Standard Rectifier Module

3~ Rectifier		
V_{RRM}	=	1400 V
I_{DAV}	=	125 A
I_{FSM}	=	1000 A

3~ Rectifier Bridge

Part number

VUO122-14NO7

A1   E1   G1   K10   L9   P18   S18

U E72873

EG 1   ~K10   ~L9   ~A1   PS 18
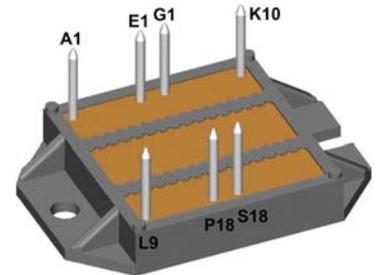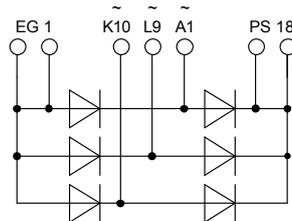
Features / Advantages:

- 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

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

Rectifier

Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage		T_{VJ} = 25°C			1500	V
V_{RRM}	max. repetitive reverse blocking voltage		T_{VJ} = 25°C			1400	V
I_R	reverse current	V_R = 1400 V	T_{VJ} = 25°C			100	µA
		V_R = 1400 V	T_{VJ} = 150°C			2	mA
V_F	forward voltage drop	I_F = 50 A	T_{VJ} = 25°C			1.13	V
		I_F = 150 A				1.47	V
		I_F = 50 A	T_{VJ} = 125 °C			1.05	V
		I_F = 150 A				1.49	V
I_{DAV}	bridge output current	T_C = 115°C	T_{VJ} = 150°C			125	A
		rectangular d = ⅓					
V_{F0}	threshold voltage ⎫ for power loss calculation only		T_{VJ} = 150°C			0.80	V
r_F	slope resistance ⎭					4.6	mΩ
R_{thJC}	thermal resistance junction to case					0.6	K/W
R_{thCH}	thermal resistance case to heatsink				0.3		K/W
P_{tot}	total power dissipation		T_C = 25°C			205	W
I_{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine	T_{VJ} = 45°C			1.00	kA
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			1.08	kA
		t = 10 ms; (50 Hz), sine	T_{VJ} = 150°C			850	A
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			920	A
I^2t	value for fusing	t = 10 ms; (50 Hz), sine	T_{VJ} = 45°C			5.00	kA²s
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			4.85	kA²s
		t = 10 ms; (50 Hz), sine	T_{VJ} = 150°C			3.62	kA²s
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			3.52	kA²s
C_J	junction capacitance	V_R = 400 V; f = 1 MHz	T_{VJ} = 25°C		35		pF

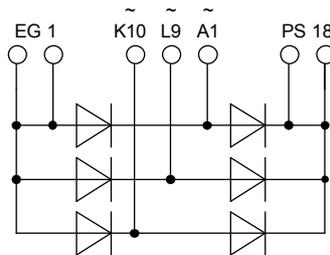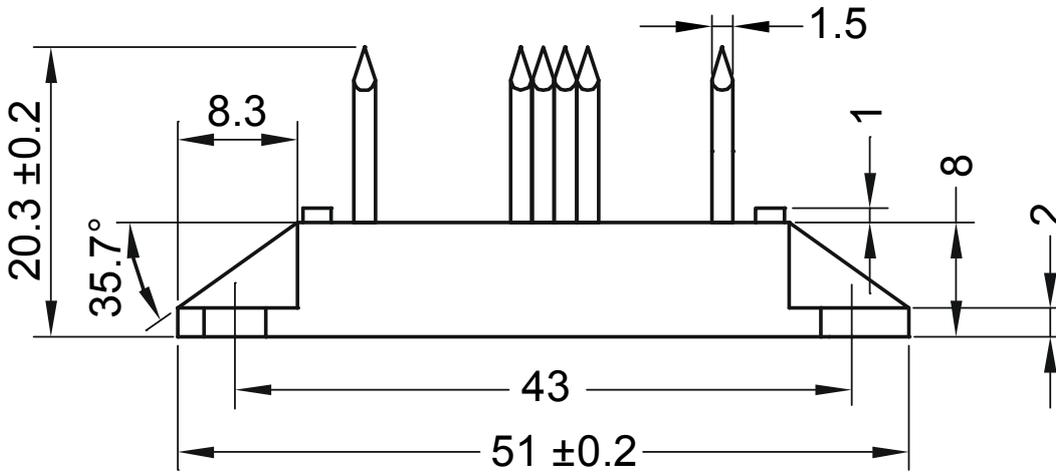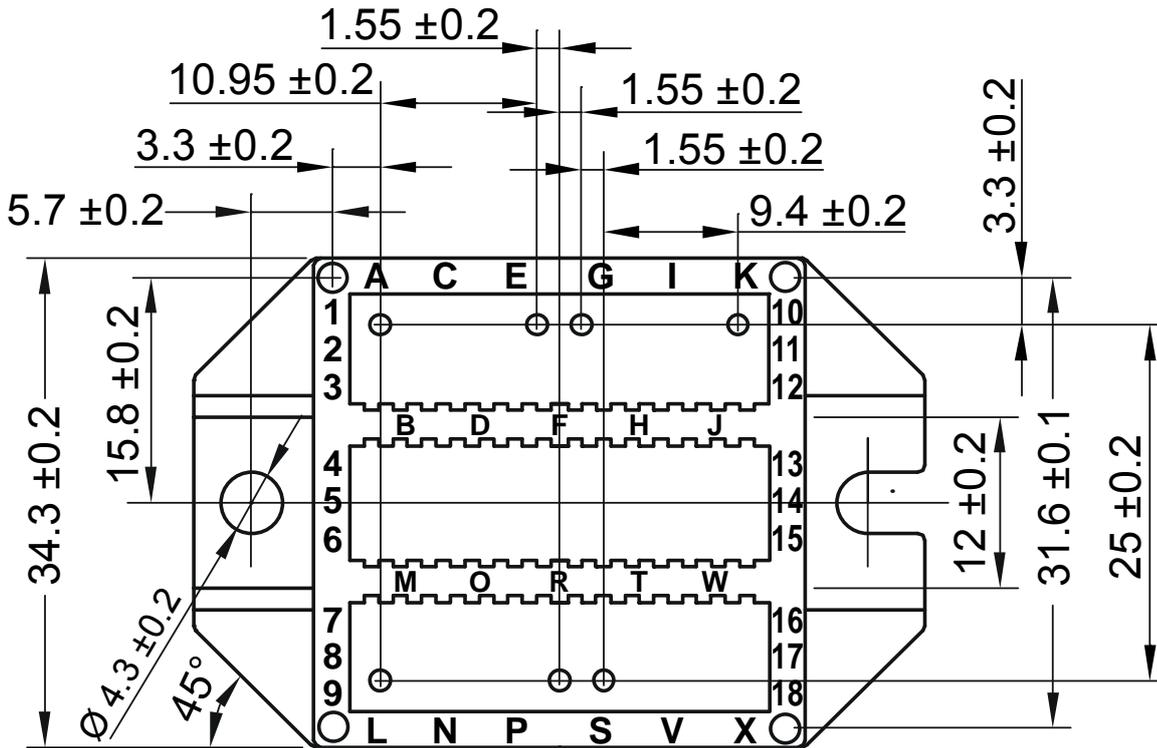| Package	ECO-PAC2		Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal			100	A
T_{stg}	storage temperature		-40		125	°C
T_{VJ}	virtual junction temperature		-40		150	°C
Weight				24		g
M_D	mounting torque		1.5		2	Nm
$d_{Spp/App}$	creepage distance on surface | 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
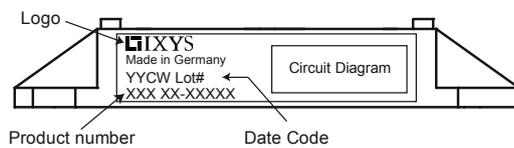
Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	VUO122-14NO7	VUO122-14NO7	Box	25	494445

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

Rectifier

$V_{0\,max}$	threshold voltage	0.8	V
$R_{0\,max}$	slope resistance *	3.4	mΩ

IXYS reserves the right to change limits, conditions and dimensions.   Data according to IEC 60747 and per semiconductor unless otherwise specified   20130327a

IXYS

VUO122-14NO7

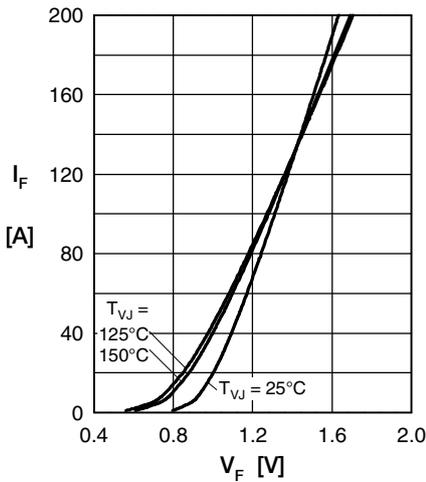**Outlines   ECO-PAC2**

Rectifier

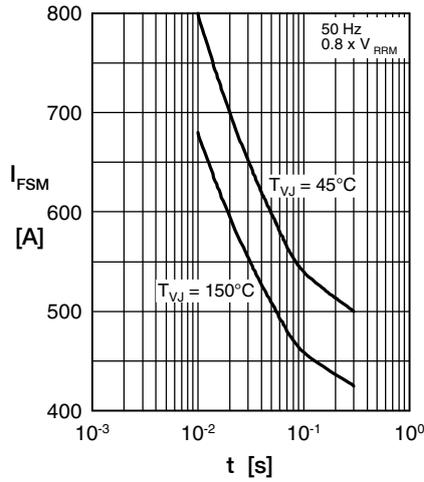Fig. 1 Forward current vs. voltage drop per diode

Fig. 2 Surge overload current vs. time per diode
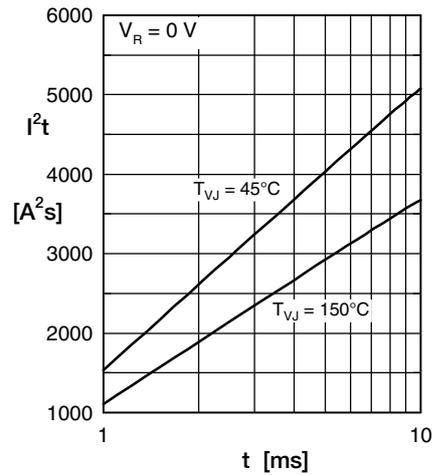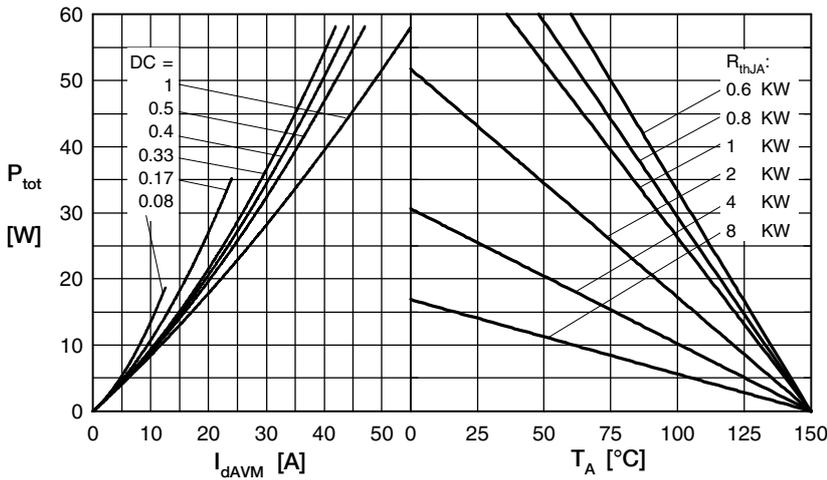

Fig. 3 I^2t vs. time per diode

Fig. 4 Power dissipation vs. forward current and ambient temperature per diode
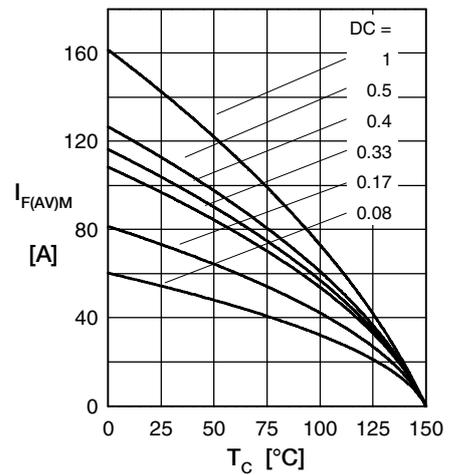

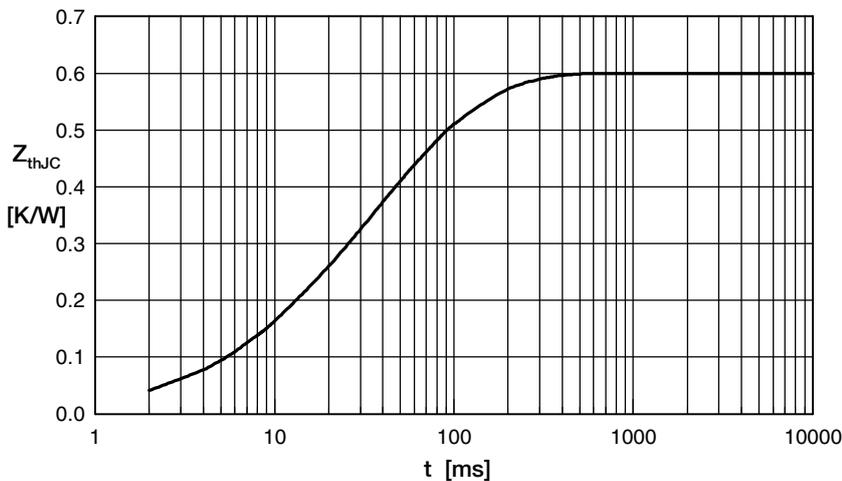Fig. 5 Max. forward current vs. case temperature per diode

Fig. 6 Transient thermal impedance junction to case vs. time per diode

Constants for Z_{thJC} calculation:

i	R_{th} (K/W)	t_i (s)
1	0.08	0.012
2	0.04	0.007
3	0.29	0.036
4	0.19	0.102