Standard Rectifier Module

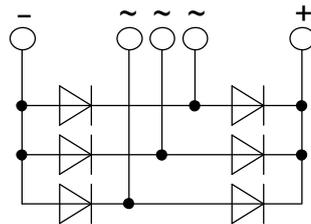| 3~ Rectifier		
V_{RRM} =		1200 V
I_{DAV} =		60 A
I_{FSM} =		550 A

3~ Rectifier Bridge

Part number

VUO62-12NO7

E72873

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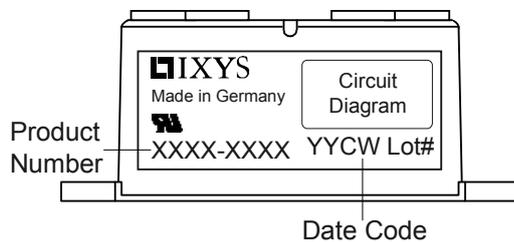- Very low leakage current

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: PWS-D
- Industry standard outline
- RoHS compliant
- Easy to mount with two screws
- Base plate: Copper internally DCB isolated
- Advanced power cycling

IXYS reserves the right to change limits, conditions and dimensions.   Data according to IEC 60747and per semiconductor unless otherwise specified   20130410a

Rectifier				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage	T_{VJ} = 25°C				1300	V
V_{RRM}	max. repetitive reverse blocking voltage	T_{VJ} = 25°C				1200	V
I_R	reverse current	V_R = 1200 V	T_{VJ} = 25°C			40	µA
		V_R = 1200 V	T_{VJ} = 150°C			1.5	mA
V_F	forward voltage drop	I_F = 20 A	T_{VJ} = 25°C			1.07	V
		I_F = 60 A				1.30	V
		I_F = 20 A	T_{VJ} = 125 °C			0.96	V
		I_F = 60 A				1.27	V
I_{DAV}	bridge output current	T_C = 120°C	T_{VJ} = 150°C			60	A
		rectangular d = ⅓					
V_{F0}	threshold voltage } for power loss calculation only		T_{VJ} = 150°C			0.78	V
r_F	slope resistance					8.1	mΩ
R_{thJC}	thermal resistance junction to case					1.1	K/W
R_{thCH}	thermal resistance case to heatsink				0.4		K/W
P_{tot}	total power dissipation	T_C = 25°C				110	W
I_{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine	T_{VJ} = 45°C			550	A
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			595	A
		t = 10 ms; (50 Hz), sine	T_{VJ} = 150°C			470	A
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			505	A
I^2t	value for fusing	t = 10 ms; (50 Hz), sine	T_{VJ} = 45°C			1.52	kA²s
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			1.48	kA²s
		t = 10 ms; (50 Hz), sine	T_{VJ} = 150°C			1.11	kA²s
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			1.06	kA²s
C_J	junction capacitance	V_R = 400 V; f = 1 MHz	T_{VJ} = 25°C		19		pF

Package   PWS-D

Symbol	Definition	Conditions		min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal				150	A
T_{stg}	storage temperature			-40		125	°C
T_{VJ}	virtual junction temperature			-40		150	°C
Weight					159		g
M_D	mounting torque			4.25		5.75	Nm
M_T	terminal torque			4.25		5.75	Nm
$d_{Spp/App}$	creepage distance on surface | striking distance through air	terminal to terminal		9.5			mm
$d_{Spb/Apb}$		terminal to backside		26.0			mm
V_{ISOL}	isolation voltage	t = 1 second	50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA	3000			V
		t = 1 minute		2500			V

Ratings

Product Number — XXXX-XXXX

Date Code — YYCW Lot#

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	VUO62-12NO7	VUO62-12NO7	Box	10	460451

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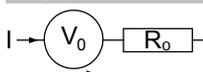
Rectifier

$V_{0\,max}$	threshold voltage	0.78	V
$R_{0\,max}$	slope resistance *	6.9	mΩ

IXYS

Outlines   PWS-D

2,5

7

30

3

72

60

54

20   20

2,5   18   2,5

21,6

5,3

~   ~   ~

5,3

13,3

42

+   −

M5

10

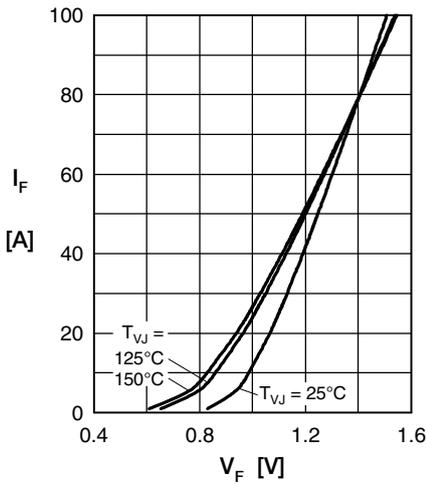23

48

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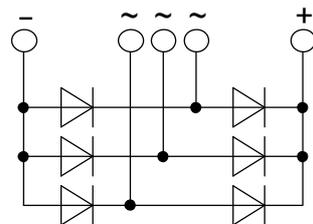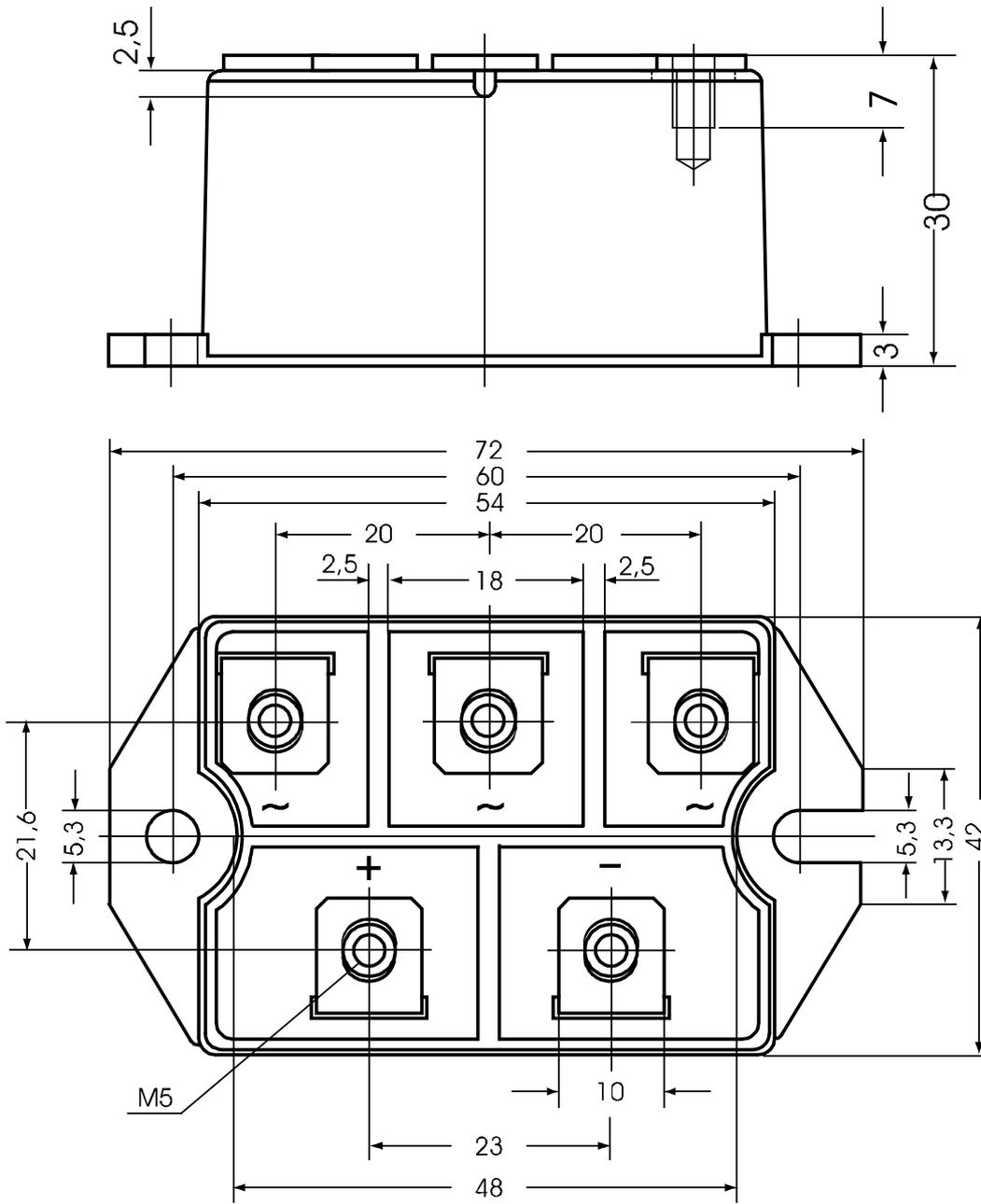
Rectifier

Fig. 1 Forward current vs.
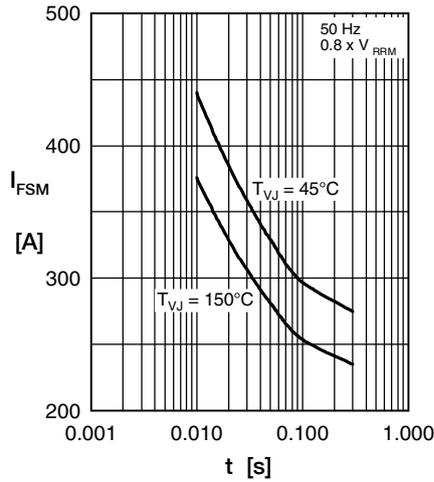voltage drop per diode

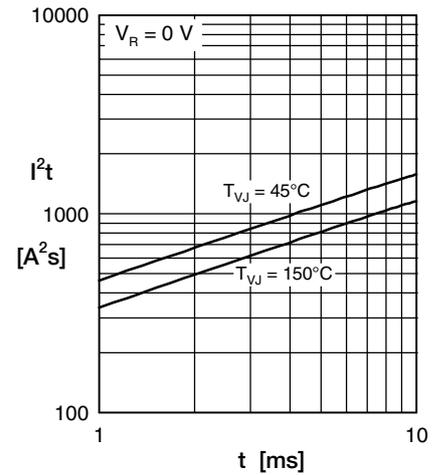
Fig. 2 Surge overload current
vs. time per diode

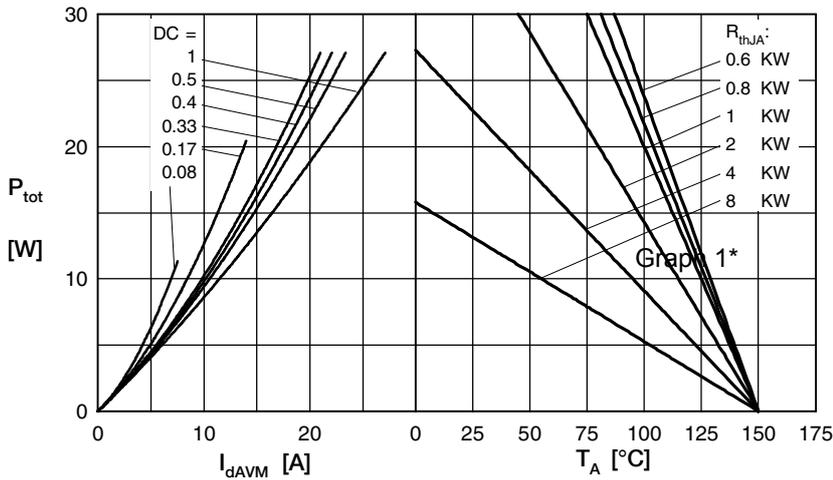Fig. 3 I^2t vs. time per diode

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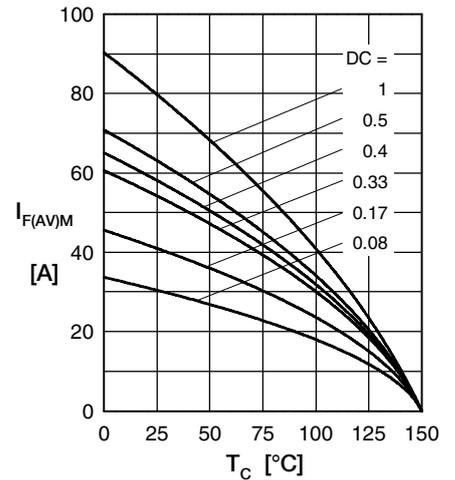and ambient temperature per diode

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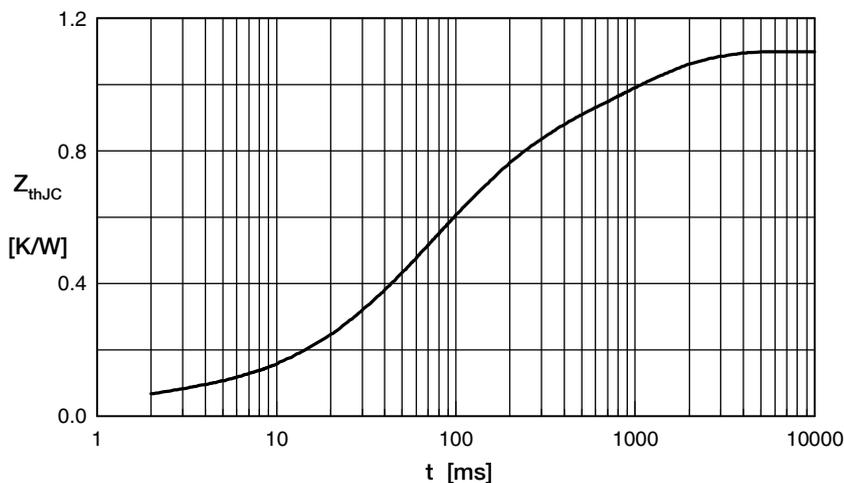case temperature per diode

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	0.05	0.001
2	0.14	0.030
3	0.25	0.060
4	0.35	0.130
5	0.31	0.920

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  VUO62-12NO7