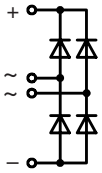
Single Phase Rectifier Bridge

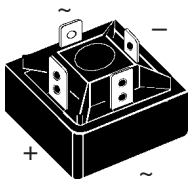
Standard and Avalanche Types

I_{dAV} = 18 A
V_{RRM} = 800-1600 V

V_{RSM} V	V_{BRmin} ① V	V_{RRM} V	Standard Types	Avalanche Types
900		800	VBO 13-08NO2	
1300	1230	1200	VBO 13-12NO2	VBO 13-12AO2
1500	1430	1400	VBO 13-14NO2	VBO 13-14AO2
1700	1630	1600	VBO 13-16NO2	VBO 13-16AO2

① For Avalanche Types only





Symbol	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;	t = 10 ms (50 Hz), sine	220	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	230	A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	180	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	190	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	240	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	220	A^2s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	160	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	150	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

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	≤	1.8	V
V_{T0}	For power-loss calculations only			0.85	V
r_T	$T_{VJ} = T_{VJM}$			17	mΩ
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.

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

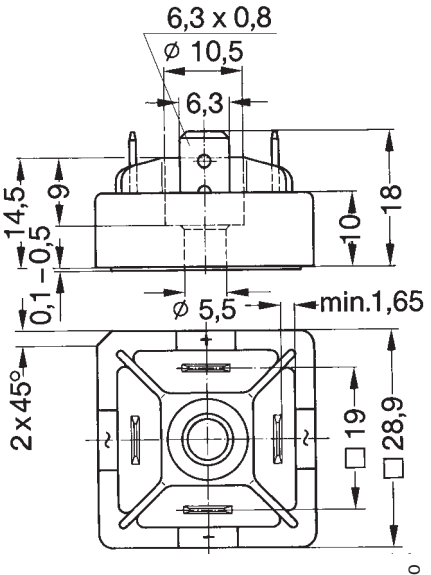
Applications

- 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

Dimensions in mm (1 mm = 0.0394")



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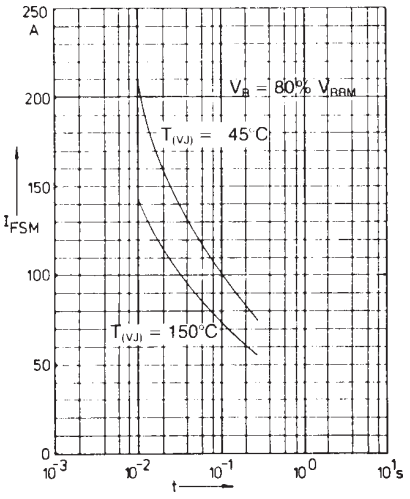

Fig. 1 Surge overload current per diode
I_{FSM}: Crest value, t: duration

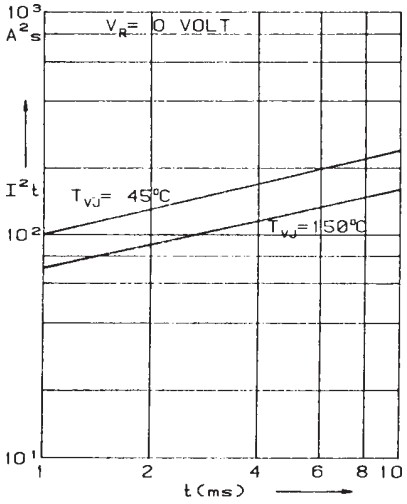

Fig. 2 I^2t versus time (1-10 ms) per diode

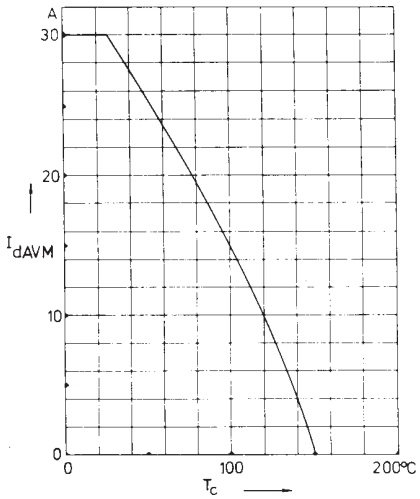

Fig. 3 Max. forward current at case temperature

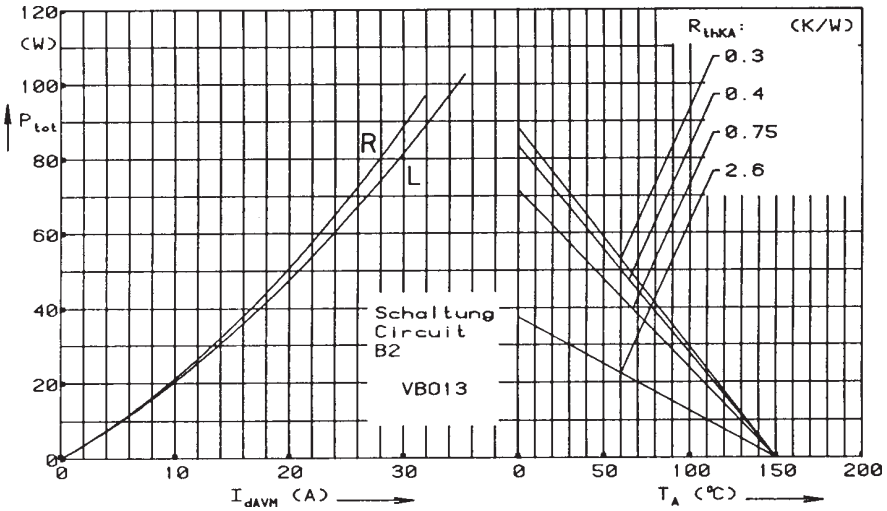

Fig. 4 Power dissipation versus direct output current and ambient temperature

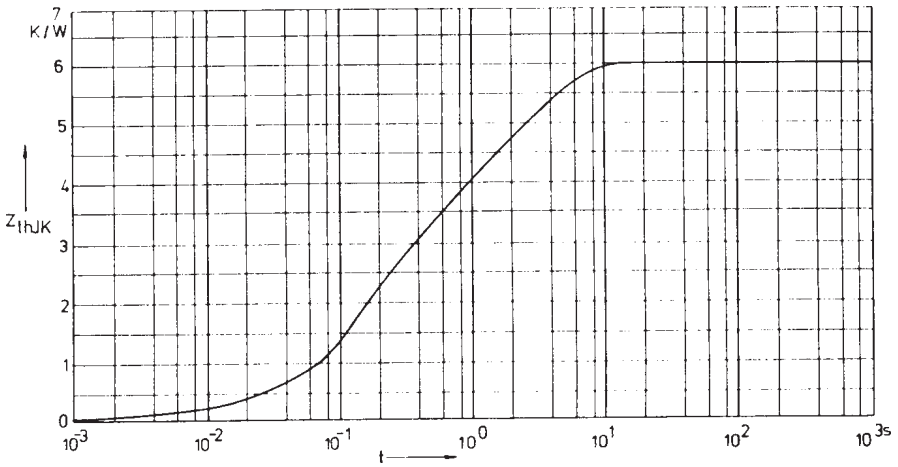

Fig. 5 Transient thermal impedance junction to heatsink per diode

Constants for Z_{thJK} calculation:

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

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