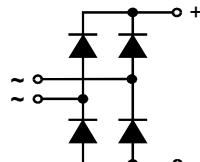


# Single Phase Rectifier Bridge

**I<sub>dAV</sub> = 40 A**  
**V<sub>RRM</sub> = 800-1600 V**

V <sub>RSM</sub>	V <sub>RRM</sub>	Standard
V	V	Types
900	800	VBO 40-08NO6
1300	1200	VBO 40-12NO6
1700	1600	VBO 40-16NO6



miniBLOC, SOT-227 B

E72873



Symbol	Test Conditions	Maximum Ratings		
I <sub>dAV</sub>	T <sub>C</sub> = 100°C (diode)	20	A	
I <sub>dAV</sub> ①	(module)	40	A	
I <sub>FSM</sub>	T <sub>VJ</sub> = 45°C; V <sub>R</sub> = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	300	A
	T <sub>VJ</sub> = T <sub>VJM</sub> V <sub>R</sub> = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	260	A
			280	A
I <sup>2</sup> t	T <sub>VJ</sub> = 45°C V <sub>R</sub> = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	450	A <sup>2</sup> s
	T <sub>VJ</sub> = T <sub>VJM</sub> V <sub>R</sub> = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	340	A <sup>2</sup> s
			330	A <sup>2</sup> s
T <sub>VJ</sub>		-40...+150	°C	
T <sub>VJM</sub>		150	°C	
T <sub>stg</sub>		-40...+125	°C	
V <sub>ISOL</sub>	50/60 Hz, RMS	I <sub>ISOL</sub> ≤ 1 mA	2500	V~
M <sub>d</sub>	Mounting torque (M4) Terminal connection torque (M4)	1.5/13 Nm/lb.in. 1.5/13 Nm/lb.in.		
Weight	typ.	30	g	

## Features

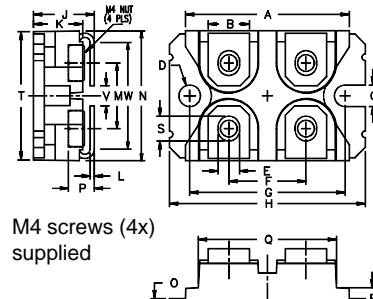
- Isolation voltage 2500 V~
- Planar passivated chips
- Low forward voltage drop

## Applications

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

## Advantages

- Easy to mount
- Space and weight savings



Symbol	Test Conditions	Characteristic Values		
I <sub>R</sub>	V <sub>R</sub> = V <sub>RRM</sub> ; T <sub>VJ</sub> = 25°C V <sub>R</sub> = V <sub>RRM</sub> ; T <sub>VJ</sub> = T <sub>VJM</sub>	≤ 0.3	mA	
		≤ 5	mA	
V <sub>F</sub>	I <sub>F</sub> = 20 A; T <sub>VJ</sub> = 25°C	≤ 1.15	V	
V <sub>To</sub>	For power-loss calculations only	0.80	V	
r <sub>T</sub>	T <sub>VJ</sub> = T <sub>VJM</sub>	13	mΩ	
R <sub>thJC</sub>	per diode; DC current	1.7	K/W	
	per module	0.42	K/W	
R <sub>thCH</sub>	per diode, DC current	typ.	0.3	K/W
	per module	typ.	0.08	K/W
d <sub>S</sub>	Creeping distance on surface	8	mm	
d <sub>A</sub>	Creepage distance in air ③	4	mm	
a	Max. allowable acceleration	50	m/s <sup>2</sup>	

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

① for resistive load at bridge output

Dim.	Millimeter Min.	Millimeter Max.	Inches Min.	Inches Max.
A	31.50	31.88	1.240	1.255
B	7.80	8.20	0.307	0.323
C	4.09	4.29	0.161	0.169
D	4.09	4.29	0.161	0.169
E	4.09	4.29	0.161	0.169
F	14.91	15.11	0.587	0.595
G	30.12	30.30	1.186	1.193
H	37.80	38.30	1.489	1.509
J	11.68	12.22	0.460	0.481
K	8.92	9.60	0.351	0.378
L	0.76	0.84	0.030	0.033
M	12.60	12.85	0.496	0.506
N	25.15	25.42	0.990	1.001
O	1.98	2.13	0.078	0.084
P	4.95	5.97	0.195	0.235
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	0.155	0.174
S	4.72	4.85	0.186	0.191
T	24.59	25.07	0.968	0.987
U	-0.05	0.1	-0.002	0.004
V	3.30	4.57	0.130	0.180
W	0.780	0.830	19.81	21.08

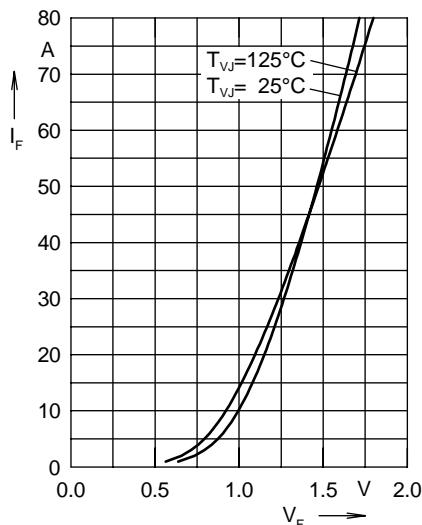


Fig. 1 Forward current versus voltage drop per diode

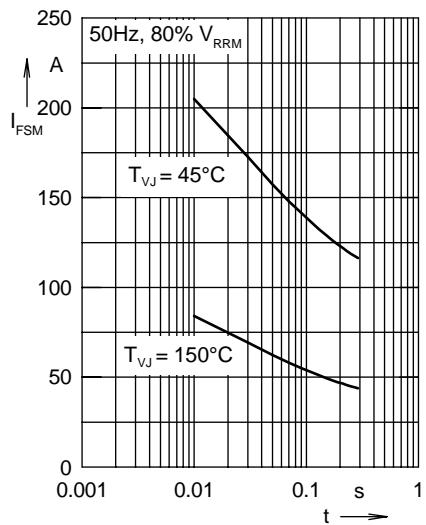


Fig. 2 Surge overload current

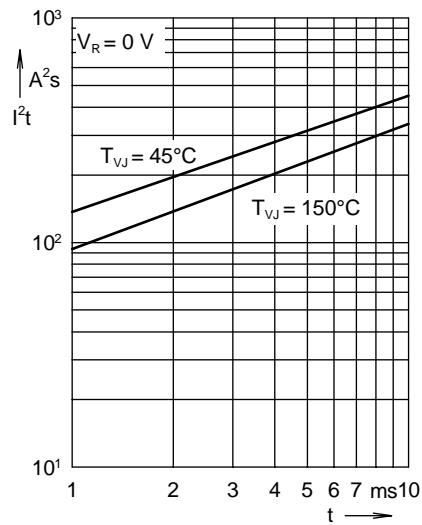


Fig. 3  $I^2t$  versus time per diode

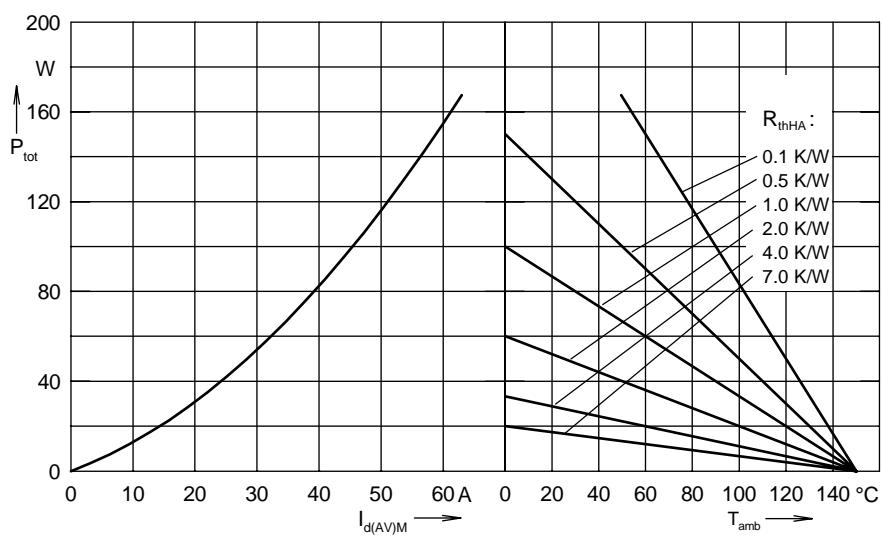


Fig. 4 Power dissipation versus direct output current and ambient temperature

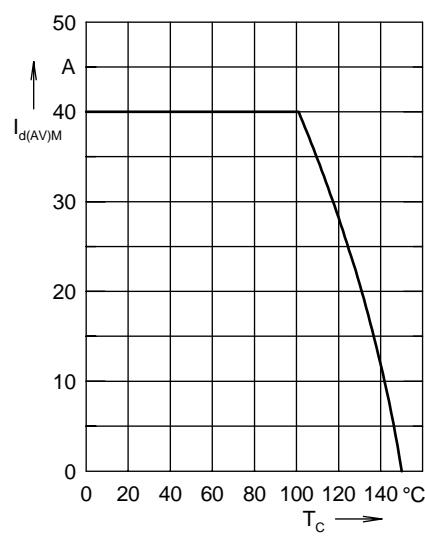


Fig. 5 Max. forward current versus case temperature

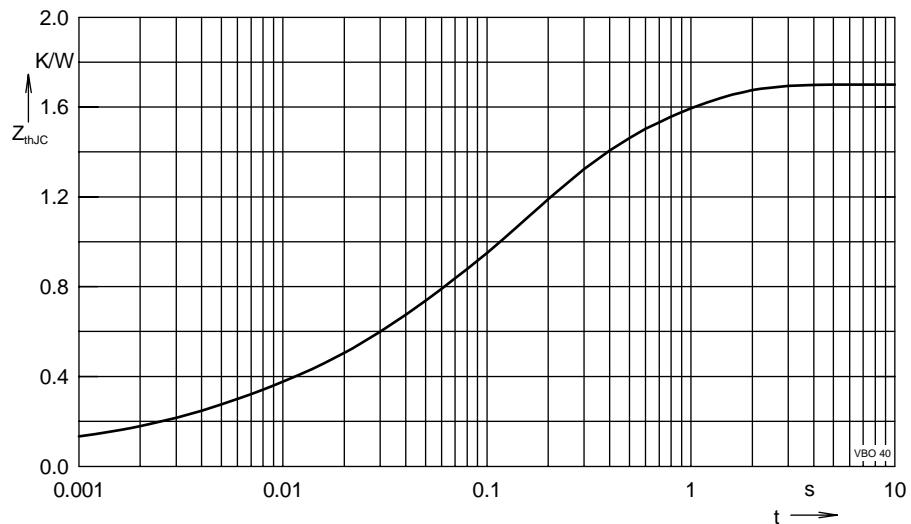


Fig. 6 Transient thermal impedance junction to case

Constants for  $Z_{thJC}$  calculation:

i	$R_{thi}$ (K/W)	$t_i$ (s)
1	0.081	0.00024
2	0.1449	0.0036
3	0.2982	0.0235
4	0.735	0.142
5	0.441	0.7