Standard Rectifier Module

| 3~ Rectifier		
V_{RRM} =	1400	V
I_{DAV} =	75	A
I_{FSM} =	700	A

3~ Rectifier Bridge

Part number

VUO60-14NO3
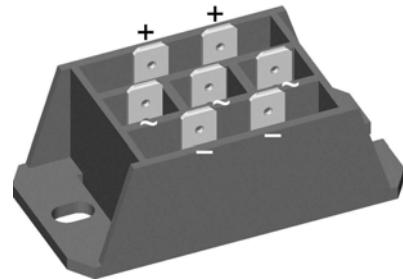
U E72873
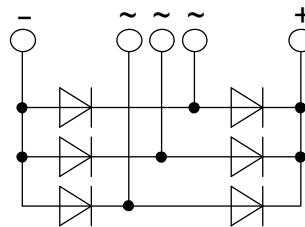
Features / Advantages:
- Package with DCB ceramic
- Reduced weight
- Improved temperature and power cycling
- Planar passivated chips
- Very low forward voltage drop
- Very low leakage current

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: FO-F-B
- Isolation Voltage: 3600 V~
- Industry standard outline
- RoHS compliant
- ¼" fast-on terminals
- Easy to mount with two screws
- Base plate: DCB ceramic
- Reduced weight
- Advanced power cycling

Data according to IEC 60747and per semiconductor unless otherwise specified   20130527b

Rectifier | | | | Ratings | | |

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			1.5	mA
V_F	forward voltage drop	I_F = 25 A	T_{VJ} = 25°C			1.06	V
		I_F = 75 A				1.30	V
		I_F = 25 A	T_{VJ} = 125°C			0.96	V
		I_F = 75 A				1.27	V
I_{DAV}	bridge output current	T_C = 110°C	T_{VJ} = 150°C			75	A
		rectangular d = ⅓					
V_{F0}	threshold voltage	} for power loss calculation only	T_{VJ} = 150°C			0.77	V
r_F	slope resistance					6.5	mΩ
R_{thJC}	thermal resistance junction to case					1.2	K/W
R_{thCH}	thermal resistance case to heatsink				0.4		K/W
P_{tot}	total power dissipation		T_C = 25°C			100	W
I_{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine	T_{VJ} = 45°C			700	A
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			755	A
		t = 10 ms; (50 Hz), sine	T_{VJ} = 150°C			595	A
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			645	A
I^2t	value for fusing	t = 10 ms; (50 Hz), sine	T_{VJ} = 45°C			2.45	kA²s
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			2.37	kA²s
		t = 10 ms; (50 Hz), sine	T_{VJ} = 150°C			1.77	kA²s
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			1.73	kA²s
C_J	junction capacitance	V_R = 400 V; f = 1 MHz	T_{VJ} = 25°C		25		pF

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Package	FO-F-B			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					45		g
M_D	mounting torque				2	2.5	Nm
$d_{Spp/App}$	creepage distance on surface | striking distance through air	terminal to terminal	18.0	6.0			mm
$d_{Spb/Apb}$		terminal to backside	26.0	20.0			mm
V_{ISOL}	isolation voltage	t = 1 second	50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA	3600			V
		t = 1 minute		3000			V

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	VUO60-14NO3	VUO60-14NO3	Box	10	465321

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

Rectifier

Symbol	Definition	Value		Unit
$V_{0\,max}$	threshold voltage	0.77		V
$R_{0\,max}$	slope resistance *	5.3		mΩ

Outlines   FO-F-B
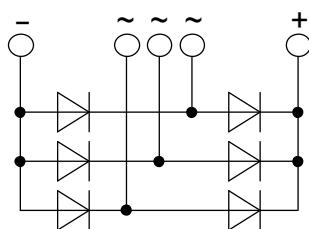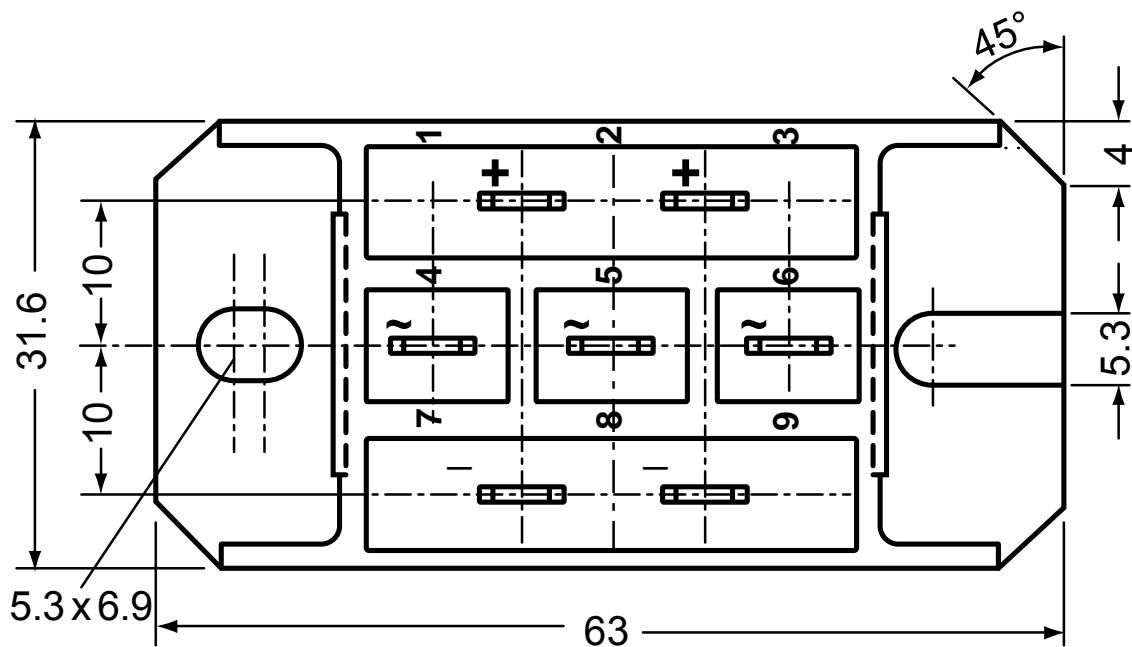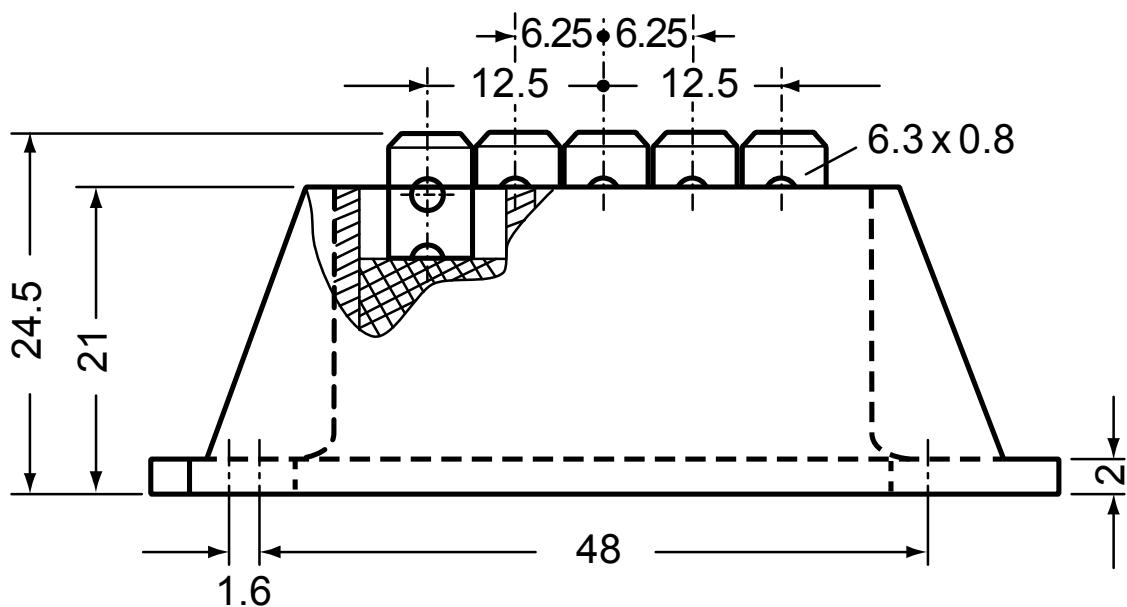
Rectifier
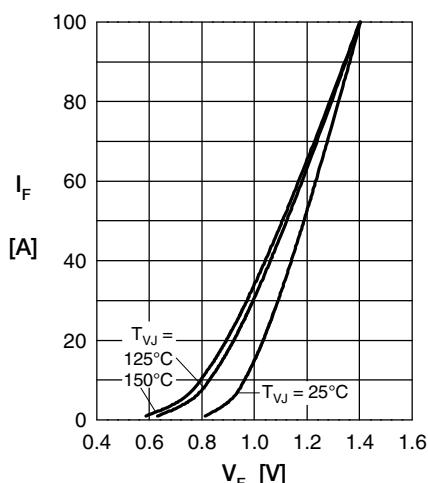
Fig. 1 Forward current vs. voltage drop per diode
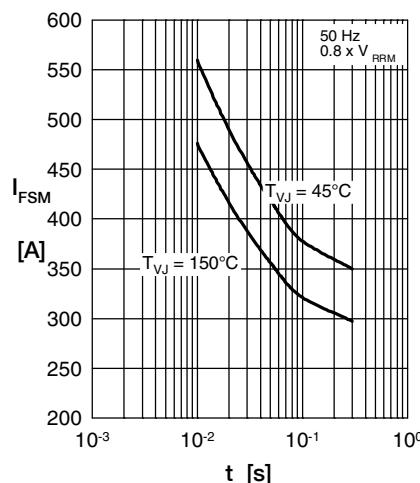
Fig. 2 Surge overload current vs. time per diode
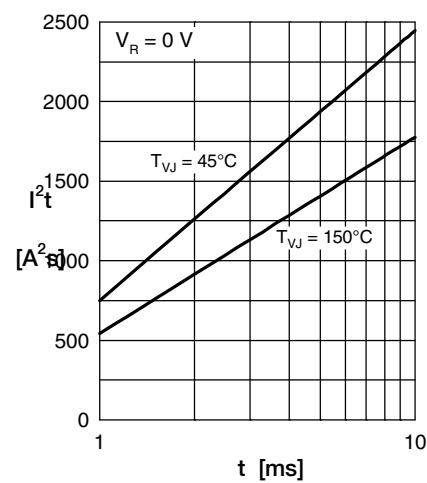

Fig. 3 I^2t vs. time per diode
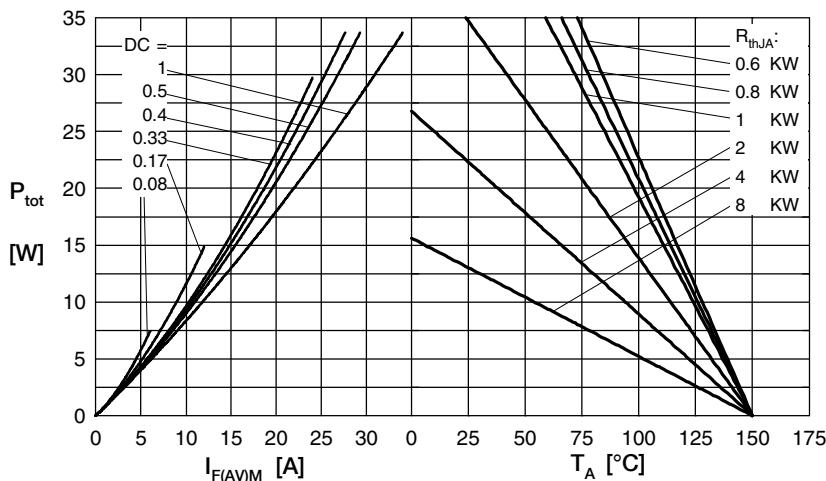
Fig. 4 Power dissipation vs. forward current and ambient temperature per diode
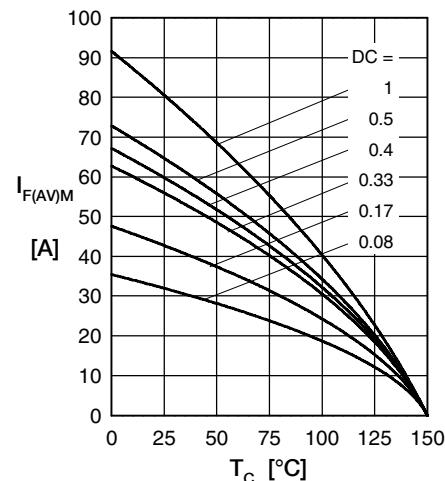

Fig. 5 Max. forward current vs. case temperature per diode
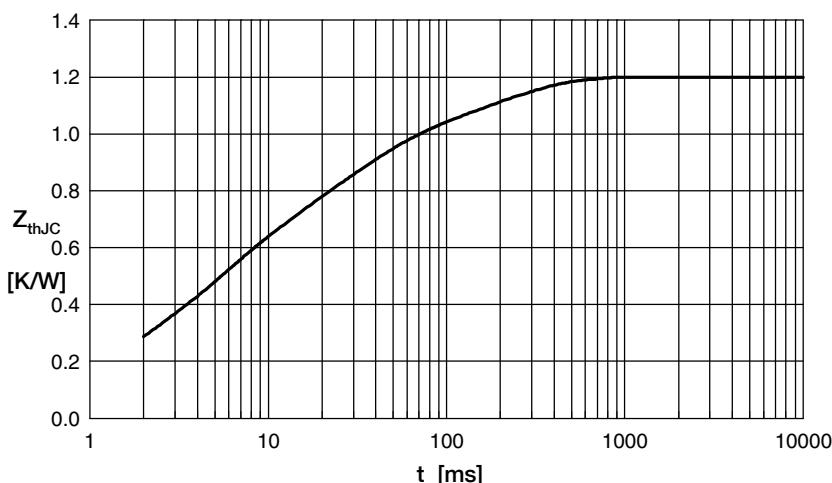
Fig. 6 Transient thermal impedance junction to case vs. time per diode

Constants for Z_{thJC} calculation:

i	R_{th} (K/W)	t_i (s)
1	0.0607	0.00040
2	0.1330	0.00256
3	0.3305	0.00450
4	0.4130	0.02420
5	0.2628	0.18000

IXYS reserves the right to change limits, conditions and dimensions.　　　　Data according to IEC 60747and per semiconductor unless otherwise specified　　　20130527b