

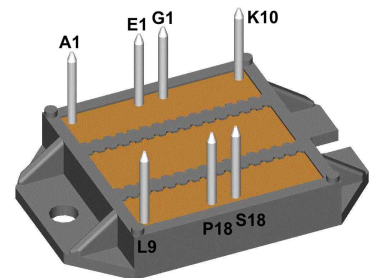
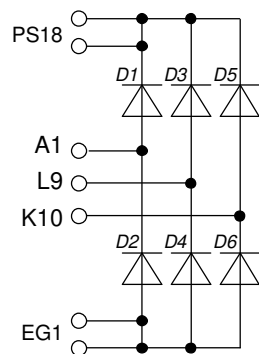
Phase out

# Standard Rectifier Module

# PHASE OUT

<b>3~ Rectifier</b>	
$V_{RRM}$	= 1400 V
$I_{DAV}$	= 125 A
$I_{FSM}$	= 1000 A

3~ Rectifier Bridge

**Part number**
**VUO122-14NO7**


**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

**Recommended replacement: VUO122-16NO7**

**Terms and Conditions of Usage**

The data contained in this product data sheet is exclusively intended for technically trained staff. The user will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to his application. The specifications of our components may not be considered as an assurance of component characteristics. The information in the valid application- and assembly notes must be considered. Should you require product information in excess of the data given in this product data sheet or which concerns the specific application of your product, please contact your local sales office.

Due to technical requirements our product may contain dangerous substances. For information on the types in question please contact your local sales office.

Should you intend to use the product in aviation, in health or life endangering or life support applications, please notify. For any such application we urgently recommend

- to perform joint risk and quality assessments;

- the conclusion of quality agreements;

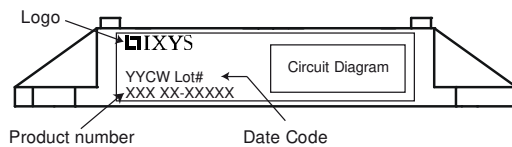
- to establish joint measures of an ongoing product survey, and that we may make delivery dependent on the realization of any such measures.

Rectifier				Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit	
$V_{RSM}$	max. non-repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$			1500	V	
$V_{RRM}$	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$			1400	V	
$I_R$	reverse current	$V_R = 1400\text{ V}$	$T_{VJ} = 25^{\circ}\text{C}$		100	$\mu\text{A}$	
		$V_R = 1400\text{ V}$	$T_{VJ} = 150^{\circ}\text{C}$		2	mA	
$V_F$	forward voltage drop	$I_F = 50\text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$		1.13	V	
		$I_F = 150\text{ A}$			1.47	V	
		$I_F = 50\text{ A}$	$T_{VJ} = 125^{\circ}\text{C}$		1.05	V	
		$I_F = 150\text{ A}$			1.49	V	
$I_{DAV}$	bridge output current	$T_C = 115^{\circ}\text{C}$ rectangular $d = \frac{1}{3}$	$T_{VJ} = 150^{\circ}\text{C}$		125	A	
$V_{FO}$	threshold voltage	} for power loss calculation only	$T_{VJ} = 150^{\circ}\text{C}$		0.80	V	
$r_F$	slope resistance				4.6	m $\Omega$	
$R_{thJC}$	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		$T_C = 25^{\circ}\text{C}$		205	W	
$I_{FSM}$	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}$	$T_{VJ} = 45^{\circ}\text{C}$		1.00	kA	
		$t = 8,3\text{ ms}; (60\text{ Hz}), \text{ sine}$	$V_R = 0\text{ V}$		1.08	kA	
		$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}$	$T_{VJ} = 150^{\circ}\text{C}$		850	A	
		$t = 8,3\text{ ms}; (60\text{ Hz}), \text{ sine}$	$V_R = 0\text{ V}$		920	A	
$I^2t$	value for fusing	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}$	$T_{VJ} = 45^{\circ}\text{C}$		5.00	kA <sup>2</sup> s	
		$t = 8,3\text{ ms}; (60\text{ Hz}), \text{ sine}$	$V_R = 0\text{ V}$		4.85	kA <sup>2</sup> s	
		$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}$	$T_{VJ} = 150^{\circ}\text{C}$		3.62	kA <sup>2</sup> s	
		$t = 8,3\text{ ms}; (60\text{ Hz}), \text{ sine}$	$V_R = 0\text{ V}$		3.52	kA <sup>2</sup> s	
$C_J$	junction capacitance	$V_R = 400\text{ V}; f = 1\text{ MHz}$	$T_{VJ} = 25^{\circ}\text{C}$		35	pF	

# PHASE OUT

Phase out

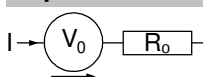
Package ECO-PAC2		Ratings				
Symbol	Definition	Conditions	min.	typ.	max.	Unit
$I_{RMS}$	RMS current	per terminal			100	A
$T_{VJ}$	virtual junction temperature		-40		150	°C
$T_{op}$	operation temperature		-40		125	°C
$T_{stg}$	storage temperature		-40		125	°C
<b>Weight</b>				24		g
$M_D$	mounting torque		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	2500			V



Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	VUO122-14NO7	VUO122-14NO7	Box	25	494445

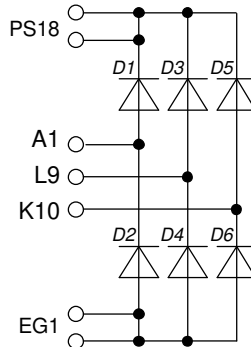
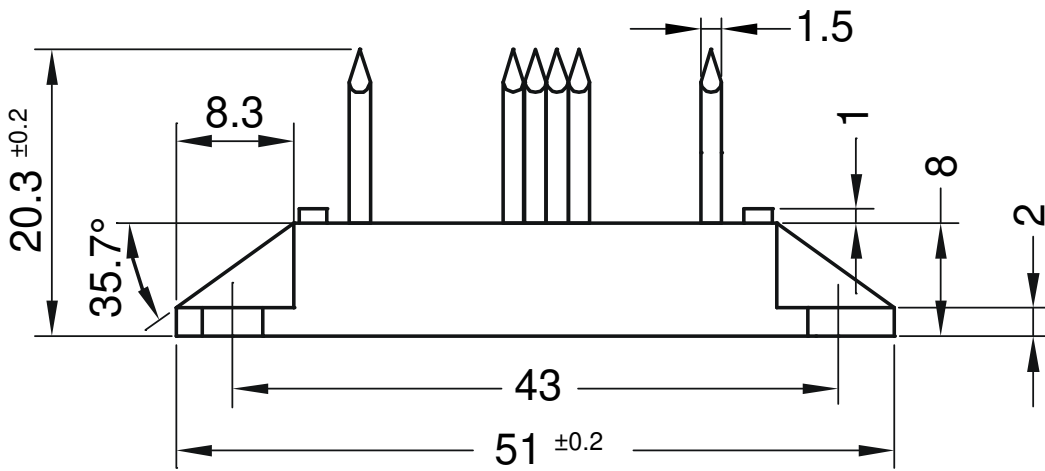
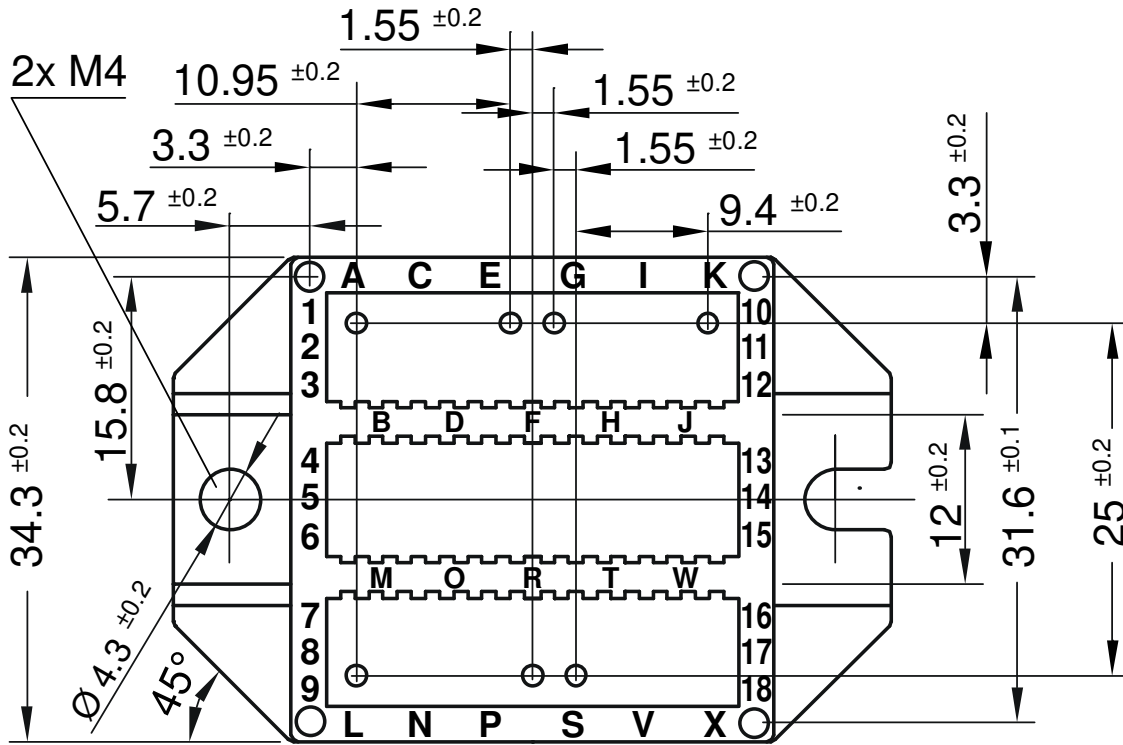
**Equivalent Circuits for Simulation**

\* on die level

 $T_{VJ} = 150\text{ °C}$ 

**Rectifier**

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

Outlines ECO-PAC2



## Rectifier

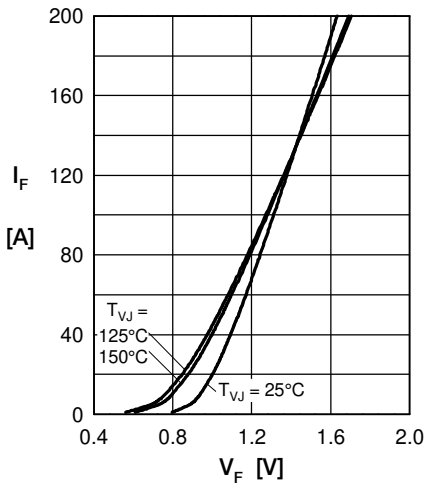


Fig. 1 Forward current vs. voltage drop per diode

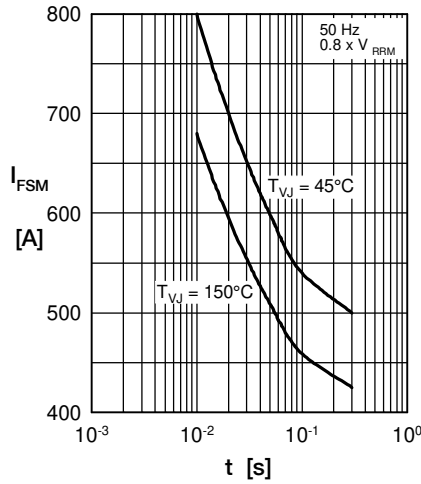


Fig. 2 Surge overload current vs. time per diode

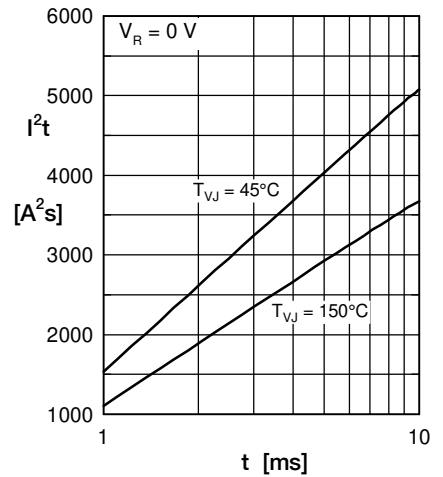


Fig. 3  $I^2t$  vs. time per diode

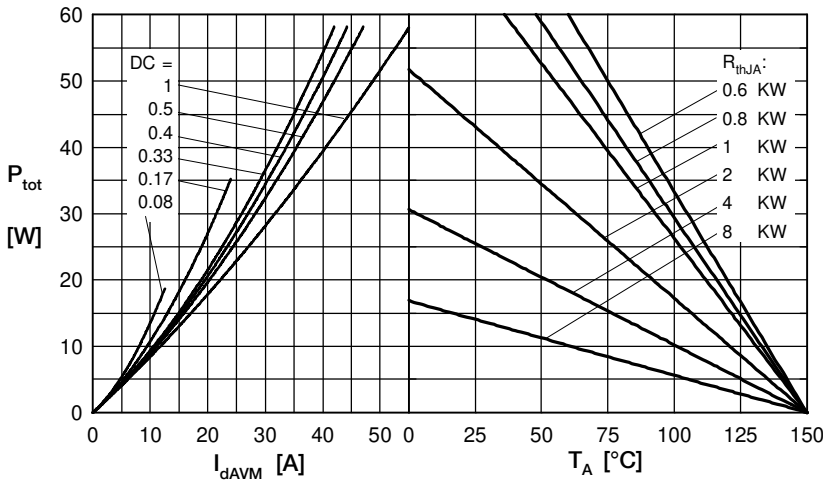


Fig. 4 Power dissipation vs. forward current and ambient temperature per diode

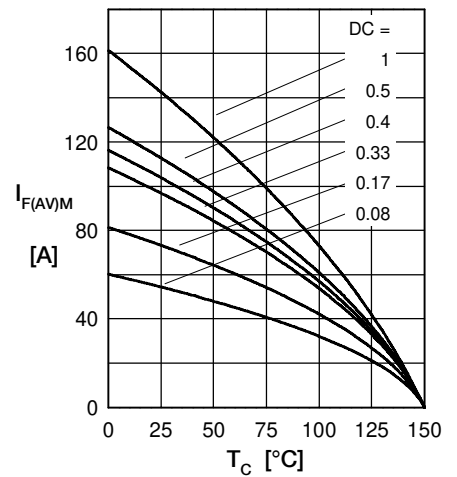


Fig. 5 Max. forward current vs. case temperature per diode



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

## Данный компонент на территории Российской Федерации

### Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

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