IXYS

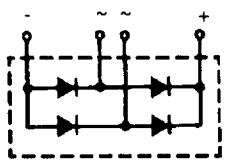
Single Phase Rectifier Bridges

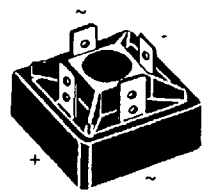
VBO 20 I_{dAV} = 31 A
V_{RRM} = 800 - 1600 V

Standard and Avalanche Types

V_{RSM} V	V_{BRmin} ① V	V_{RRM} V	Standard Types	Avalanche Types
900		800	VBO 20-08NO2	
1300	1230	1200	VBO 20-12NO2	VBO 20-12AO2
1700	1630	1600	VBO 20-16NO2	VBO 20-16AO2

① For Avalanche Types only





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

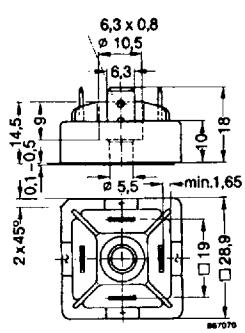
Features
- Avalanche rated parts available
- Package with DCB ceramic base plate
- Isolation voltage 3600 V~
- Planar passivated chips
- Low forward voltage drop
- 1/4" fast-on terminals
- UL registered E 72873

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 and power cycling

Symbol	Test Conditions		Characteristic Values		
I_R	$V_R = V_{RRM}$;	T_{VJ} = 25°C	≤	0.3	mA
	$V_R = V_{RRM}$;	$T_{VJ} = T_{VJM}$	≤	5	mA
V_F	I_F = 55 A;	T_{VJ} = 25°C	≤	1.6	V
V_{T0}	For power-loss calculations only			0.85	V
r_T	$T_{VJ} = T_{VJM}$			14	mΩ
R_{thJC}	per diode, DC current			3.0	K/W
	per module			0.75	K/W
R_{thJK}	per diode, DC current			3.4	K/W
	per module			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

Dimensions in mm (1 mm = 0.0394")



Data according to DIN/IEC 747 and refer to a single diode unless otherwise stated
② for resistive load at bridge output, ③ with isolated fast-on tabs

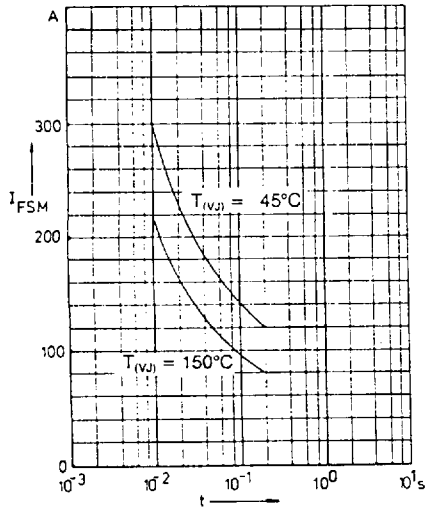


Fig. 1 Surge overload current per diode
I_{FSM}: Crest value, t: duration

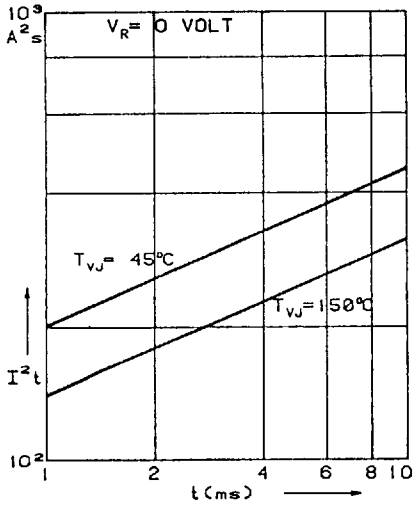


Fig. 2 $\int i^2dt$ versus time (1-10 ms) per diode

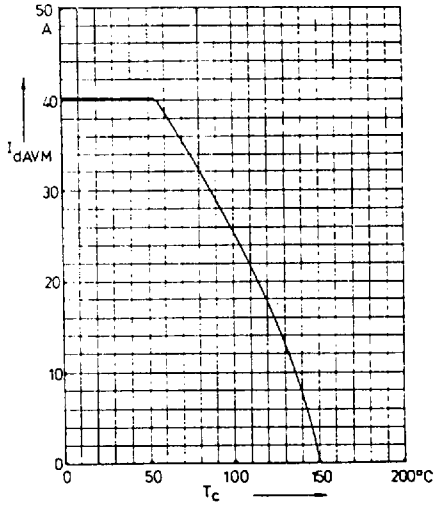


Fig. 3 Max. forward current at case temperature

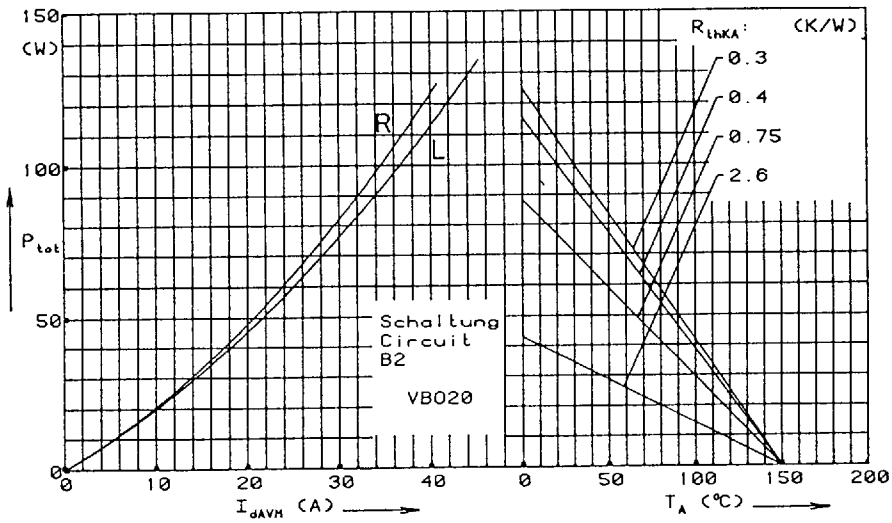


Fig. 4 Power dissipation versus direct output current and ambient temperature

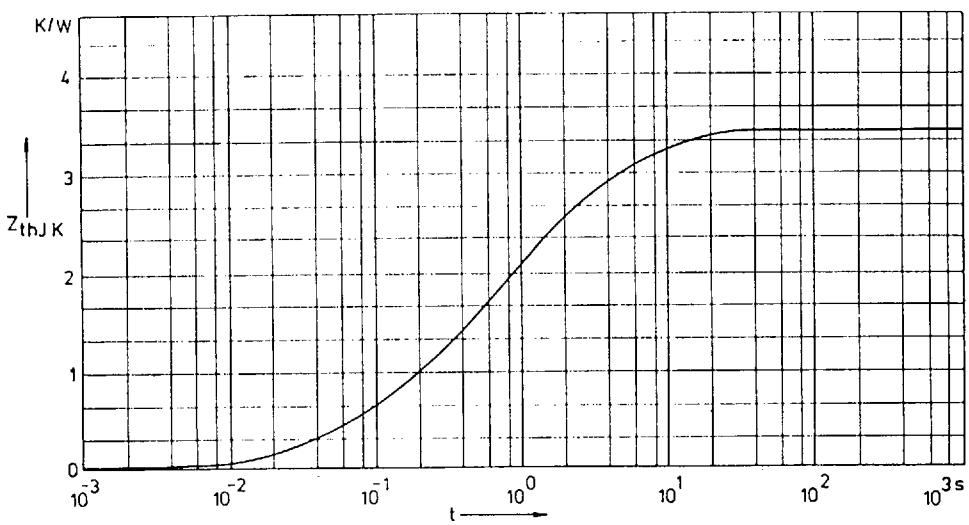


Fig. 5 Transient thermal impedance junction to heatsink per diode

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