Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

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Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

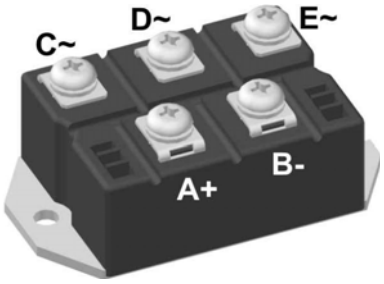
Standard Rectifier Module

3~ Rectifier		
V_{RRM}	=	1400 V
I_{DAV}	=	240 A
I_{FSM}	=	2800 A

3~ Rectifier Bridge

Part number

VUO190-14NO7



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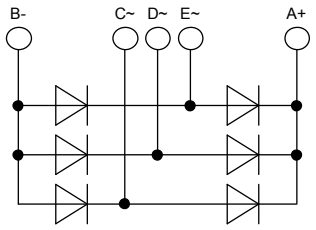


Features / Advantages:

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

Applications:

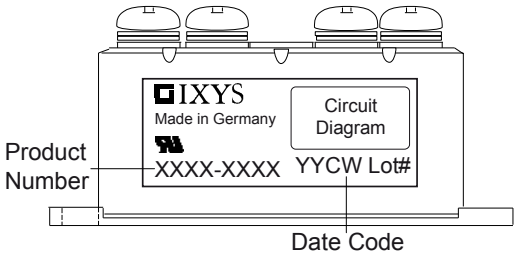
- Diode for main rectification
- For three phase bridge configurations
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

Package: PWS-E

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

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			200	µA
		V_R = 1400 V	T_{VJ} = 150°C			3.5	mA
V_F	*forward voltage drop*	I_F = 80 A	T_{VJ} = 25°C			1.07	V
		I_F = 240 A				1.36	V
		I_F = 80 A	T_{VJ} = 125 °C			0.96	V
		I_F = 240 A				1.33	V
I_{DAV}	*bridge output current*	T_C = 110°C	T_{VJ} = 150°C			240	A
		rectangular d = ⅓					
V_{F0}	*threshold voltage* } *for power loss calculation only*		T_{VJ} = 150°C			0.74	V
r_F	*slope resistance* }					2.4	mΩ
R_{thJC}	*thermal resistance junction to case*					0.4	K/W
R_{thCH}	*thermal resistance case to heatsink*				0.15		K/W
P_{tot}	*total power dissipation*		T_C = 25°C			310	W
I_{FSM}	*max. forward surge current*	t = 10 ms; (50 Hz), sine	T_{VJ} = 45°C			2.80	kA
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			3.03	kA
		t = 10 ms; (50 Hz), sine	T_{VJ} = 150°C			2.38	kA
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			2.57	kA
I^2t	*value for fusing*	t = 10 ms; (50 Hz), sine	T_{VJ} = 45°C			39.2	kA²s
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			38.1	kA²s
		t = 10 ms; (50 Hz), sine	T_{VJ} = 150°C			28.3	kA²s
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			27.5	kA²s
C_J	*junction capacitance*	V_R = 400 V; f = 1 MHz	T_{VJ} = 25°C		133		pF

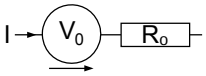
Package PWS-E				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
I_{RMS}	*RMS current*	per terminal				250	A
T_{stg}	*storage temperature*			-40		125	°C
T_{VJ}	*virtual junction temperature*			-40		150	°C
Weight					284		g
M_D	*mounting torque*			4.25		5.75	Nm
M_T	*terminal torque*			4.25		5.75	Nm
$d_{Spp/App}$	*creepage distance on surface | striking distance through air*		*terminal to terminal*	12.0			mm
$d_{Spb/Apb}$			*terminal to backside*	26.0			mm
V_{ISOL}	*isolation voltage*	t = 1 second	50/60 Hz, RMS; I_{ISOL} ≤ 1 mA	3000			V
		t = 1 minute		2500			V



Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	VUO190-14NO7	VUO190-14NO7	Box	5	462500

Equivalent Circuits for Simulation

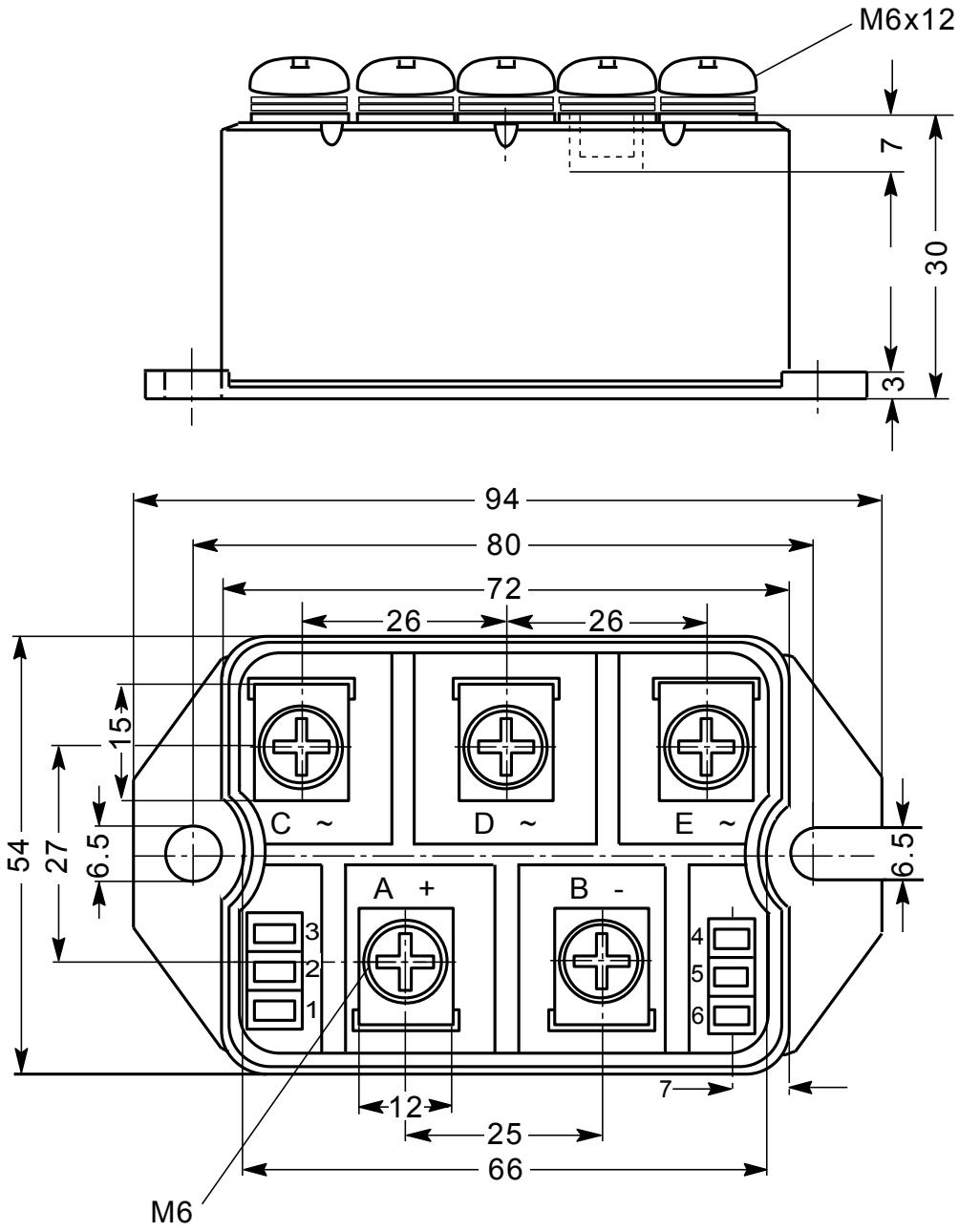
** on die level* T_{VJ} = 150 °C

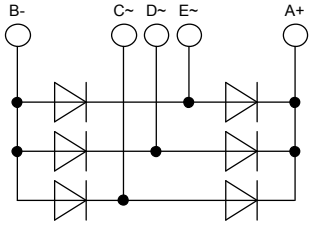


Rectifier

$V_{0\,max}$	*threshold voltage*	0.74	V
$R_{0\,max}$	*slope resistance **	1.2	mΩ

Outlines PWS-E





Rectifier

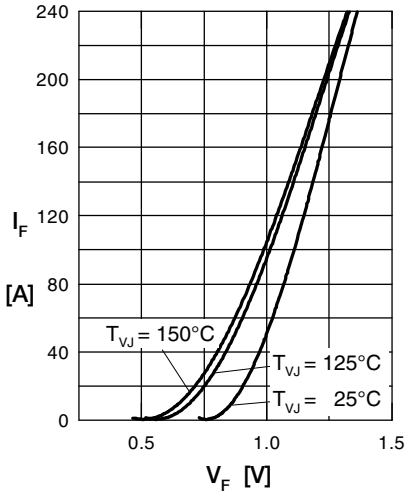


Fig. 1 Forward current vs. voltage drop per diode

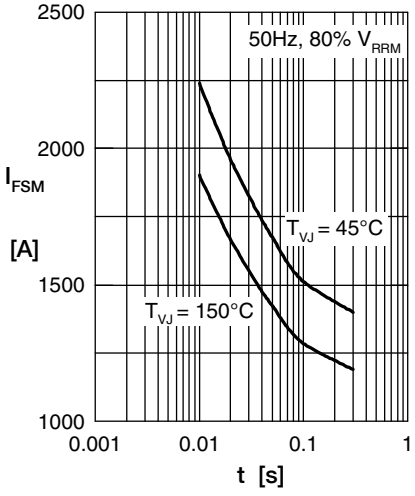


Fig. 2 Surge overload current vs. time per diode

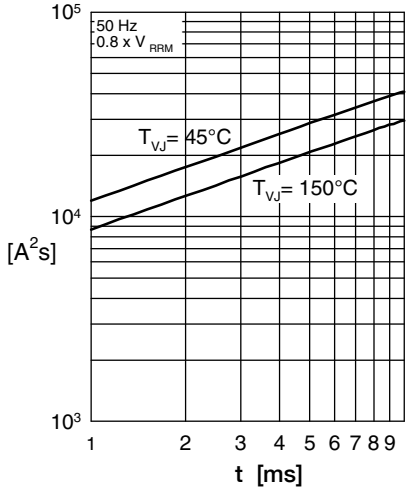


Fig. 3 I^2t vs. time per diode

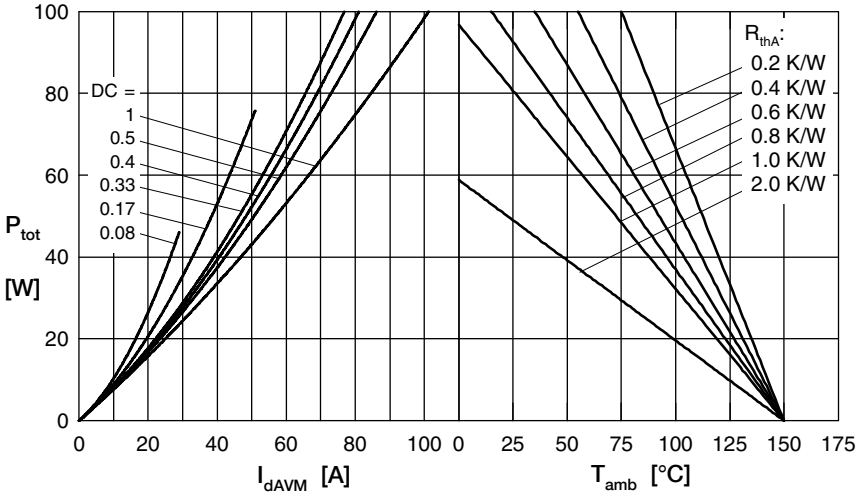


Fig. 4 Power dissipation vs. forward current and ambient temperature per diode

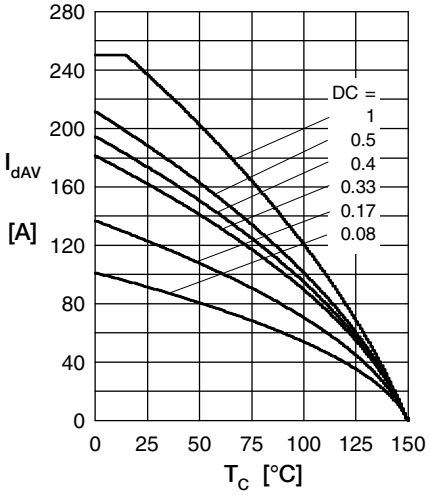
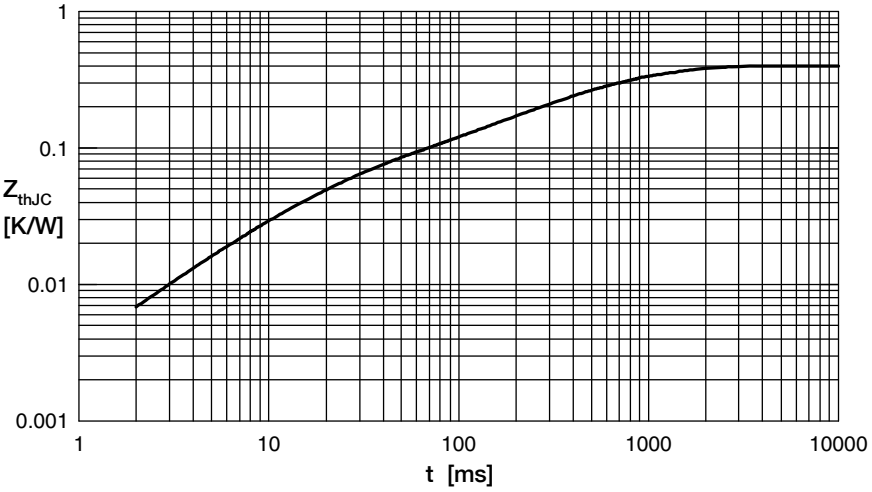


Fig. 5 Max. forward current vs. case temperature per diode



R_i	t_i
0.050	0.02
0.003	0.01
0.100	0.225
0.177	0.8
0.070	0.58

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