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FAST RECOVERY DIODE

ARF677

Repetitive voltage up to **4500 V**
Mean forward current **1374 A**
Surge current **18 kA**

FINAL SPECIFICATION
June 17 - Issue: 2

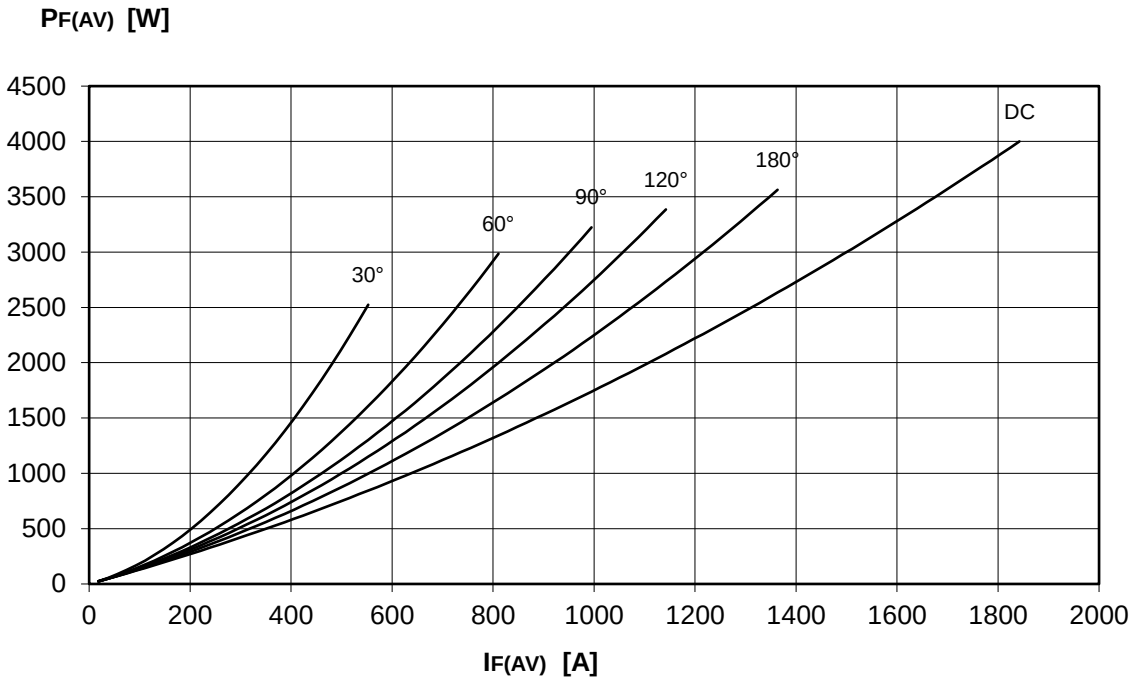
Symbol	Characteristic	Conditions	Tj [°C]	Value	Unit
BLOCKING					
V_{RRM}	Repetitive peak reverse voltage		140	4500	V
V_{RSM}	Non-repetitive peak reverse voltage		140	4600	V
I_{RRM}	Repetitive peak reverse current	V=VRRM	140	100	mA
CONDUCTING					
$I_{F(AV)}$	Mean forward current	180° sin, 50 Hz, Th=55°C, double side cooled		1374	A
$I_{F(AV)}$	Mean forward current	180°square, 50 Hz, Th=55°C, double side cooled		1381	A
I_{FSM}	Surge forward current	Sine wave, 10 ms	140	18	kA
I^2t	I^2t	riappled reverse voltage up to 50% VRSM		1620 x 10^3	A^2s
V_{FM}	Forward voltage	Forward current = 1570 A	25	2,40	V
$V_{F(TO)}$	Threshold voltage		140	1,25	V
r_F	Forward slope resistance		140	0,500	mohm
SWITCHING					
t_{rr}	Reverse recovery time	IF= 500A		7	µs
Q_{rr}	Reverse recovery charge	di/dt= 80 A/µs	140	1150	µC
I_{rr}	Peak reverse recovery current	VR= 100V		330	A
s	Softness (s-factor), min			0,5	
V_{FR}	Peak forward recovery	di/dt = 400 A/µs	140	40	V
MOUNTING					
$R_{th(j-h)}$	Thermal impedance, DC	Junction to heatsink, double side cooled		21,0	°C/kW
$R_{th(c-h)}$	Thermal impedance	Case to heatsink, double side cooled		4,0	°C/kW
T_j	Operating junction temperature			-30 / 140	°C
F	Mounting force			22.0 / 24.5	kN
	Mass			520	g

ORDERING INFORMATION : ARF677 S 45

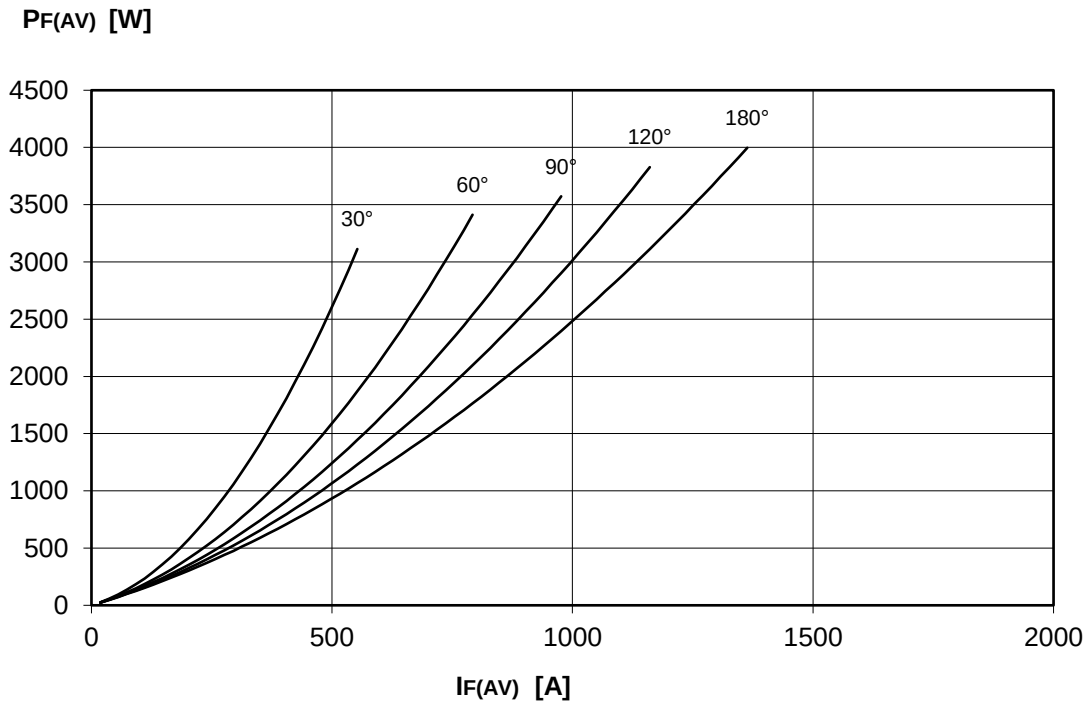
standard specification — VRRM/100

DISSIPATION CHARACTERISTICS

SQUARE WAVE (50Hz)



SINE WAVE (50Hz)



ARF677 FAST RECOVERY DIODE

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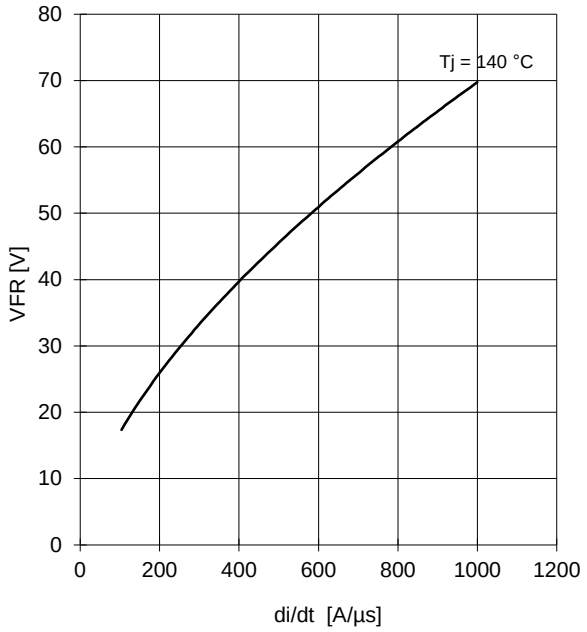
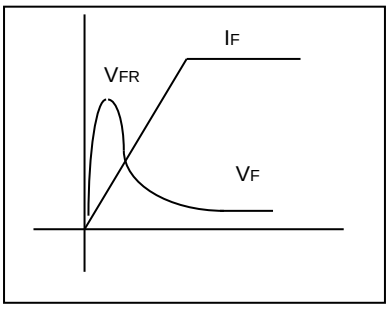
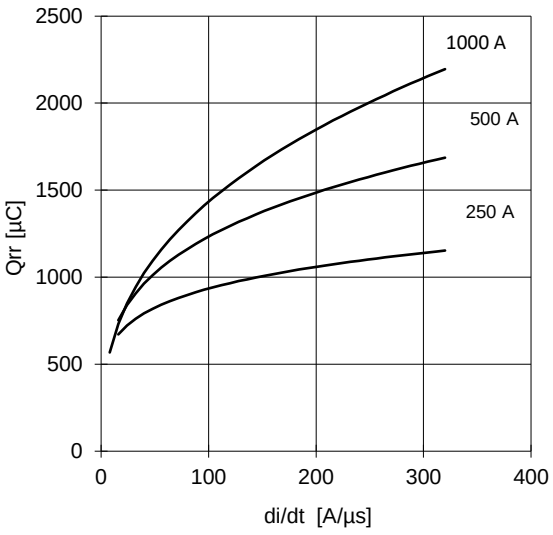
FORWARD RECOVERY VOLTAGE

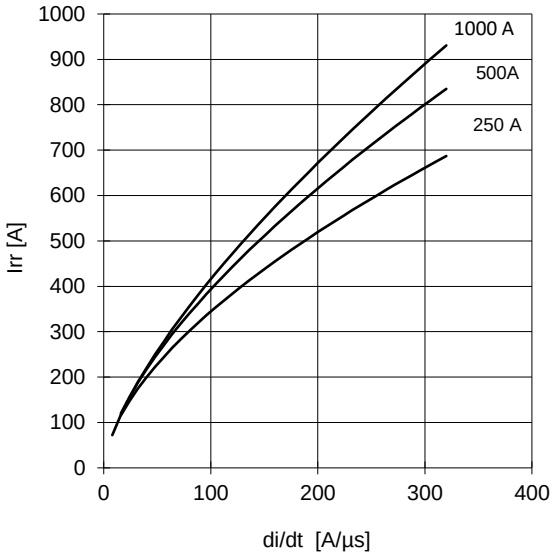




REVERSE RECOVERY CHARGE
Tj = 140 °C



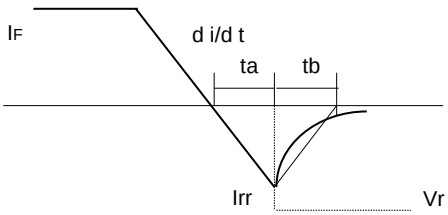
REVERSE RECOVERY CURRENT
Tj = 140 °C



ta = Irr / (di/dt) tb = trr - ta

Softness (s factor) s = tb / ta

Energy dissipation during recovery Er = Vr ·(Qrr - Irr ·ta / 2)

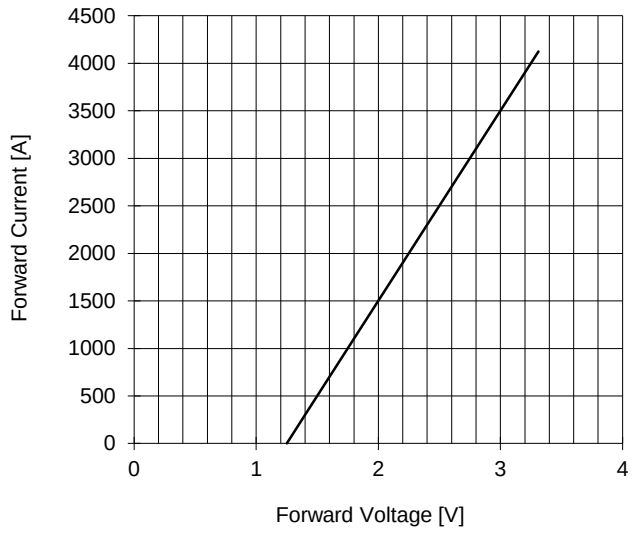


ARF677 FAST RECOVERY DIODE

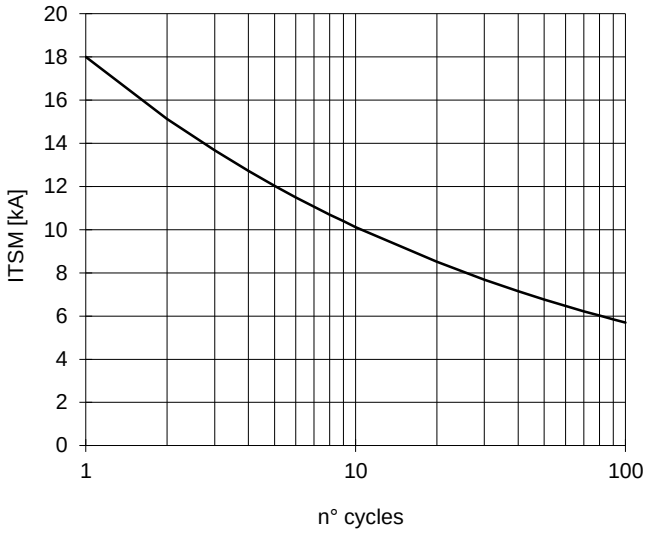
POSEICO POWER ELECTRONICS

FINAL SPECIFICATION June 17 - Issue: 2

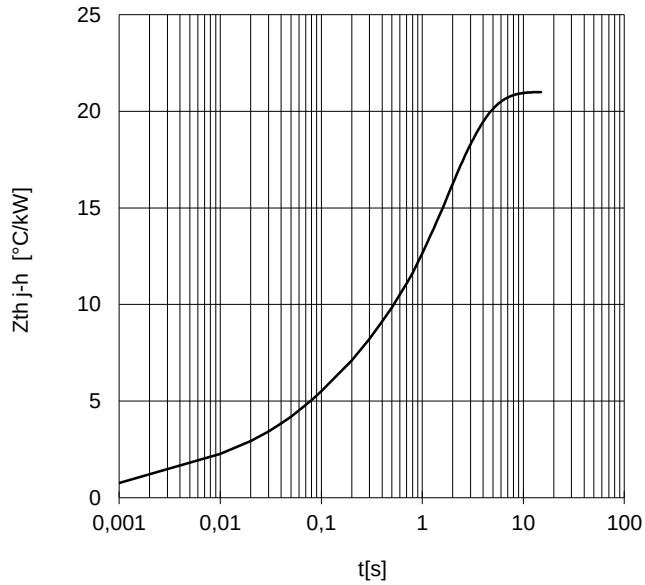
FORWARD CHARACTERISTIC
Tj = 140 °C

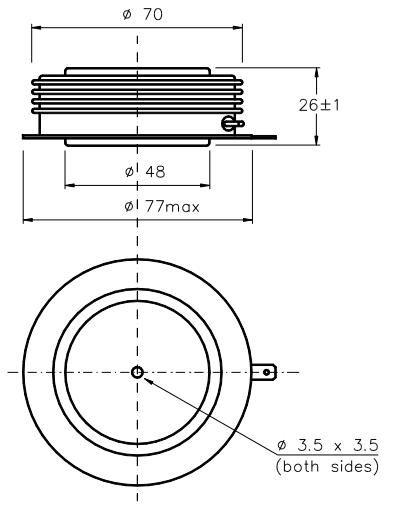


SURGE CHARACTERISTIC
Tj = 140 °C



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 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 (simbols over shaded background) and characteristics is reported.

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