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FAST RECOVERY DIODE INSULATED MODULE

AFF450KHVI

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

Repetitive voltage up to	**4500 V**
Mean on-state current	**450 A**
Surge current	**10 kA**

FINAL SPECIFICATION

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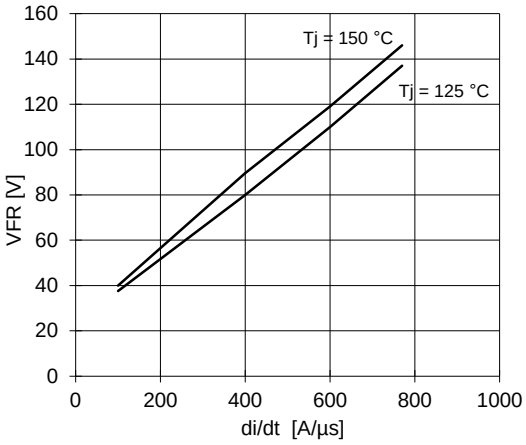
Symbol	Characteristic	Conditions	Tj [°C]	Value	Unit
BLOCKING					
V_{RRM}	Repetitive peak reverse voltage		150	4500	V
V_{RSM}	Non-repetitive peak reverse voltage		150	4600	V
I_{RRM}	Repetitive peak reverse current		150	50	mA
CONDUCTING					
$I_{F(AV)}$	Mean on-state current	180° sin, 50Hz, Tc=80°C		450	A
$I_{F(AV)}$	Mean on-state current	180° sin. 50Hz, Tc=55°C		560	A
I_{FSM}	Surge on-state current	sine wave, 10 ms	150	10	kA
I^2t	I^2t	without reverse voltage		500 x1E3	A^2s
V_F	On-state voltage	On-state curren 1500 A	150	2,525	V
$V_{F(TO)}$	Threshold voltage		150	1,40	V
r_F	On-state slope resistance		150	0,75	mohm
SWITCHING					
t_{rr}	Reverse recovery time	I F = 1000 A	150	6,4	µs
Q_{rr}	Reverse recovery charge	di/dt= 150 A/µs		1600	µC
I_{rr}	Peak reverse recovery current	VR = 100 V		500	A
s	Softness (s-factor), min				
E_{OFF}	Turn off energy dissipation				J
V_{FR}	Peak forward recovery (Typical Value)	di/dt= 400 A/µs	150	90	V
MOUNTING					
$R_{th(j-c)}$	Thermal impedance	Junction to case, per element		70	°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, t=1min	25	6000	V
T	Mounting tourque	Case to heatsink		4 to 6	Nm
		Busbars to terminals		12 to 18	Nm
	Mass			1500	g

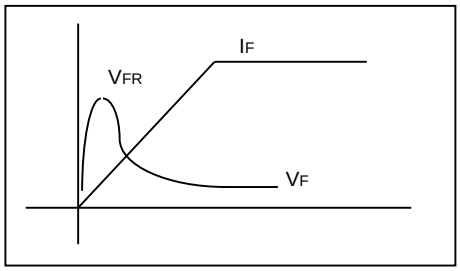
ORDERING INFORMATION : AFF450KHVI S 45

standard specification — VRRM/100

SWITCHING CHARACTERISTICS

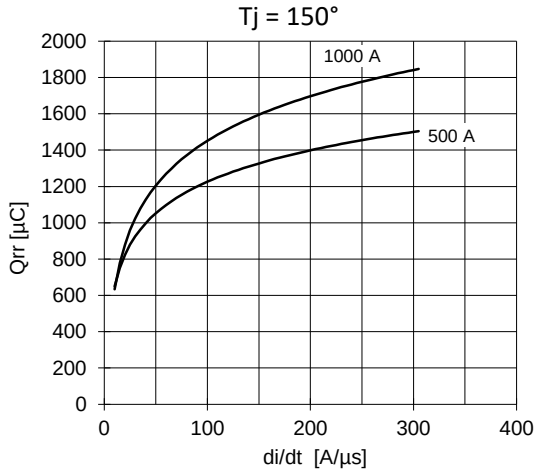
FORWARD RECOVERY VOLTAGE





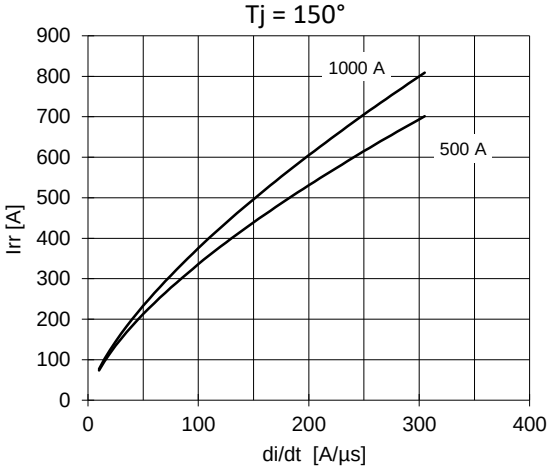
REVERSE RECOVERY CHARGE

Tj = 150°



REVERSE RECOVERY CURRENT

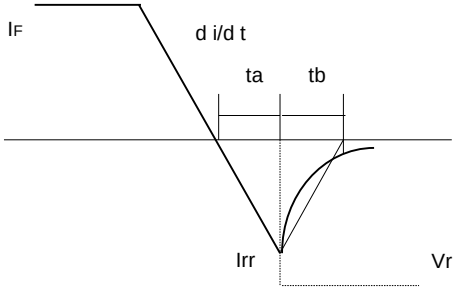
Tj = 150°



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

Softness (s factor) s = tb / ta

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



AFF450KHVI

POSEICO POWER ELECTRONICS

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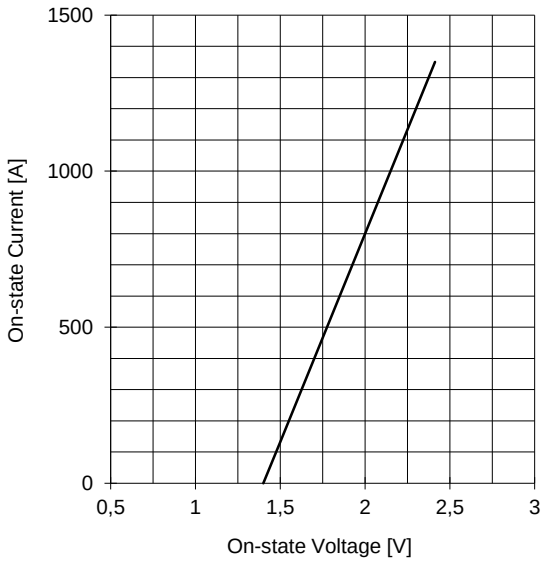
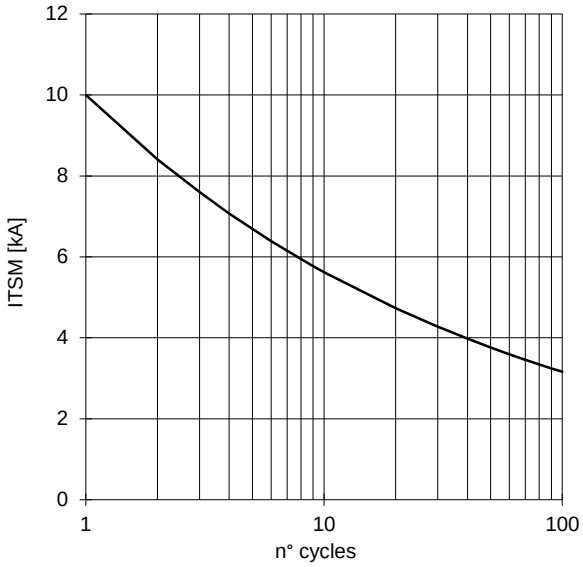
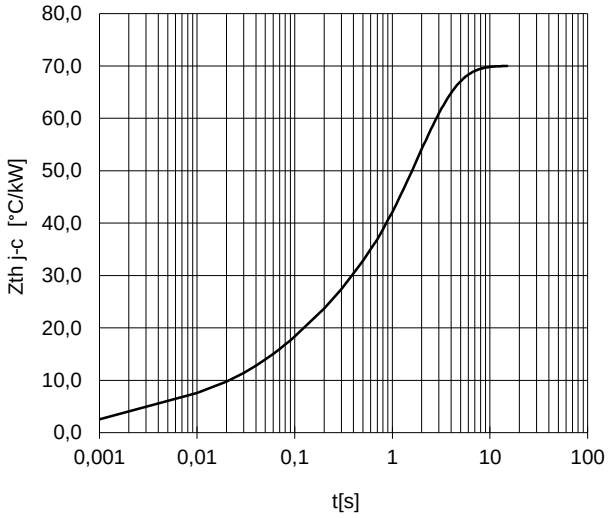
ON-STATE CHARACTERISTIC
Tj = 150 °C

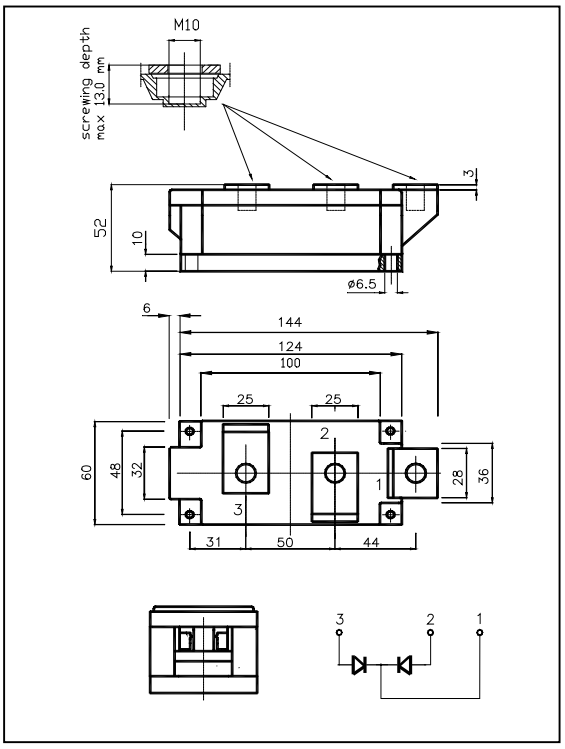


SURGE CHARACTERISTIC
Tj = 150 °C



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 (simbols over shaded background) and characteristics is reported.

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