

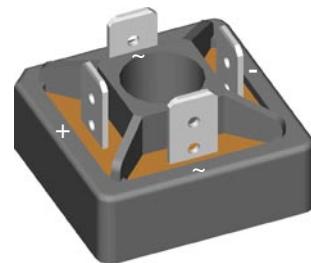
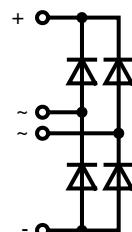
Single Phase Rectifier Bridge

Standard and Avalanche Types

$I_{dAV} = 31 \text{ A}$
 $V_{RRM} = 800-1600 \text{ V}$

V_{RSM} V	V_{BRmin} ^① V	V_{RRM} V	Standard Types	Avalanche Types
900		800	VBO 20-08N02	
1300	1230	1200	VBO 20-12N02	VBO 20-12AO2
1500	1430	1400	VBO 20-14N02	VBO 20-14AO2
1700	1630	1600	VBO 20-16N02	VBO 20-16AO2

① For Avalanche Types only



RU

Symbol	Conditions	Maximum Ratings		
I_{dAV} ②	$T_C = 85^\circ\text{C}$, module	31	A	
I_{dAVM}	module	40	A	
P_{RSM}	$T_{VJ} = T_{VJM}$	3.4	kW	
I_{FSM}	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0$	300	A	
	$t = 10 \text{ ms}$ (50 Hz) $t = 8.3 \text{ ms}$ (60 Hz)	315	A	
	$T_{VJ} = T_{VJM}$; $V_R = 0$	250	A	
	$t = 10 \text{ ms}$ (50 Hz) $t = 8.3 \text{ ms}$ (60 Hz)	265	A	
I^2t	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0$	450	A^2s	
	$t = 10 \text{ ms}$ (50 Hz) $t = 8.3 \text{ ms}$ (60 Hz)	420	A^2s	
	$T_{VJ} = T_{VJM}$; $V_R = 0$	312	A^2s	
	$t = 10 \text{ ms}$ (50 Hz) $t = 8.3 \text{ ms}$ (60 Hz)	290	A^2s	
T_{VJ}		-40...+150	$^\circ\text{C}$	
T_{VJM}		150	$^\circ\text{C}$	
T_{stg}		-40...+125	$^\circ\text{C}$	
V_{ISOL}	50/60 Hz, RMS $I_{ISOL} \leq 1 \text{ mA}$	3000	V \sim	
	$t = 1 \text{ min}$	3600	V \sim	
	$t = 1 \text{ s}$			
M_d	Mounting torque (M5) (10-32 UNF)	1.5-2 13-18	Nm lb.in.	
Weight	Typ.	15	g	

Symbol	Conditions	Characteristic Values		
I_R	$V_R = V_{RRM}$	0.3	mA	
	$T_{VJ} = 25^\circ\text{C}$	5.0	mA	
	$T_{VJ} = T_{VJM}$			
V_F	$I_F = 55 \text{ A}$	1.8	V	
V_{TO}	For power-loss calculations only	0.85	V	
r_t		14	$\text{m}\Omega$	
R_{thJC}	per diode; 120° el. per module	3.00 0.75	K/W	
R_{thCH}	per diode; 120° el. per module	3.40 0.85	K/W	
d_s	Creeping distance on surface	13	mm	
d_A	Creepage distance in air ③	9.5	mm	
a	Max. allowable acceleration	50	m/s^2	

Data according to IEC 60747 and refer to a single diode unless otherwise stated.

② for resistive load at bridge output

③ with isolated fast-on tabs.

IXYS reserves the right to change limits, test conditions and dimensions.

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Features

- Avalanche rated parts available
- Package with DCB ceramic base plate
- Isolation voltage 3600 V \sim
- Planar passivated chips
- Low forward voltage drop
- 1/4" fast-on terminals
- UL registered E 72873

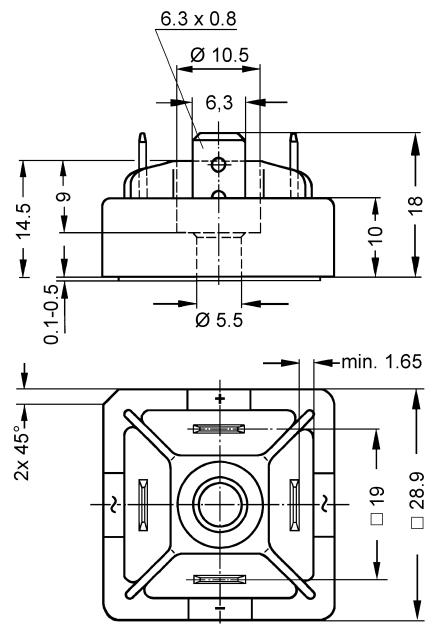
Applications

- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

Advantages

- Easy to mount with one screw
- Space and weight savings
- Improved temperature & power cycling

Dimensions in mm (1 mm = 0.0394")



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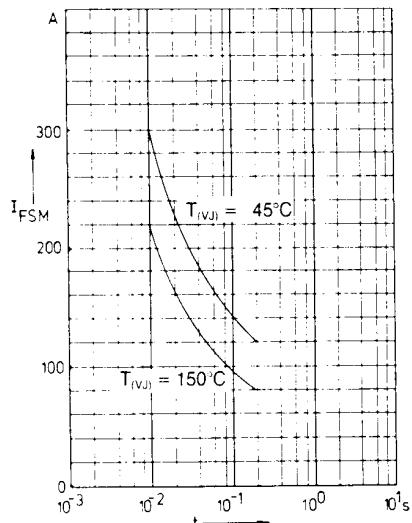


Fig. 1 Surge overload current per diode
 I_{FSM} : Crest value, t : duration

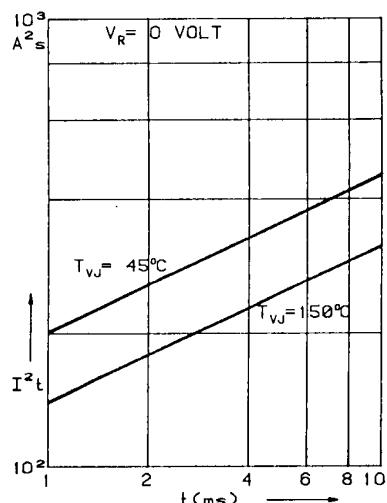


Fig. 2 I^2t versus time (1-10 ms)
per diode

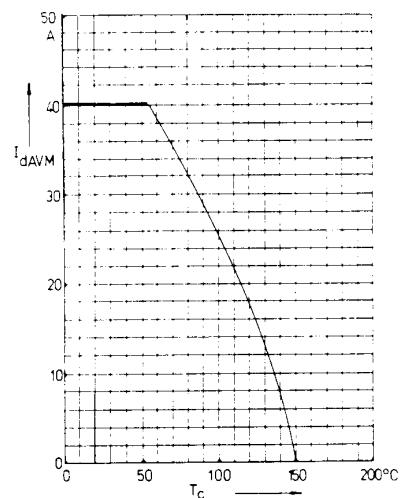


Fig. 3 Max. forward current at case
temperature

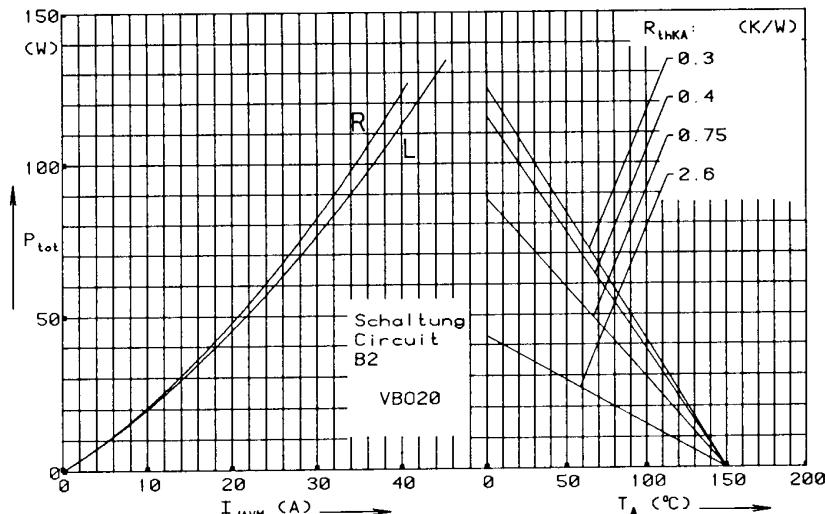


Fig. 4 Power dissipation versus direct output current and ambient temperature

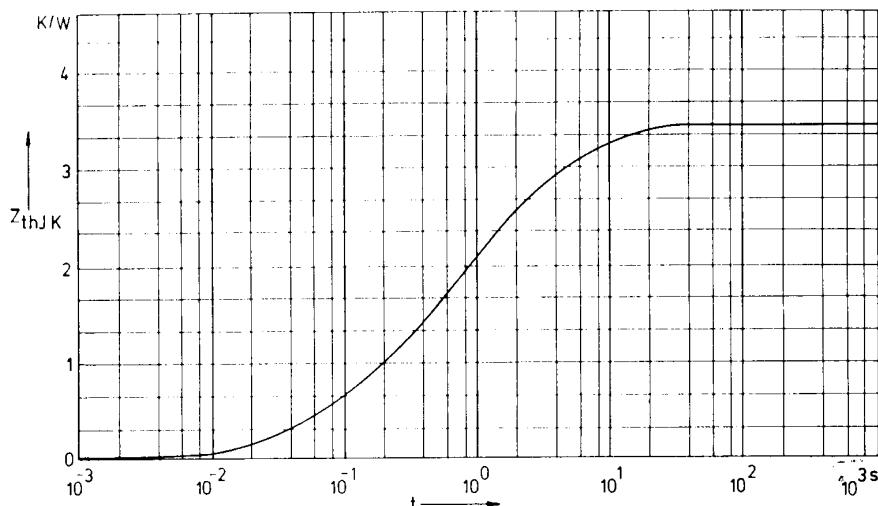


Fig. 5 Transient thermal impedance junction to heatsink per diode

Constants for Z_{thJK} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.775	0.0788
2	1.390	0.504
3	1.255	3.701