

Standard Rectifier Module

3~ Rectifier	
V_{RRM}	= 800 V
I_{DAV}	= 60 A
I_{FSM}	= 550 A

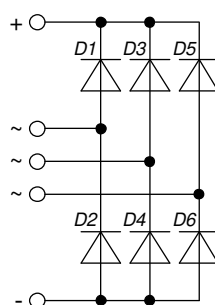
3~ Rectifier Bridge

Part number

VUO62-08NO7



 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

- Isolation Voltage: 3000 V~
- Industry standard outline
- RoHS compliant
- Easy to mount with two screws
- Base plate: Copper internally DCB isolated
- Advanced power cycling

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Rectifier				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				900	V
V_{RRM}	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				800	V
I_R	reverse current	$V_R = 800\text{ V}$	$T_{VJ} = 25^{\circ}\text{C}$			40	μA
		$V_R = 800\text{ V}$	$T_{VJ} = 150^{\circ}\text{C}$			1.5	mA
V_F	forward voltage drop	$I_F = 20\text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$			1.07	V
		$I_F = 60\text{ A}$				1.30	V
		$I_F = 20\text{ A}$	$T_{VJ} = 125^{\circ}\text{C}$			0.96	V
		$I_F = 60\text{ A}$				1.27	V
I_{DAV}	bridge output current	$T_C = 120^{\circ}\text{C}$ rectangular	$T_{VJ} = 150^{\circ}\text{C}$ $d = \frac{1}{3}$			60	A
V_{F0}	threshold voltage	} for power loss calculation only		$T_{VJ} = 150^{\circ}\text{C}$		0.78	V
r_F	slope resistance					8.1	m Ω
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	$T_C = 25^{\circ}\text{C}$				110	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}$	$T_{VJ} = 45^{\circ}\text{C}$			550	A
		$t = 8,3\text{ ms}; (60\text{ Hz}), \text{ sine}$	$V_R = 0\text{ V}$			595	A
		$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}$	$T_{VJ} = 150^{\circ}\text{C}$			470	A
		$t = 8,3\text{ ms}; (60\text{ Hz}), \text{ sine}$	$V_R = 0\text{ V}$			505	A
I^2t	value for fusing	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}$	$T_{VJ} = 45^{\circ}\text{C}$			1.52	kA ² s
		$t = 8,3\text{ ms}; (60\text{ Hz}), \text{ sine}$	$V_R = 0\text{ V}$			1.48	kA ² s
		$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}$	$T_{VJ} = 150^{\circ}\text{C}$			1.11	kA ² s
		$t = 8,3\text{ ms}; (60\text{ Hz}), \text{ sine}$	$V_R = 0\text{ V}$			1.06	kA ² s
C_J	junction capacitance	$V_R = 400\text{ V}; f = 1\text{ MHz}$			19		pF

Package PWS-D			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I _{RMS}	RMS current	per terminal			150	A
T _{VJ}	virtual junction temperature		-40		150	°C
T _{op}	operation temperature		-40		125	°C
T _{stg}	storage temperature		-40		125	°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	3000			V
		t = 1 minute	2500			V
			50/60 Hz, RMS; I _{ISOL} ≤ 1 mA			



Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	VUO62-08NO7	VUO62-08NO7	Box	10	460443

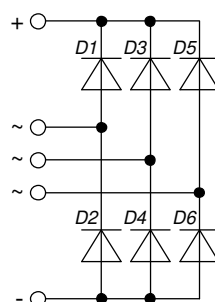
Equivalent Circuits for Simulation

* on die level

$T_{VJ} = 150^{\circ}\text{C}$

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

Technical drawing of a rectangular metal plate. The front view shows a plate with a total width of 30 and a height of 7. The top view shows a plate with a total width of 48 and a total height of 42. The top view is divided into five sections: three on the top and two on the bottom. The top sections are labeled with a tilde (~) and the bottom sections are labeled with a plus (+) and a minus (-) sign. The dimensions for the top view are: total width 48, total height 42, top section width 20, bottom section width 20, top section height 2,5, bottom section height 2,5, and the distance between the top and bottom sections is 18. The dimensions for the front view are: total width 30, height 7, and the distance from the top edge to the top of the plate is 2,5. The drawing also includes a detail view of a hole with a diameter of 5,3 and a depth of 13,3. The drawing is labeled with 'M5' and '10'.



Rectifier


Fig. 1 Forward current vs. voltage drop per diode



Fig. 2 Surge overload current vs. time per diode

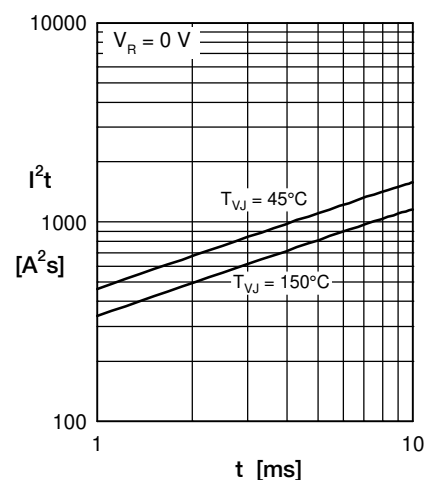


Fig. 3 I^2t vs. time per diode



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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