

## GATE TURN-OFF THYRISTOR

# ATG778

Repetitive voltage up to **4500 V**  
Mean on-state current **760 A**  
Controllable on-state current **3000 A**  
Surge on-state current **17 kA**

### FINAL SPECIFICATION

gen 19 - ISSUE : 4

Symbol	Characteristic	Conditions	Tj °C	Value			Unit
				min	typ	max	
<b>BLOCKING</b>							
V <sub>DRM</sub>	Repetitive peak off-state voltage					4500	V
V <sub>RRM</sub>	Repetitive peak reverse voltage					16	V
I <sub>DRM</sub>	Repetitive peak off-state current	V <sub>D</sub> =V <sub>DRM</sub> R <sub>GK</sub> <2 ohm	125			100	mA
I <sub>RRM</sub>	Repetitive peak reverse current	V <sub>R</sub> =V <sub>RRM</sub>				10	mA
(dv/dt) <sub>crit</sub>	Critical rate of rise of off-state voltage, min	Linear ramp up to 50% V <sub>DRM</sub> , shorted G-K				1000	V/uS
<b>CONDUCTING</b>							
I <sub>T(AV)</sub>	Mean on-state current	180° sin, 50 Hz, Th=75°C, double side cooled				760	A
I <sub>TSM</sub>	Surge on-state current	sine wave, 10 ms, no reverse voltage	125			17	kA
I <sup>2</sup> t	I <sup>2</sup> t for fusing coordination	10ms, no reverse voltage				1445	A <sup>2</sup> s10 <sup>3</sup>
V <sub>T</sub>	On-state voltage	On-state current = 2500 A	25			3,8	V
V <sub>T(TO)</sub>	Threshold voltage		125			1,98	V
r <sub>T</sub>	On-state slope resistance					0,73	mohm
<b>SWITCHING ON</b>							
t <sub>gt</sub>	Gate controlled turn on time	I <sub>T</sub> = 2500A; di/dt = 350A/uS				10	uS
t <sub>d</sub>	Delay time	I <sub>GM</sub> > 50A; di <sub>GR</sub> /dt = 25A/uS	125			3	uS
E <sub>on</sub>	Turn-on switching energy	V <sub>D</sub> = 2500V, C <sub>S</sub> = 4uF; R <sub>S</sub> = 5 ohm			2,8		J
(di/dt) <sub>crit</sub>	Critical rate of rise of on-state current	I <sub>T</sub> = 3000A, I <sub>GM</sub> = 50A, di <sub>GR</sub> /dt = 25A/uS	125			400	A/uS
<b>SWITCHING OFF</b>							
I <sub>TCM</sub>	Controllable peak on-state current					3000	A
t <sub>gq</sub>	Gate controlled turn-off time	I <sub>TC</sub> = I <sub>TCM</sub> ; V <sub>DM</sub> = 3500V				30	uS
t <sub>s</sub>	Storage time	C <sub>S</sub> = 4uF; di <sub>GR</sub> /dt = 40 A/uS	125			28	uS
E <sub>off</sub>	Turn-off switching energy	L <sub>s</sub> = 0.28uH			8,5		J
I <sub>RG</sub>	Turn-off reverse gate current					750	A
V <sub>DSP</sub>	Spike voltage					950	V
<b>TRIGGERING</b>							
V <sub>GT</sub>	Gate trigger voltage	V <sub>D</sub> =24V	25			1,5	V
I <sub>GT</sub>	Gate trigger current		25			3,0	A
V <sub>RGM</sub>	Peak reverse gate voltage		25			16	V
I <sub>RGM</sub>	Peak reverse leakage gate current	V <sub>RG</sub> = V <sub>RGM</sub>	125			10	mA
<b>DISSIPATION</b>							
R <sub>th(j-h)</sub>	Thermal resistance junction to heatsink d.c.	Double side cooled				16	°C/kW
T <sub>vj</sub>	Virtual junction temperature					125	°C
T <sub>stg</sub>	Storage temperature			-40		150	°C
<b>MOUNTING</b>							
W	Weight					1300	g
F	Mounting force			31.0	/	35.0	kN

ORDERING INFORMATION : ATG778 S 45

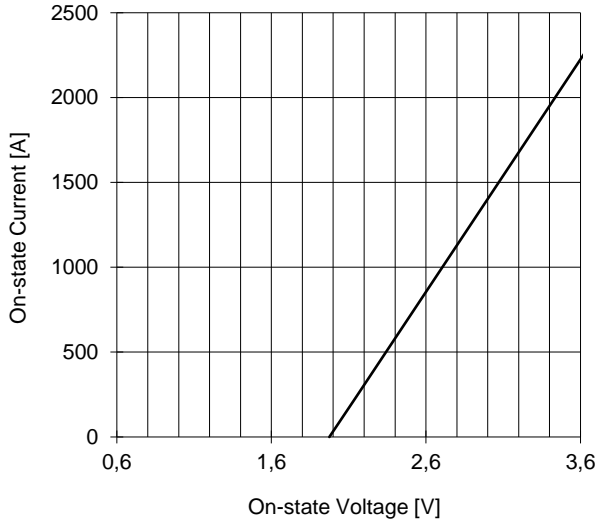
standard specification   VDRM/100

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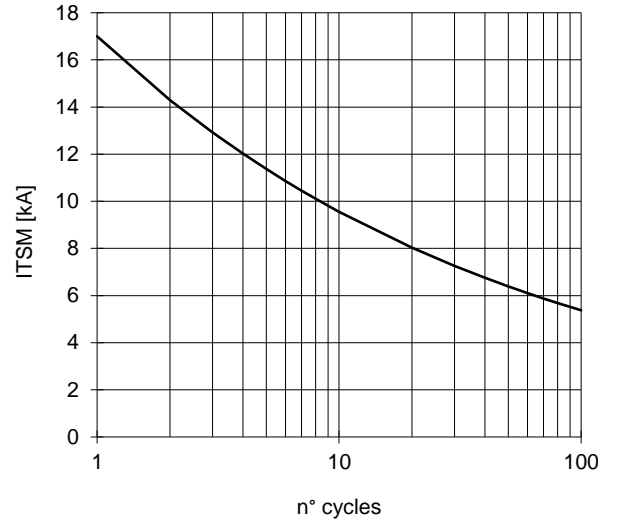


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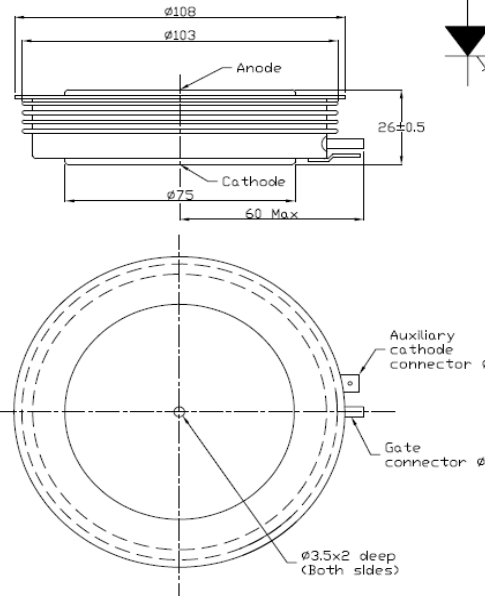
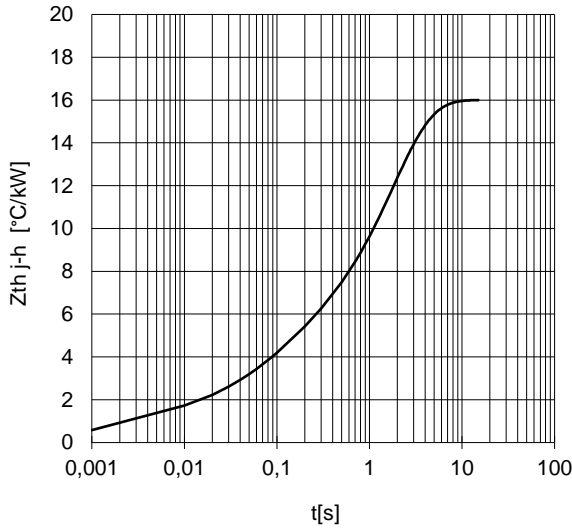
ON-STATE CHARACTERISTIC  
T<sub>j</sub> = 125 °C



SURGE CHARACTERISTIC  
T<sub>j</sub> = 125 °C



TRANSIENT THERMAL IMPEDANCE  
DOUBLE SIDE COOLED



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 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.

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