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## FAST RECOVERY DIODE

# ARF774

Repetitive voltage up to **4500 V**  
Mean forward current **2325 A**  
Surge current **26 kA**

### FINAL SPECIFICATION

apr 97 - ISSUE : 01

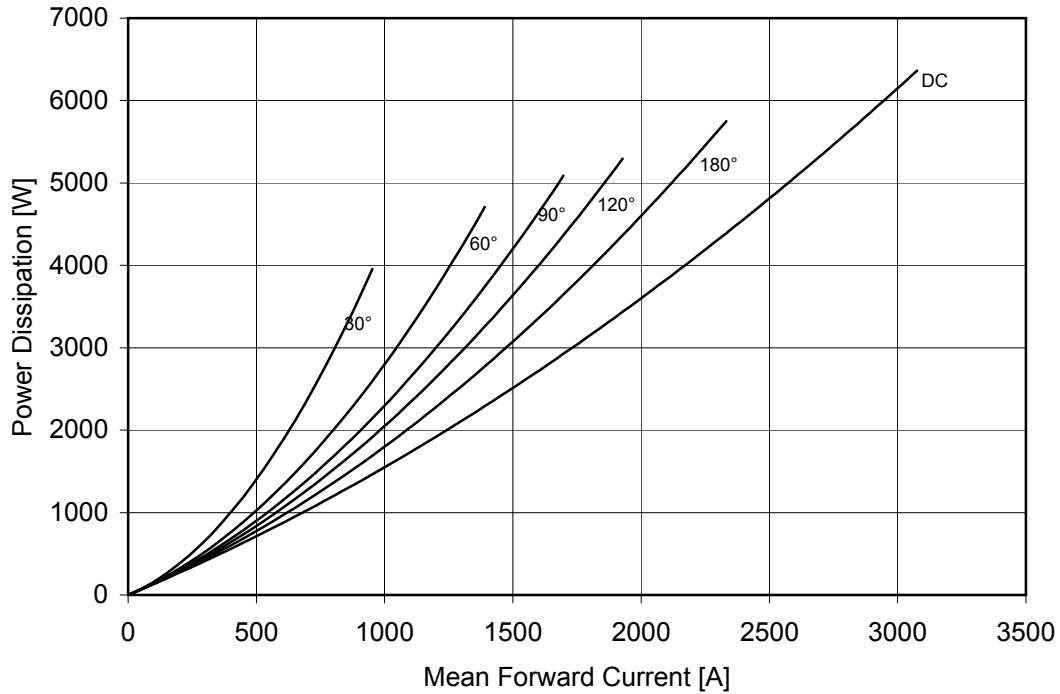
Symbol	Characteristic	Conditions	T <sub>j</sub> [°C]	Value	Unit
<b>BLOCKING</b>					
V <sub>RRM</sub>	Repetitive peak reverse voltage		125	4500	V
V <sub>RSM</sub>	Non-repetitive peak reverse voltage		125	4600	V
I <sub>RRM</sub>	Repetitive peak reverse current	V=VRRM	125	150	mA
<b>CONDUCTING</b>					
I <sub>F(AV)</sub>	Mean forward current	180° sin ,50 Hz, Th=55°C, double side cooled		2325	A
I <sub>F(AV)</sub>	Mean forward current	180° square,50 Hz,Th=55°C,double side cooled		2340	A
I <sub>FSM</sub>	Surge forward current	Sine wave, 10 ms reapplied reverse voltage up to 50% VRSM	125	26	kA
I <sup>2</sup> t	I <sup>2</sup> t			3380 x1E3	A <sup>2</sup> s
V <sub>FM</sub>	Forward voltage	Forward current = 2000 A	125	1,8	V
V <sub>F(TO)</sub>	Threshold voltage		125	1,30	V
r <sub>F</sub>	Forward slope resistance		125	0,250	mohm
<b>SWITCHING</b>					
t <sub>rr</sub>	Reverse recovery time	I <sub>F</sub> = 1000 A	125	8,6	μs
Q <sub>rr</sub>	Reverse recovery charge	di/dt= 60 A/μs		1500	μC
I <sub>rr</sub>	Peak reverse recovery current	VR = 50 V		350	A
s	Softness (s-factor), min			0,5	
V <sub>FR</sub>	Peak forward recovery	di/dt= 400 A/μs	125	31	V
<b>MOUNTING</b>					
R <sub>th(j-h)</sub>	Thermal impedance	Junction to heatsink, double side cooled		11	°C/kW
T <sub>j</sub>	Operating junction temperature			-30 / 125	°C
F	Mounting force			46.0 / 54.0	kN
	Mass			1700	g

### ORDERING INFORMATION : ARF774 S 45

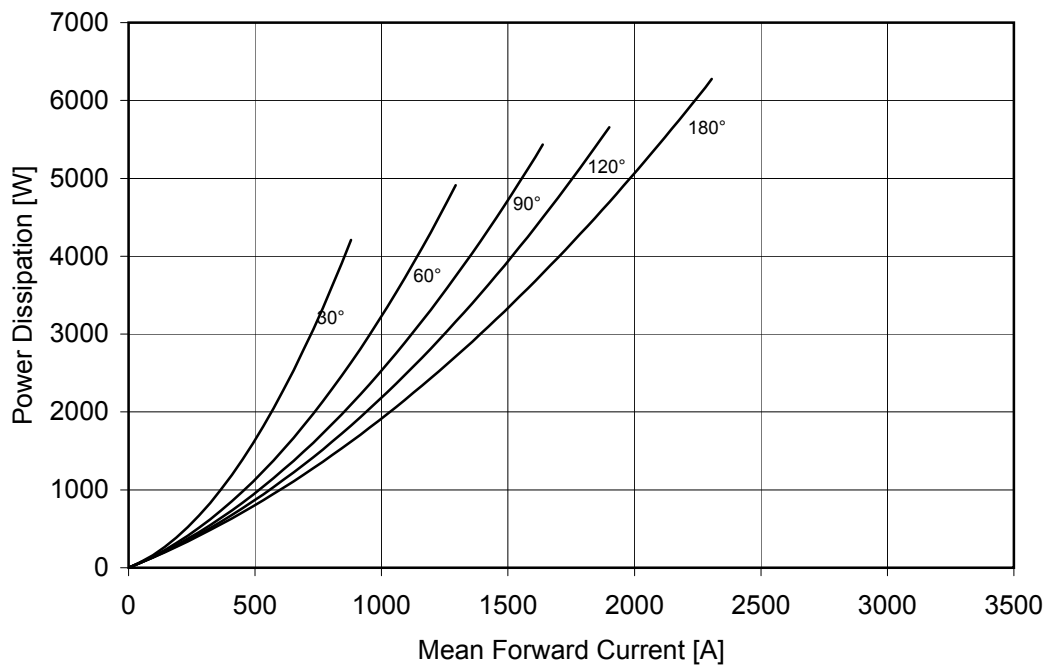
standard specification   VRRM/100

## DISSIPATION CHARACTERISTICS

### SQUARE WAVE

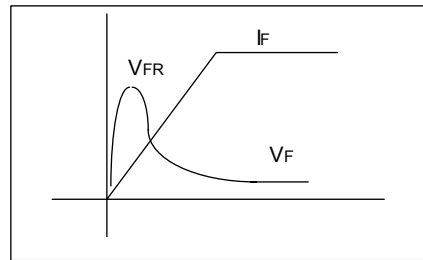
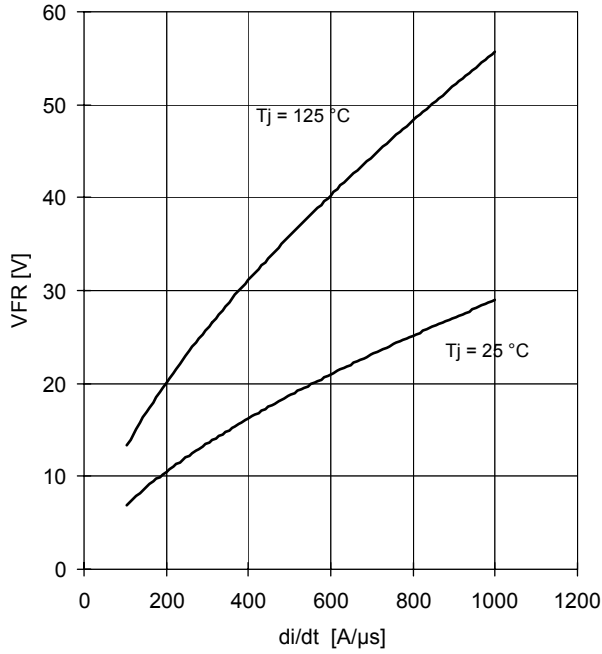


### SINE WAVE

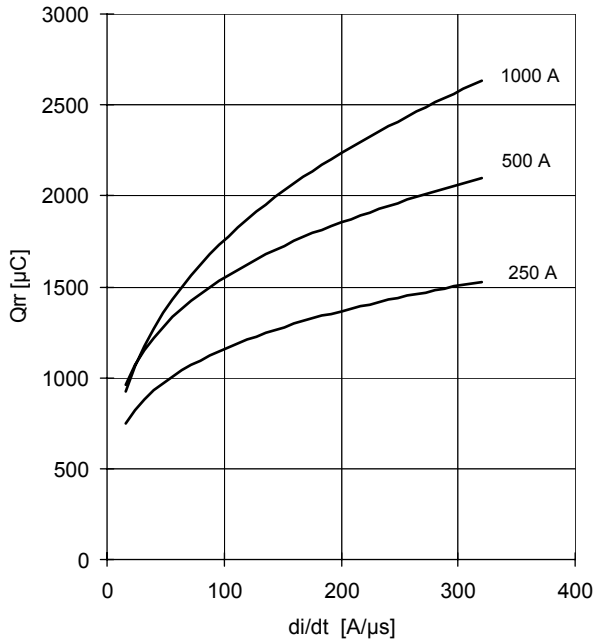


## SWITCHING CHARACTERISTICS

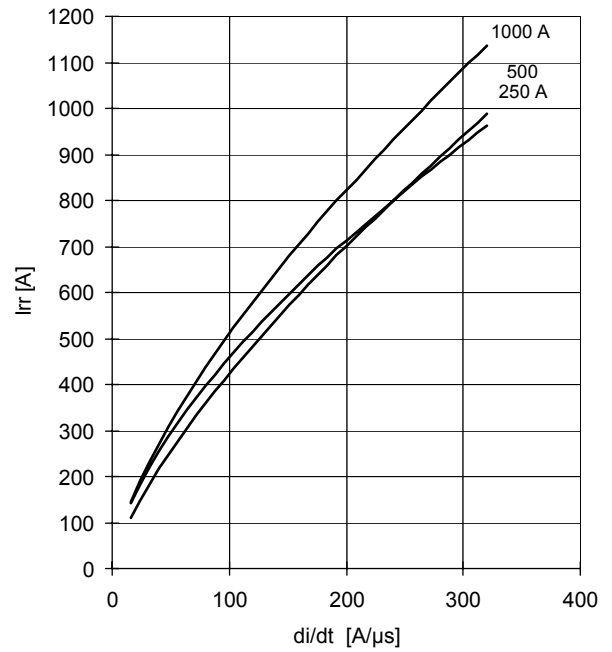
FORWARD RECOVERY VOLTAGE



REVERSE RECOVERY CHARGE  
Tj = 125 °C



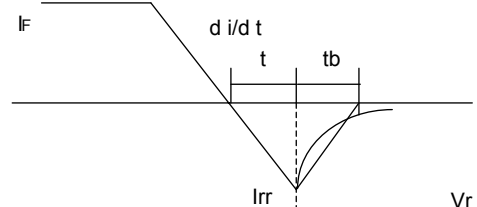
REVERSE RECOVERY CURRENT  
Tj = 125 °C



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

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

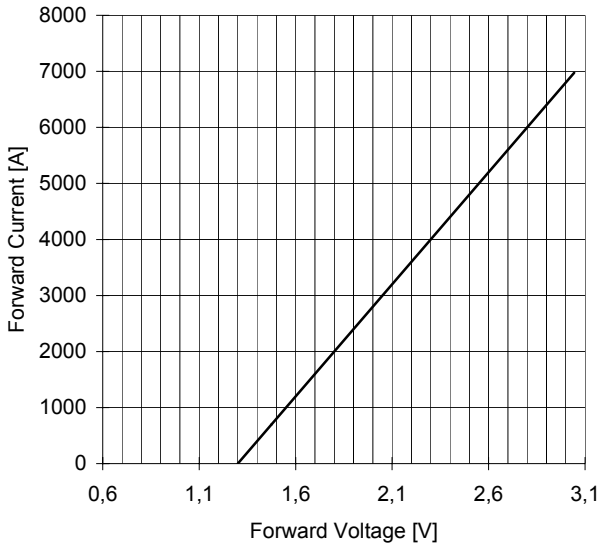
$$\text{Energy dissipation during recovery } E_r = V_r \cdot (Q_{rr} - I_{rr} \cdot t_a / 2)$$



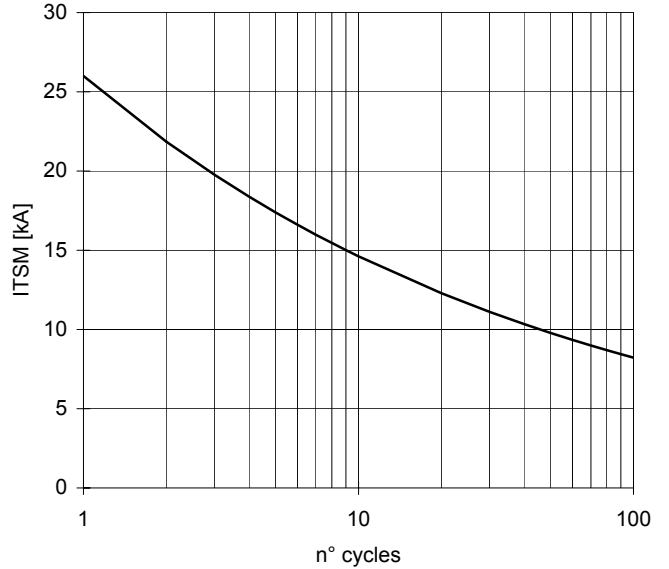
# ARF774 FAST RECOVERY DIODE

FINAL SPECIFICATION apr 97 - ISSUE : 01

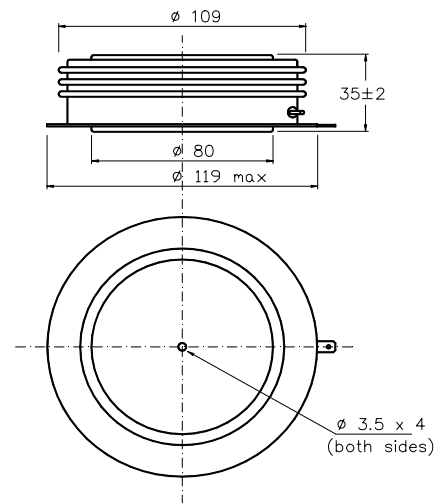
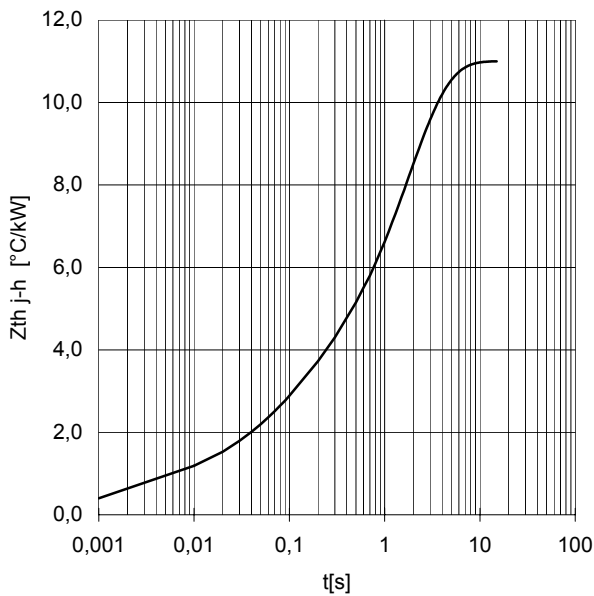
FORWARD CHARACTERISTIC  
 $T_j = 125^\circ\text{C}$



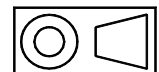
SURGE CHARACTERISTIC  
 $T_j = 125^\circ\text{C}$



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  $< 0.03 \text{ mm}$  and roughness  $< 2 \mu\text{m}$ .

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.

Distributed by

