

**FAST RECOVERY DIODE
INSULATED MODULE**

AFF450A

Repetitive voltage up to **4500 V**
Mean on-state current **448 A**
Surge current **10 kA**

- *Full ermetic packaging
- *Industrial compatible packaging
- *Insulation using Aln substrate
- *6KVrms insulation voltage available on request
- *Contact screws available on request

FINAL SPECIFICATION

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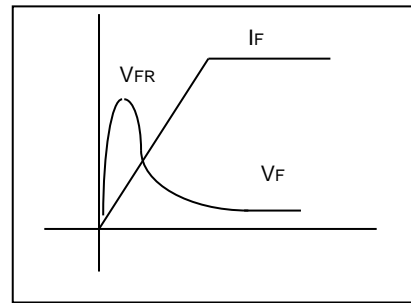
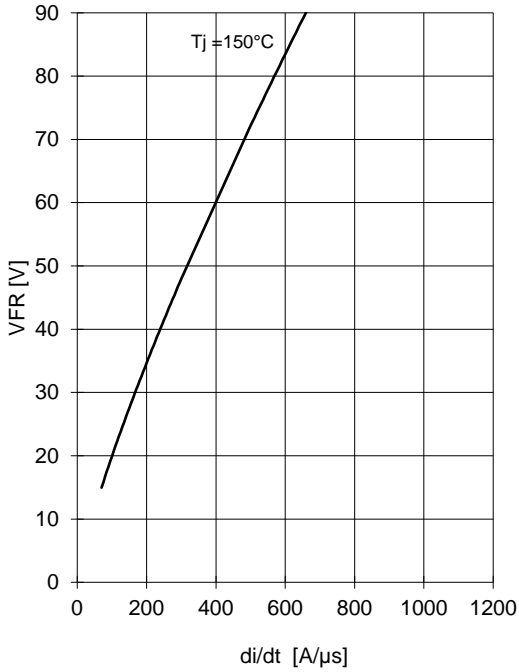
Symbol	Characteristic	Conditions	T _j [°C]	Value	Unit
BLOCKING					
V _{RRM}	Repetitive peak reverse voltage		150	4500	V
V _{RSM}	Non-repetitive peak reverse voltage		150	4600	V
I _{RRM}	Repetitive peak reverse current		150	50	mA
CONDUCTING					
I _{F(AV)}	Mean on-state current	180° sin, 50Hz, T _c =100°C		448,5	A
I _{F(AV)}	Mean on-state current	180° sin. 50Hz, T _c =55°C		703,3	A
I _{FSM}	Surge on-state current	sine wave, 10 ms	150	10,0	kA
I ² t	I ² t	without reverse voltage		500 x1E3	A ² s
V _F	On-state voltage	On-state current = 1500 A	150	2,525	V
V _{F(TO)}	Threshold voltage		150	1,40	V
r _F	On-state slope resistance		150	0,750	mohm
Q _{rr}	Reverse recovery charge	I _F = 1000 A	150	1600	μC
I _{rr}	Peak reverse recovery current	di/dt= 150 A/μs	150	500	A
t _{rr}	Reverse recovery time	V _R = 100 V	150	6,4	μs
V _{FR}	Peak forward recovery	di/dt= 400 A/μs	150	60	μs
MOUNTING					
R _{th(j-c)}	Thermal impedance	Junction to case, per element		50	°C/kW
R _{th(c-h)}	Thermal impedance	Case to heatsink, per element		20	°C/kW
T _j	Operating junction temperature			-30 / 150	°C
V _{ins}	RMS insulation voltage	50Hz, circuit to base, all terminal shorted	25	4500	V
T	Mounting torque	Case to heatsink		4 to 6	Nm
		Busbars to terminals		12 to 18	Nm
	Mass			1500	g

ORDERING INFORMATION : AFF450A S 45
standard specification ———┐└── VRRM/100

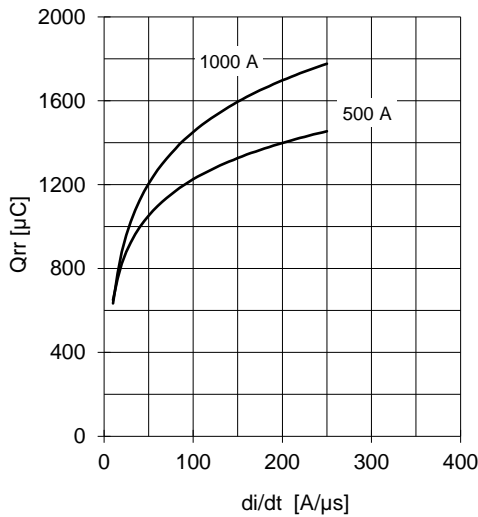
(*) 6000V available on request.
Add HVI to the desired code in
phase of order, i.e. AFF230HVIS26

SWITCHING CHARACTERISTICS

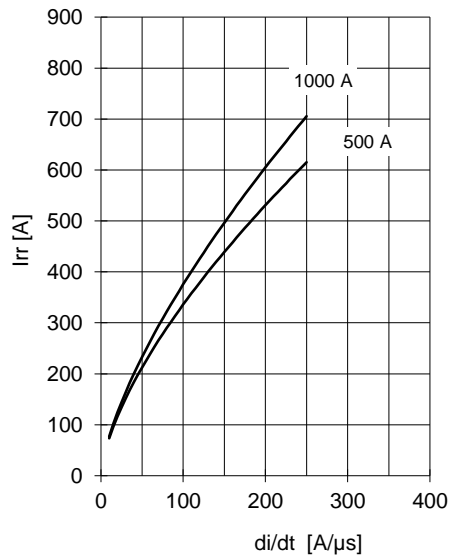
FORWARD RECOVERY VOLTAGE



REVERSE RECOVERY CHARGE
Tj = 150 °C



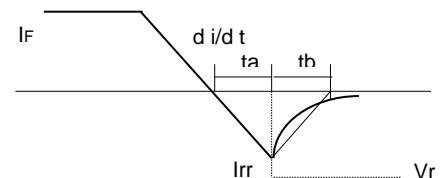
REVERSE RECOVERY CURRENT
Tj = 150 °C



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

Softness (s factor) $s = t_b / t_a$

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

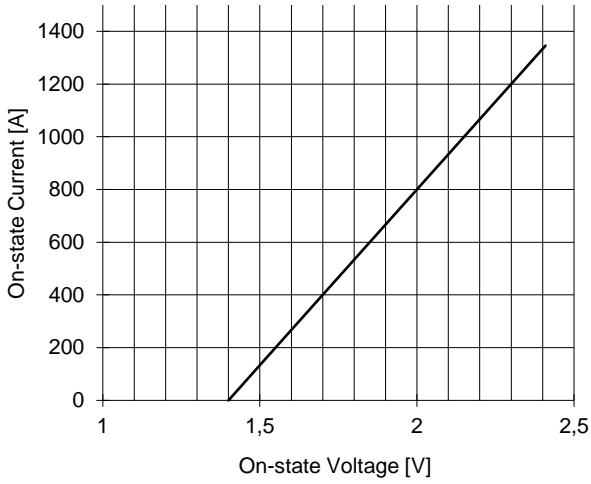


AFF450A FAST RECOVERY DIODE

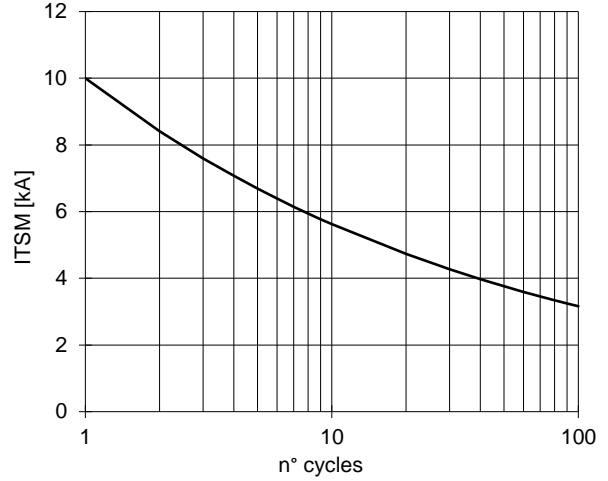


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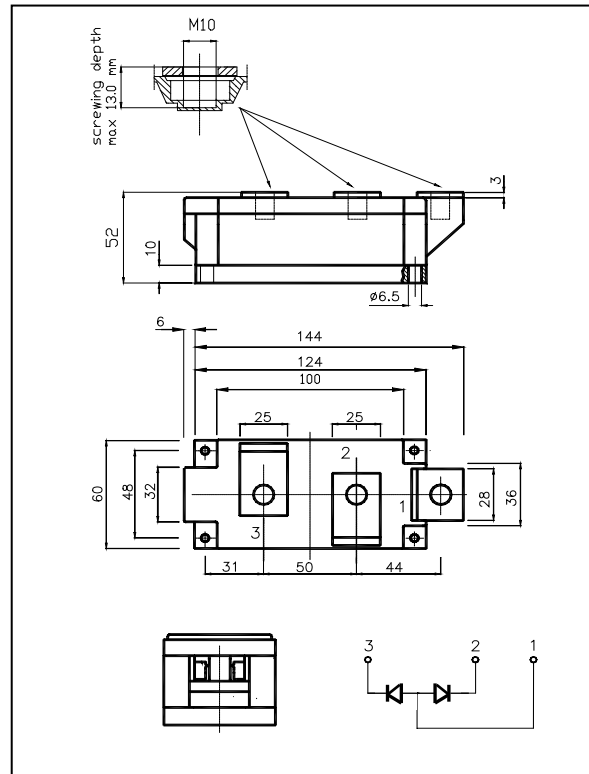
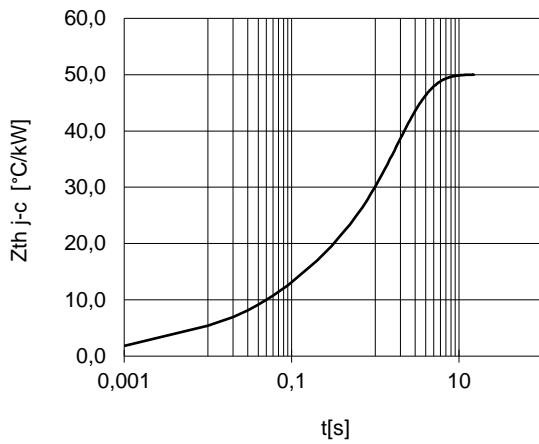
ON-STATE CHARACTERISTIC
T_j = 150 °C



SURGE CHARACTERISTIC
T_j = 150 °C



TRANSIENT THERMAL IMPEDANCE



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.

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