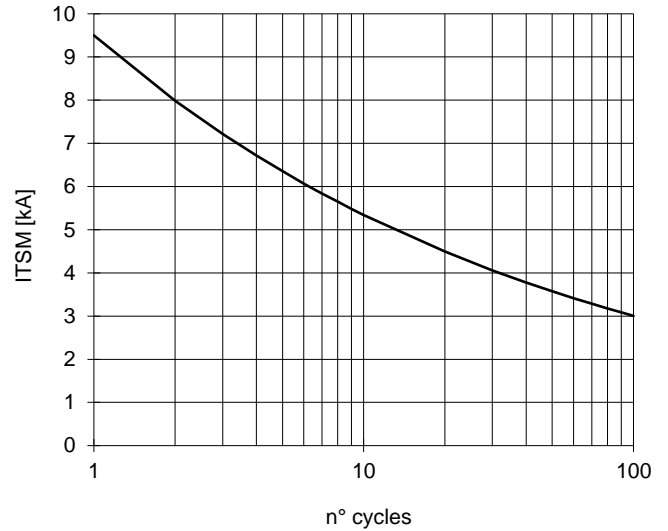


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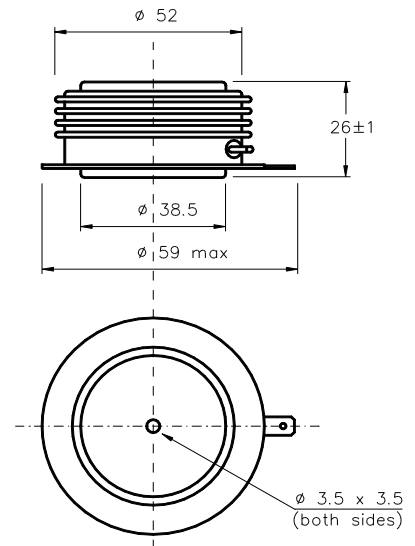
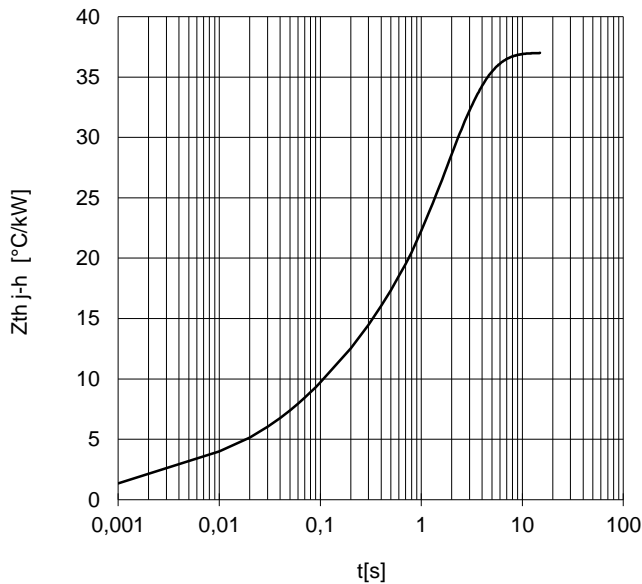
FORWARD CHARACTERISTIC
T_j = 150 °C



SURGE CHARACTERISTIC
T_j = 150 °C



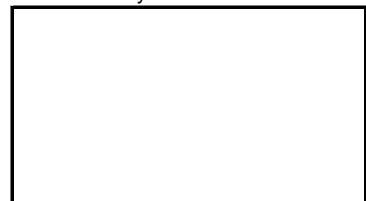
TRANSIENT THERMAL IMPEDANCE
DOUBLE SIDE COOLED



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.