

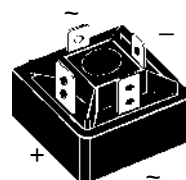
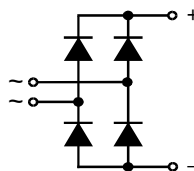
Single Phase Rectifier Bridge

$$\begin{aligned} I_{dAV} &= 18 \text{ A} \\ V_{BRM} &= 800\text{-}1600 \text{ V} \end{aligned}$$

Standard and Avalanche Types

V_{RSM}	$V_{BRmin}^{①}$	V_{RRM}	Standard	Avalanche
V	V	V	Types	Types
900		800	VBO 13-08NO2	
1300	1230	1200	VBO 13-12NO2	VBO 13-12AO2
1700	1630	1600	VBO 13-16NO2	VBO 13-16AO2

① For Avalanche Types only



Symbol	Test Conditions		Maximum Ratings	
I_{dAV} ②	T _C = 85°C, module		18	A
I_{dAVM}	module		30	A
P_{RSM}	T _{VJ} = T _{VJM}	t = 10 μs	2.5	kW
I_{FSM}	T _{VJ} = 45°C; V _R = 0	t = 10 ms (50 Hz), sine	220	A
		t = 8.3 ms (60 Hz), sine	230	A
	T _{VJ} = T _{VJM} V _R = 0	t = 10 ms (50 Hz), sine	180	A
		t = 8.3 ms (60 Hz), sine	190	A
I²t	T _{VJ} = 45°C V _R = 0	t = 10 ms (50 Hz), sine	240	A ² s
		t = 8.3 ms (60 Hz), sine	220	A ² s
	T _{VJ} = T _{VJM} V _R = 0	t = 10 ms (50 Hz), sine	160	A ² s
		t = 8.3 ms (60 Hz), sine	150	A ² s
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} ≤ 1 mA	t = 1 s	3600	V~
M_d	Mounting torque (M5) (10-32 UNF)		1.5-2	Nm
			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
- ¼" 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

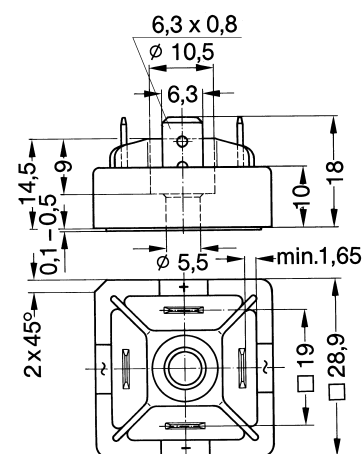
Symbol	Test Conditions	Characteristic Values		
I_R	$V_R = V_{RRM}$; $T_{VJ} = 25^\circ\text{C}$	$\leq$	0.3	mA
	$V_R = V_{RRM}$; $T_{VJ} = T_{VJM}$	$\leq$	5	mA
I_F	$I_F = 55\text{ A}$; $T_{VJ} = 25^\circ\text{C}$	$\leq$	1.8	V
V_{T0}	For power-loss calculations only		0.85	V
r_T	$T_{VJ} = T_{VJM}$		17	m Ω
R_{thJC}	per diode; DC current		5.6	K/W
	per module		1.4	K/W
R_{thJK}	per diode, DC current		6.0	K/W
	per module		1.5	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.

Dimensions in mm (1 mm = 0.0394")



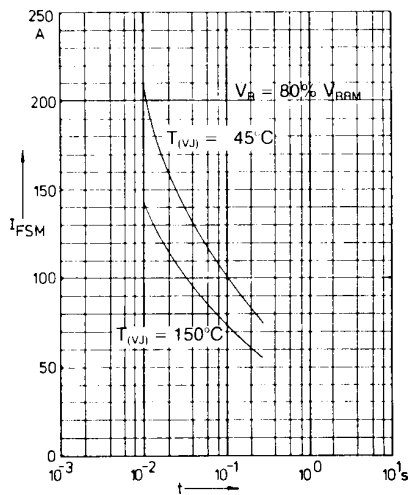


Fig. 1 Surge overload current per diode
 I_{FSM} : Crest value, t : duration

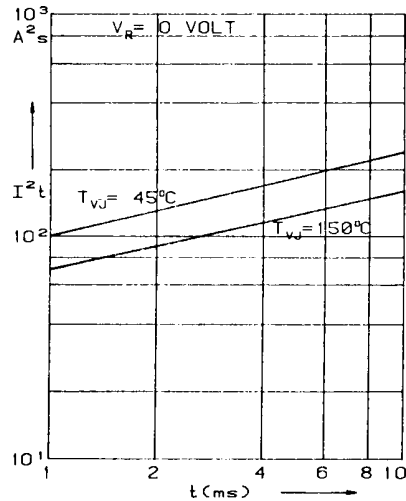


Fig. 2 I^2t versus time (1-10 ms)
per diode

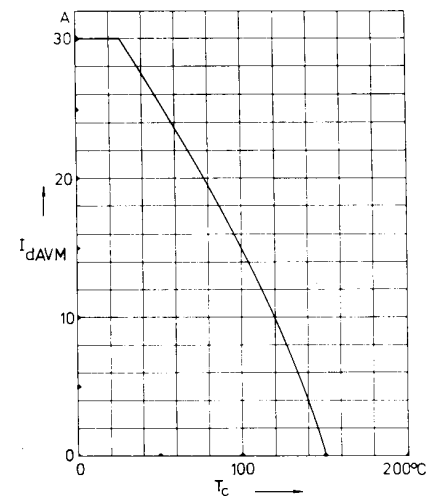


Fig. 3 Max. forward current at case
temperature

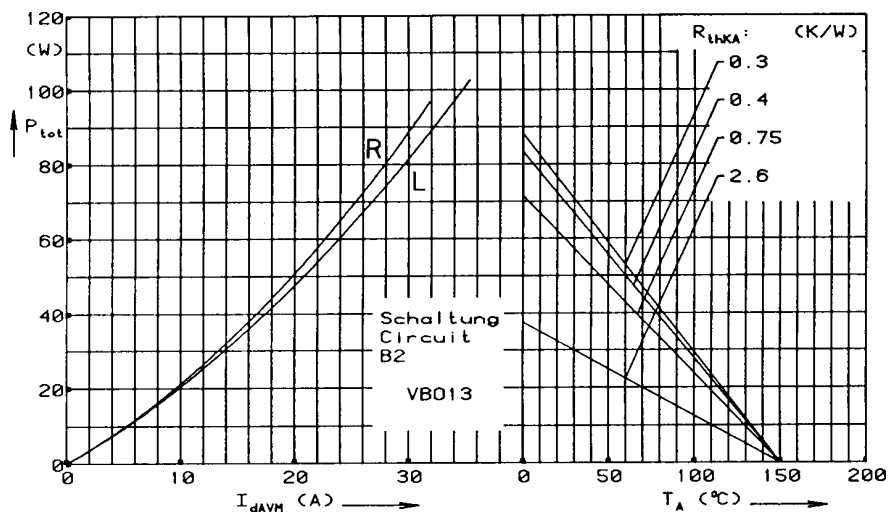


Fig. 4 Power dissipation versus direct output current and ambient temperature

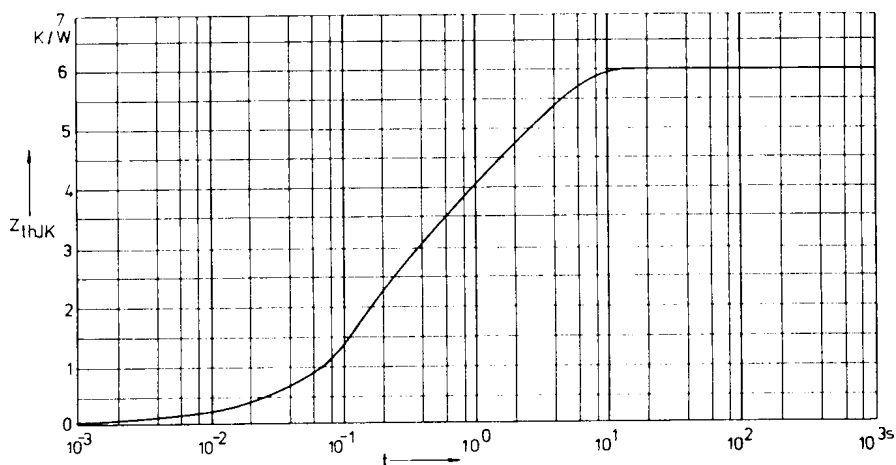


Fig. 5 Transient thermal impedance junction to heatsink per diode

Constants for Z_{thJK} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.059	0.00217
2	2.714	0.159
3	3.227	2.34