Standard Rectifier Module

3~ Rectifier		
V_{RRM} =	1600	V
I_{DAV} =	105	A
I_{FSM} =	750	A

3~ Rectifier Bridge

Part number

VUO98-16NO7

A1 E1 G1 K10 L9 P18 S18

🆄 E72873

PS18
D1 D3 D5
A1
L9
K10
D2 D4 D6
EG1
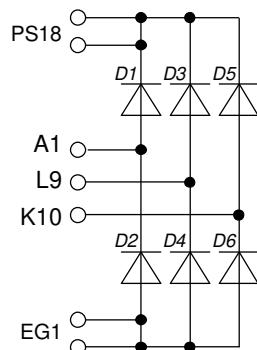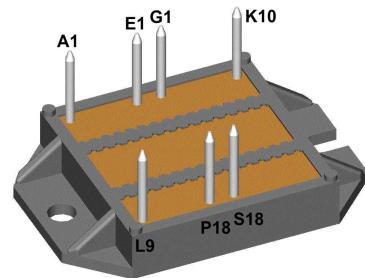
Features / Advantages:

- Package with DCB ceramic
- Improved temperature and power cycling
- Planar passivated chips
- Very low forward voltage drop
- Very low leakage current

Applications:

- Diode for main rectification
- For three phase bridge configurations
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

Package: ECO-PAC2

- Isolation Voltage: 3000 V~
- Industry standard outline
- RoHS compliant
- Soldering pins for PCB mounting
- Height: 9 mm
- Base plate: DCB ceramic
- Reduced weight
- Advanced power cycling

Disclaimer Notice

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Rectifier

Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage		$T_{VJ} = 25°C$			1700	V
V_{RRM}	max. repetitive reverse blocking voltage		$T_{VJ} = 25°C$			1600	V
I_R	reverse current	$V_R = 1600$ V	$T_{VJ} = 25°C$			100	µA
		$V_R = 1600$ V	$T_{VJ} = 150°C$			1.5	mA
V_F	forward voltage drop	$I_F = 40$ A	$T_{VJ} = 25°C$			1.14	V
		$I_F = 120$ A				1.48	V
		$I_F = 40$ A	$T_{VJ} = 125°C$			1.06	V
		$I_F = 120$ A				1.51	V
I_{DAV}	bridge output current	$T_C = 115°C$	$T_{VJ} = 150°C$			105	A
		rectangular d = ⅓					
V_{F0}	threshold voltage	} for power loss calculation only	$T_{VJ} = 150°C$			0.81	V
r_F	slope resistance					5.9	mΩ
R_{thJC}	thermal resistance junction to case					0.7	K/W
R_{thCH}	thermal resistance case to heatsink				0.3		K/W
P_{tot}	total power dissipation		$T_C = 25°C$			175	W
I_{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine	$T_{VJ} = 45°C$			750	A
		t = 8,3 ms; (60 Hz), sine	$V_R = 0$ V			810	A
		t = 10 ms; (50 Hz), sine	$T_{VJ} = 150°C$			640	A
		t = 8,3 ms; (60 Hz), sine	$V_R = 0$ V			690	A
I^2t	value for fusing	t = 10 ms; (50 Hz), sine	$T_{VJ} = 45°C$			2.82	kA²s
		t = 8,3 ms; (60 Hz), sine	$V_R = 0$ V			2.73	kA²s
		t = 10 ms; (50 Hz), sine	$T_{VJ} = 150°C$			2.05	kA²s
		t = 8,3 ms; (60 Hz), sine	$V_R = 0$ V			1.98	kA²s
C_J	junction capacitance	$V_R = 400$ V; f = 1 MHz	$T_{VJ} = 25°C$		11		pF

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Package	ECO-PAC2		Ratings			
Symbol	**Definition**	**Conditions**	**min.**	**typ.**	**max.**	**Unit**
I_{RMS}	RMS current	per terminal			100	A
T_{VJ}	virtual junction temperature		-40		150	°C
T_{op}	operation temperature		-40		125	°C
T_{stg}	storage temperature		-40		125	°C
Weight				24		g
M_D	mounting torque		1.4		2	Nm
$d_{Spp/App}$	creepage distance on surface | striking distance through air	terminal to terminal	6.0			mm
$d_{Spb/Apb}$		terminal to backside	10.0			mm
V_{ISOL}	isolation voltage	t = 1 second	3000			V
		t = 1 minute 50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA	2500			V

Logo   Lot#

□IXYS   123456   Circuit Diagram
yywwZ
XXX XX-XXXXX

Date Code/Location   Part Number
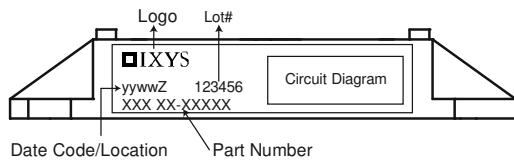
Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	VUO98-16NO7	VUO98-16NO7	Box	25	494526

Equivalent Circuits for Simulation   *on die level* $T_{VJ} = 150°C$

I → V_0 → R_0 **Rectifier**
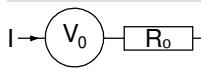
$V_{0\,max}$	threshold voltage	0.81	V
$R_{0\,max}$	slope resistance *	4.6	mΩ

**Outlines   ECO-PAC2**

Rectifier

Fig. 1 Forward current versus voltage drop per diode


Fig. 2 Surge overload current


Fig. 3 I^2t versus time per diode

Fig. 4 Power dissipation vs. direct output current & ambient temperature

Fig. 5 Max. forward current vs. case temperature

Fig. 6 Transient thermal impedance junction to case
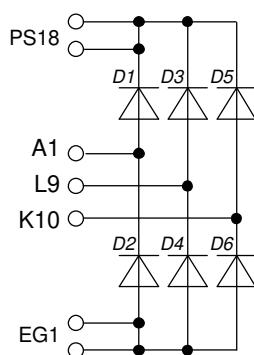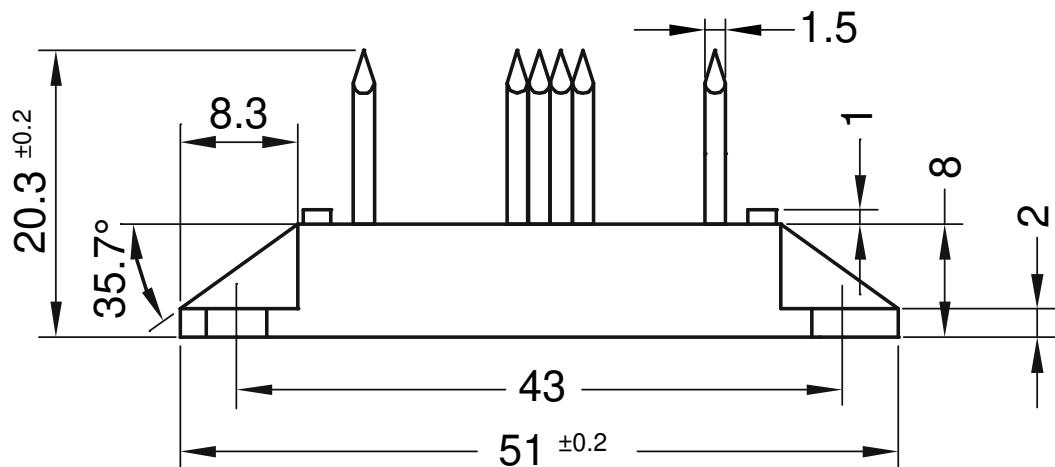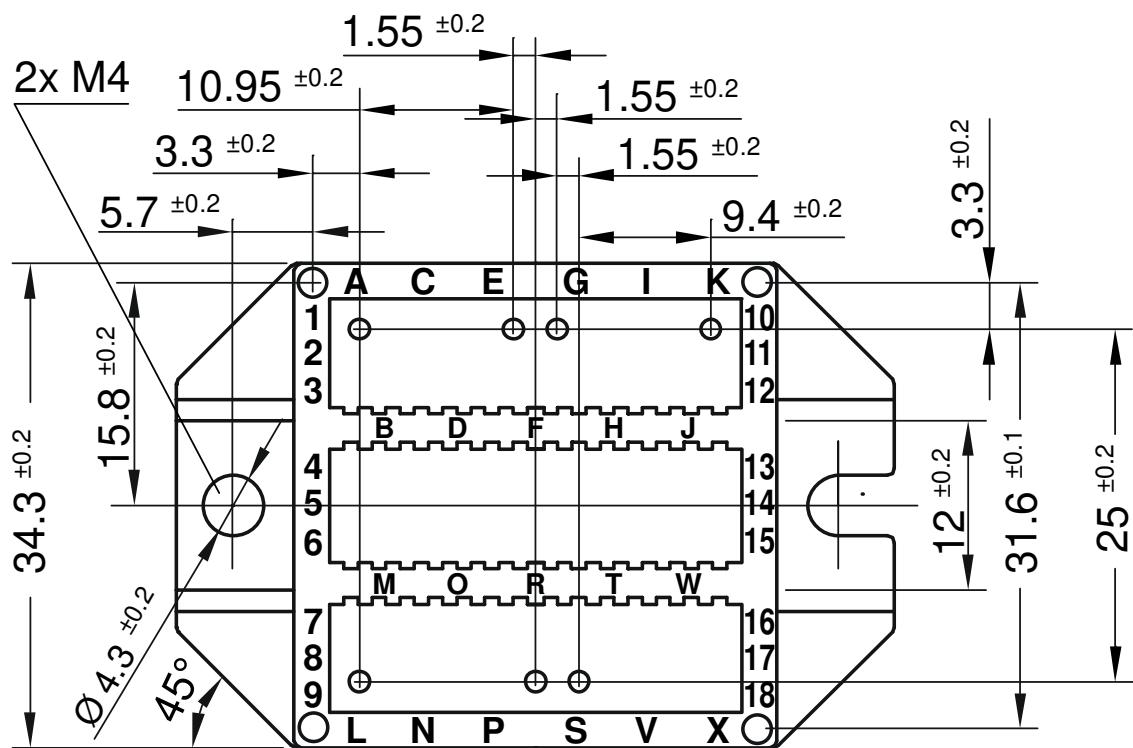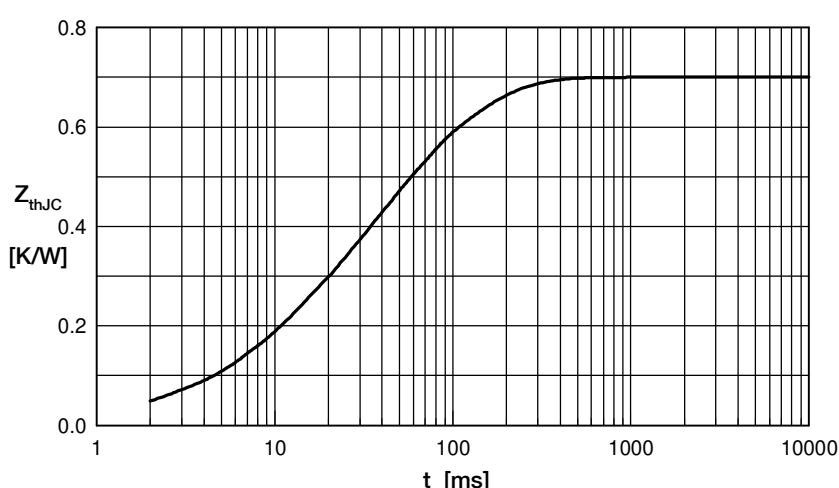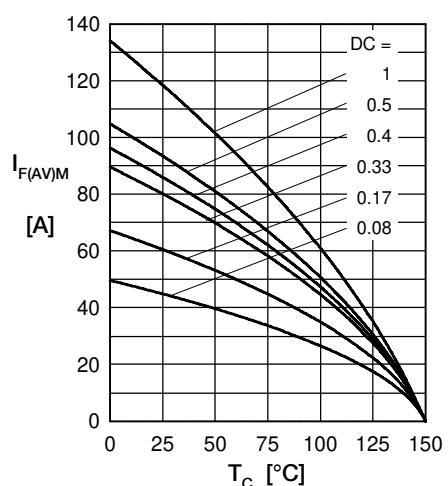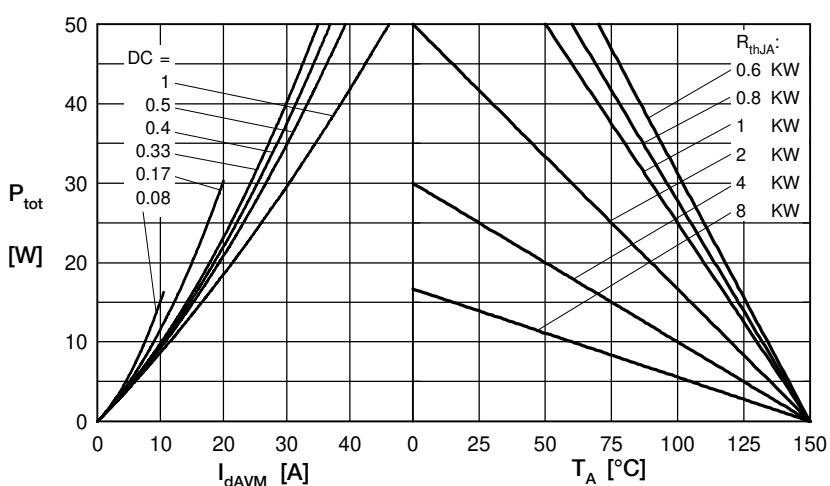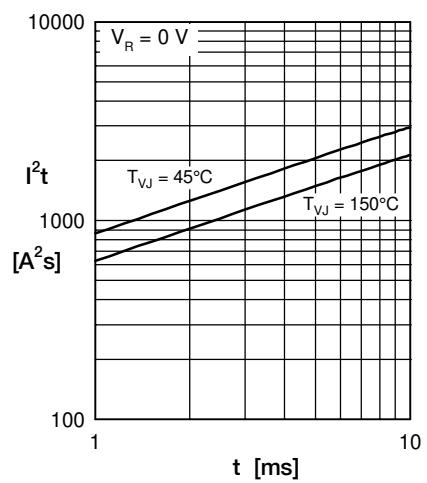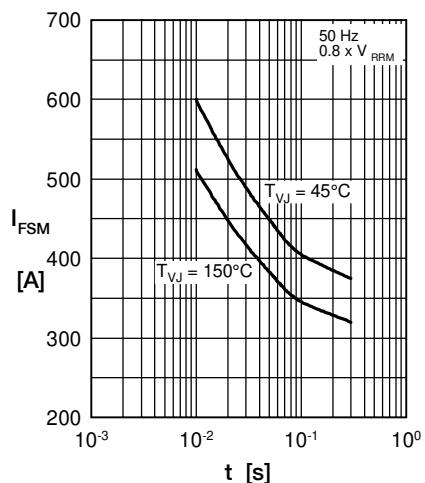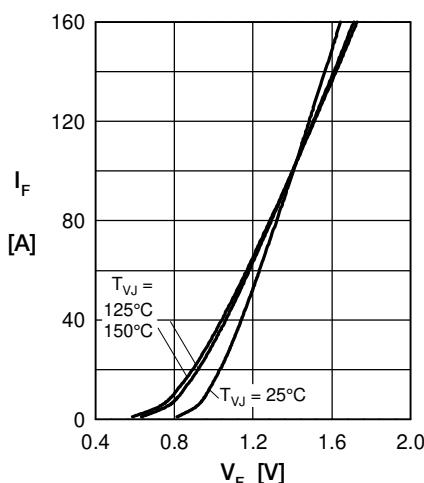
Constants for Z_{thJC} calculation:

i	R_{th} (K/W)	t_i (s)
1	0.09	0.012
2	0.05	0.007
3	0.32	0.036
4	0.24	0.102

IXYS reserves the right to change limits, conditions and dimensions.   Data according to IEC 60747and per semiconductor unless otherwise specified   20191220b