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

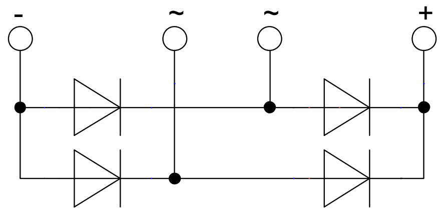
1~ Rectifier		
V_{RRM}	=	1800 V
I_{DAV}	=	60 A
I_{FSM}	=	550 A

1~ Rectifier Bridge

Part number

VBO52-18NO7

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:

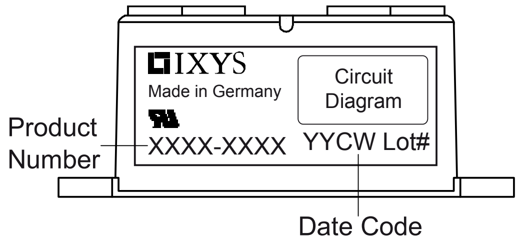
- Diode for main rectification
- For one phase bridge configurations
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

Package: PWS-D

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

Rectifier				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage		T_{VJ} = 25°C			1900	V
V_{RRM}	max. repetitive reverse blocking voltage		T_{VJ} = 25°C			1800	V
I_R	reverse current	V_R = 1800 V	T_{VJ} = 25°C			40	µA
		V_R = 1800 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 = 40 A				1.19	V
		I_F = 20 A	T_{VJ} = 125 °C			0.96	V
		I_F = 40 A				1.13	V
I_{DAV}	bridge output current	T_C = 115°C rectangular d = 0.5	T_{VJ} = 150°C			60	A
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

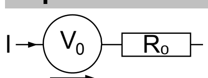
Package PWS-D				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
I_{RMS}	*RMS current*	per terminal				150	A
T_{stg}	*storage temperature*			-40		125	°C
T_{VJ}	*virtual junction temperature*			-40		150	°C
Weight					153		g
M_D	*mounting torque*			4.25		5.75	Nm
M_T	*terminal torque*			4.25		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; $I_{ISOL} \le 1$ mA	3000			V
		t = 1 minute		2500			V



Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	VBO52-18NO7	VBO52-18NO7	Box	10	491470

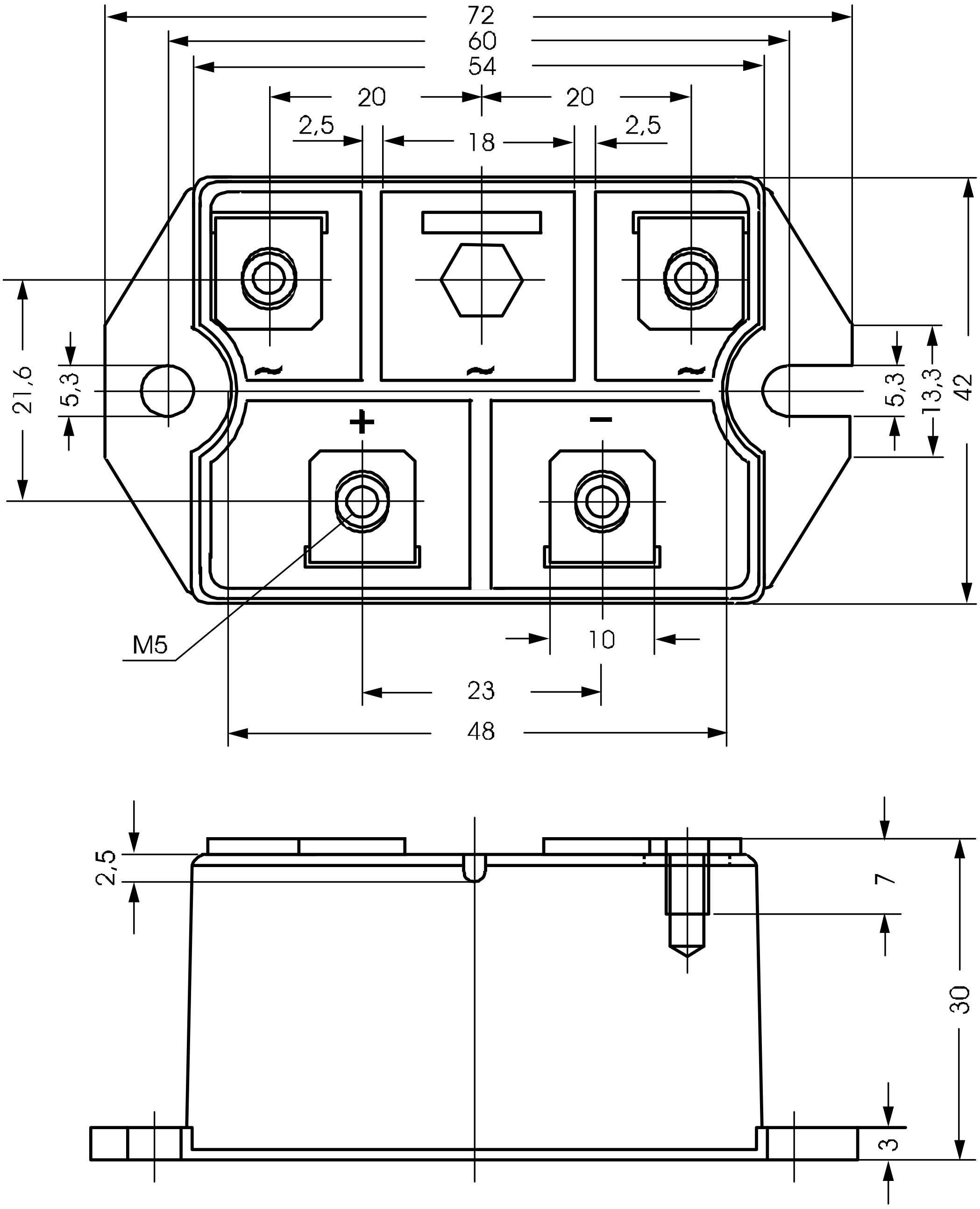
Equivalent Circuits for Simulation

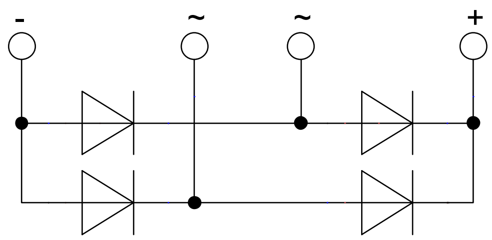
** on die level* $T_{VJ} = 150\,°C$



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

Outlines PWS-D





Rectifier

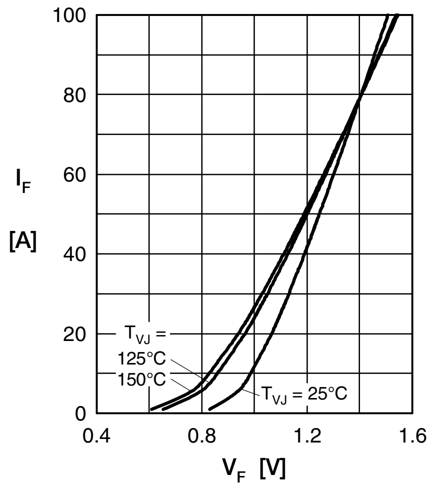


Fig. 1 Forward current vs. voltage drop per diode

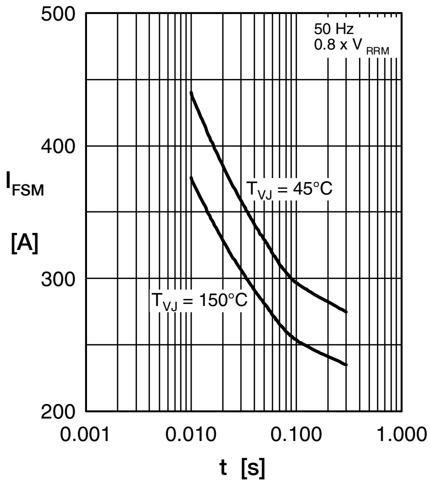


Fig. 2 Surge overload current vs. time per diode

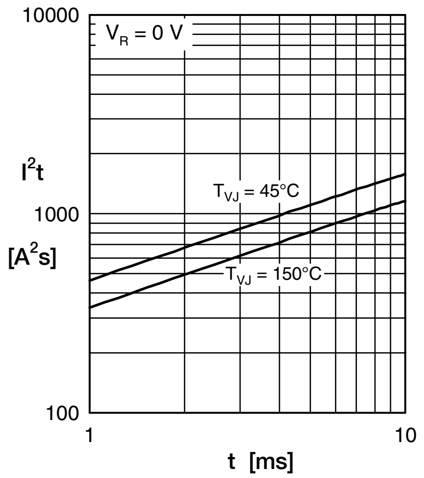


Fig. 3 I^2t vs. time per diode

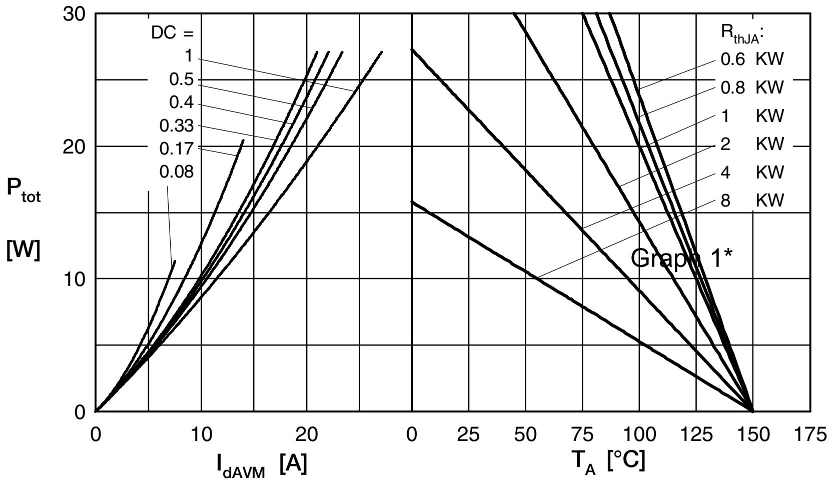


Fig. 4 Power dissipation vs. forward current and ambient temperature per diode

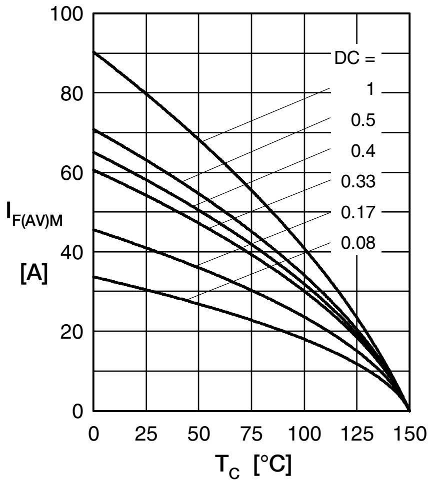


Fig. 5 Max. forward current vs. case temperature per diode

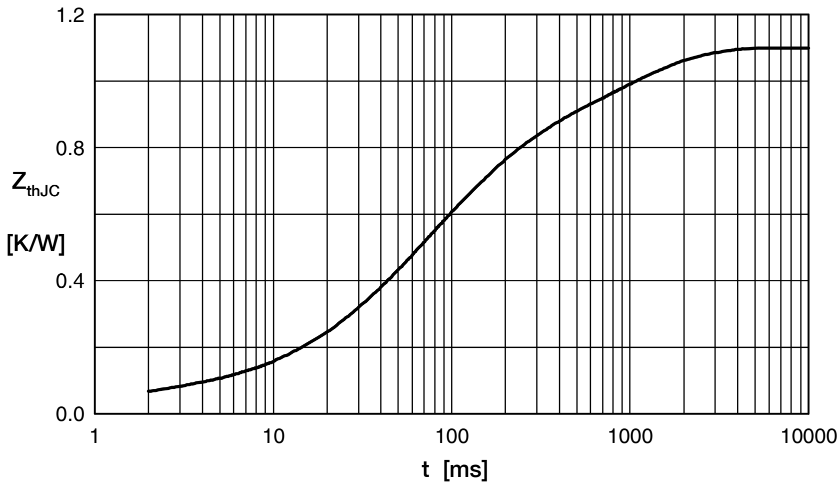


Fig. 6 Transient thermal impedance junction to case vs. time per diode

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