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!

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

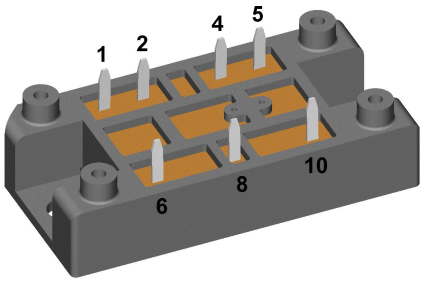
Standard Rectifier Module

3~ Rectifier		
V_{RRM}	=	1800
I_{DAV}	=	60
I_{FSM}	=	350

3~ Rectifier Bridge

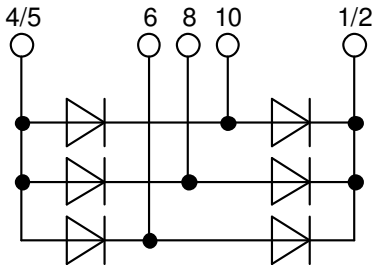
Part number

VUO52-18NO1



Backside: isolated

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:

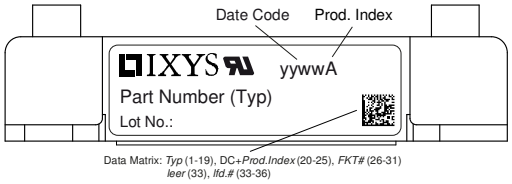
- Diode for main rectification
- For three phase bridge configurations
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

Package: V1-A-Pack

- Isolation Voltage: 3600 V~
- Industry standard outline
- RoHS compliant
- Soldering pins for PCB mounting
- Height: 17 mm
- Base plate: DCB ceramic
- Reduced weight
- 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			1,13	V
		I_F = 60 A				1,44	V
		I_F = 20 A	T_{VJ} = 125°C			1,07	V
		I_F = 60 A				1,50	V
I_{DAV}	*bridge output current*	T_C = 110°C	T_{VJ} = 150°C			60	A
		rectangular d = ⅓					
V_{F0}	*threshold voltage* } *for power loss calculation only*		T_{VJ} = 150°C			0,83	V
r_F	*slope resistance* }					11,5	mΩ
R_{thJC}	*thermal resistance junction to case*					1,3	K/W
R_{thCH}	*thermal resistance case to heatsink*				0,3		K/W
P_{tot}	*total power dissipation*		T_C = 25°C			95	W
I_{FSM}	*max. forward surge current*	t = 10 ms; (50 Hz), sine	T_{VJ} = 45°C			350	A
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			380	A
		t = 10 ms; (50 Hz), sine	T_{VJ} = 150°C			300	A
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			320	A
I^2t	*value for fusing*	t = 10 ms; (50 Hz), sine	T_{VJ} = 45°C			615	A²s
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			600	A²s
		t = 10 ms; (50 Hz), sine	T_{VJ} = 150°C			450	A²s
		t = 8,3 ms; (60 Hz), sine	V_R = 0 V			425	A²s
C_J	*junction capacitance*	V_R = 400 V; f = 1 MHz	T_{VJ} = 25°C		10		pF

Package V1-A-Pack				Ratings			
Symbol	**Definition**	**Conditions**		**min.**	**typ.**	**max.**	**Unit**
I_{RMS}	*RMS current*	per terminal				100	A
T_{VJ}	*virtual junction temperature*			-40		150	°C
T_{op}	*operation temperature*			-40		125	°C
T_{stg}	*storage temperature*			-40		125	°C
Weight					37		g
M_D	*mounting torque*			2		2,5	Nm
$d_{Spp/App}$	*creepage distance on surface | striking distance through air*		*terminal to terminal*	6,0			mm
$d_{Spb/Apb}$			*terminal to backside*	12,0			mm
V_{ISOL}	*isolation voltage*	t = 1 second	50/60 Hz, RMS; I_{ISOL} ≤ 1 mA	3600			V
		t = 1 minute		3000			V

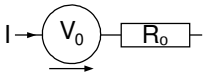


Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	VUO52-18NO1	VUO52-18NO1	Blister	24	461199

Similar Part	Package	Voltage class
VUO52-08NO1	V1-A-Pack	800
VUO52-12NO1	V1-A-Pack	1200
VUO52-14NO1	V1-A-Pack	1400
VUO52-16NO1	V1-A-Pack	1600
VUO52-20NO1	V1-A-Pack	2000
VUO52-22NO1	V1-A-Pack	2200
VUO34-16NO1	V1-A-Pack	1600
VUO34-18NO1	V1-A-Pack	1800

Equivalent Circuits for Simulation

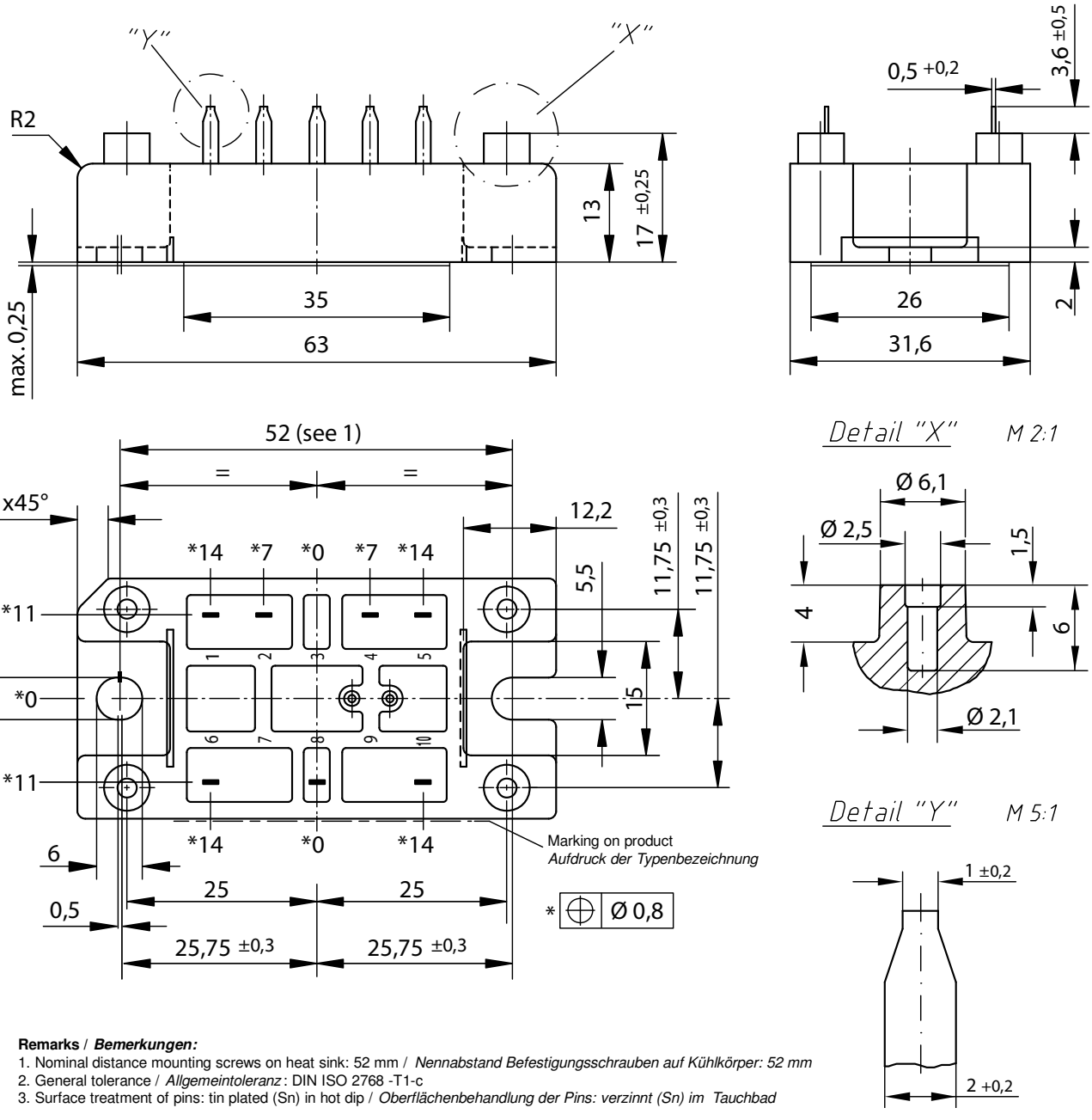
** on die level* T_{VJ} = 150 °C



Rectifier

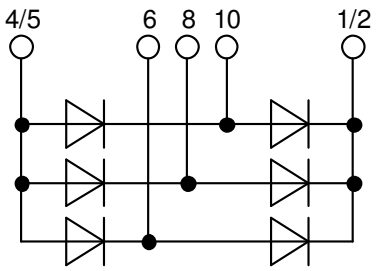
$V_{0\,max}$	*threshold voltage*	0,83	V
$R_{0\,max}$	*slope resistance **	10,2	mΩ

Outlines V1-A-Pack



Remarks / ***Bemerkungen:***

1. Nominal distance mounting screws on heat sink: 52 mm / *Nennabstand Befestigungsschrauben auf Kühlkörper: 52 mm*
2. General tolerance / *Allgemeintoleranz*: DIN ISO 2768 -T1-c
3. Surface treatment of pins: tin plated (Sn) in hot dip / *Oberflächenbehandlung der Pins: verzinnt (Sn) im Tauchbad*



Rectifier

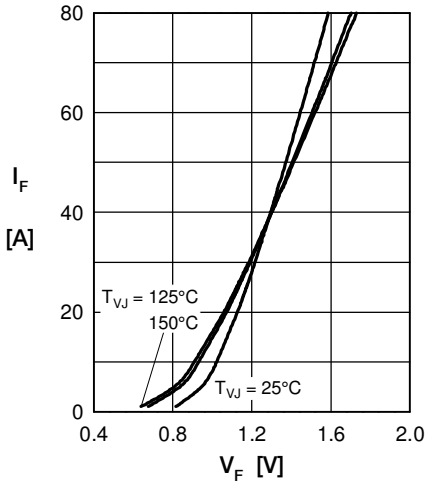


Fig. 1 Forward current vs. voltage drop per diode

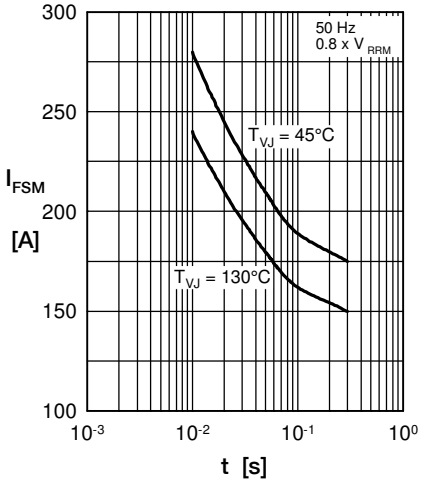


Fig. 2 Surge overload current vs. time per diode

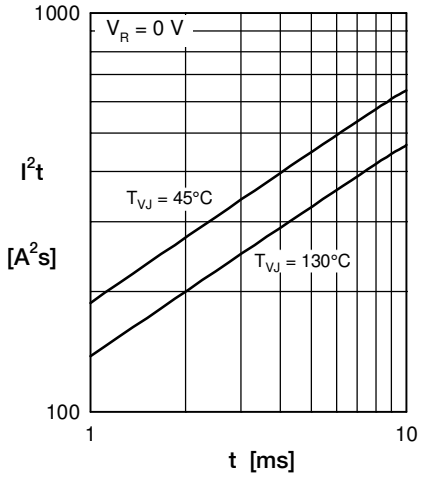


Fig. 3 I^2t vs. time per diode

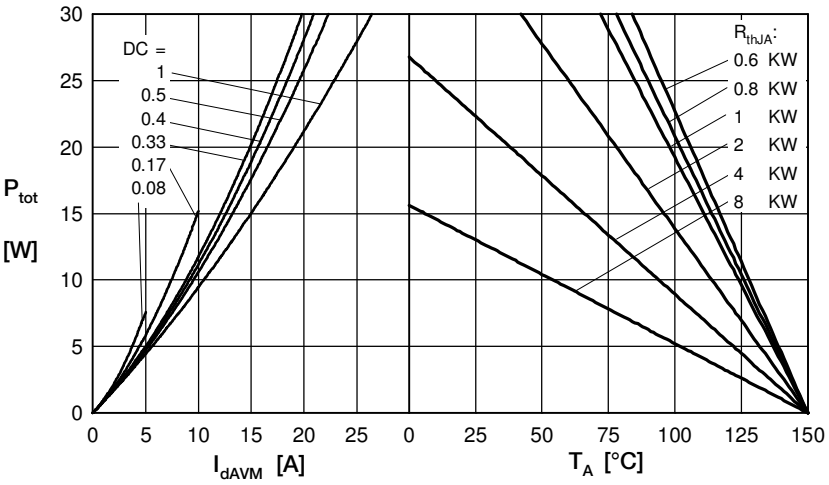


Fig. 4 Power dissipation vs. forward current and ambient temperature per diode

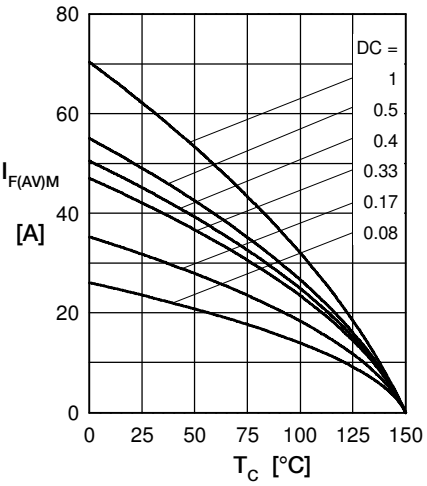


Fig. 5 Max. forward current vs. case temperature per diode

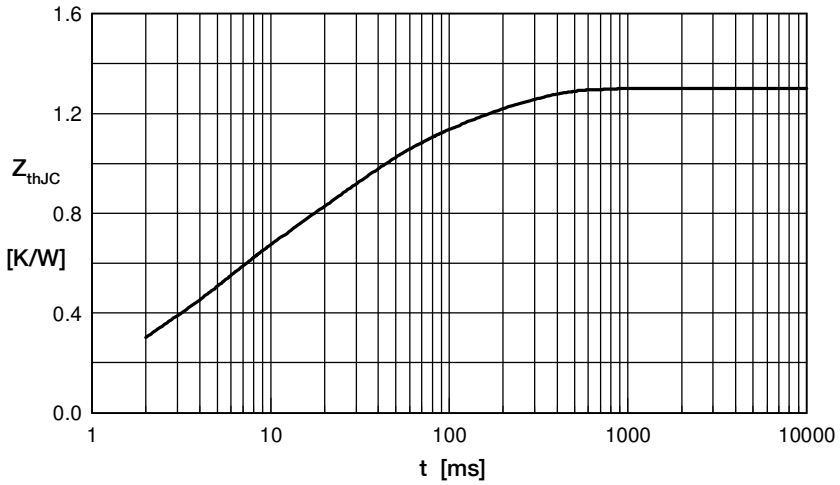


Fig. 6 Transient thermal impedance junction to case vs. time per diode

Constants for Z_{thJC} calculation:

i	R_{th} (K/W)	t_i (s)
1	0.06070	0.008
2	0.173	0.05
3	0.3005	0.06
4	0.463	0.3
5	0.3028	0.15