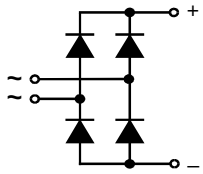
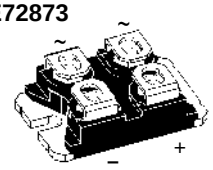
Single Phase Rectifier Bridge

I_{dAV} = 40 A
V_{RRM} = 800-1600 V

V_{RSM} V	V_{RRM} V	Standard 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_{dAV}	T_C = 100°C	(diode)	20	A
I_{dAV} ①		(module)	40	A
I_{FSM}	T_{VJ} = 45°C;	t = 10 ms (50 Hz), sine	300	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	320	A
	T_{VJ} = T_{VJM}	t = 10 ms (50 Hz), sine	260	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	280	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	450	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	430	A^2s
	T_{VJ} = T_{VJM}	t = 10 ms (50 Hz), sine	340	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	330	A^2s
T_{VJ}			-40...+150	°C
T_{VJM}			150	°C
T_{stg}			-40...+125	°C
V_{ISOL}	50/60 Hz, RMS	$I_{ISOL} \leq$ 1 mA	2500	V~
M_d	Mounting torque (M4)		1.5/13	Nm/lb.in.
	Terminal connection torque (M4)		1.5/13	Nm/lb.in.
Weight	typ.		30	g

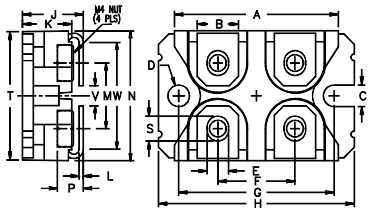
Symbol	Test Conditions		Characteristic Values		
I_R	V_R = V_{RRM};	T_{VJ} = 25°C	≤	0.3	mA
	V_R = V_{RRM};	T_{VJ} = T_{VJM}	≤	5	mA
V_F	I_F = 20 A;	T_{VJ} = 25°C	≤	1.15	V
V_{T0}	For power-loss calculations only			0.80	V
r_T	T_{VJ} = T_{VJM}			13	mΩ
R_{thJC}	per diode; DC current			1.7	K/W
	per module			0.42	K/W
R_{thCH}	per diode, DC current		typ.	0.3	K/W
	per module		typ.	0.08	K/W
d_S	Creeping distance on surface			8	mm
d_A	Creepage distance in air ③			4	mm
a	Max. allowable acceleration			50	m/s^2

Data according to IEC 60747 and refer to a single diode unless otherwise stated
① for resistive load at bridge output

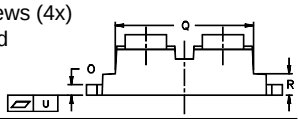
Features
- Isolation voltage 2500 V~
- Planar passivated chips
- Low forward voltage drop

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



M4 screws (4x) supplied



Dim.	Millimeter Min.	Max.	Inches Min.	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

800

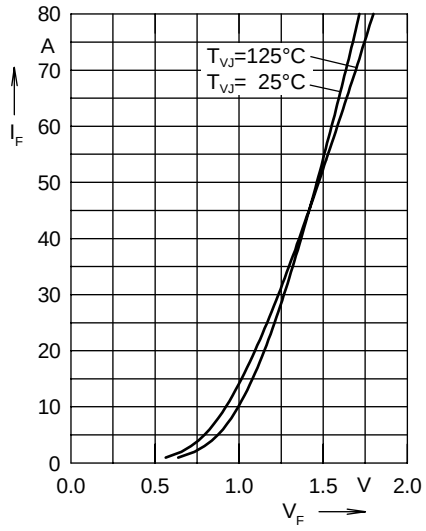


Fig. 1 Forward current versus voltage drop per diode

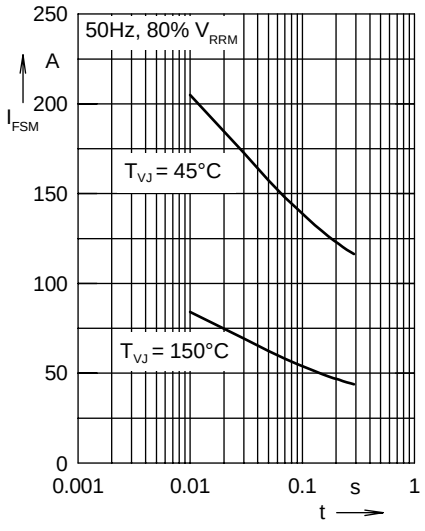


Fig. 2 Surge overload current

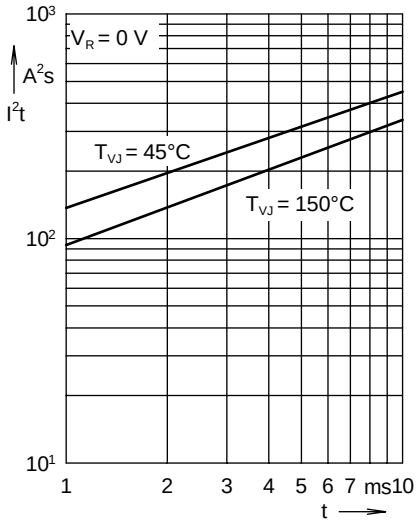


Fig. 3 I^2t versus time per diode

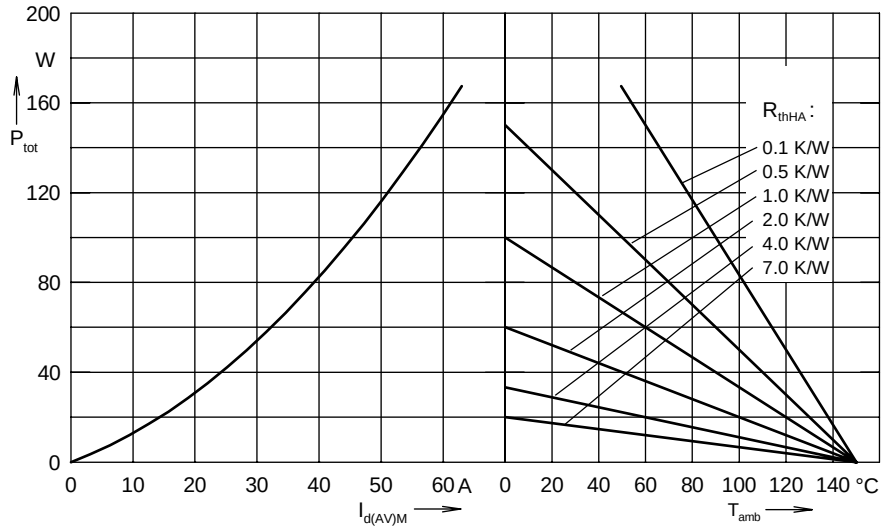


Fig. 4 Power dissipation versus direct output current and ambient temperature

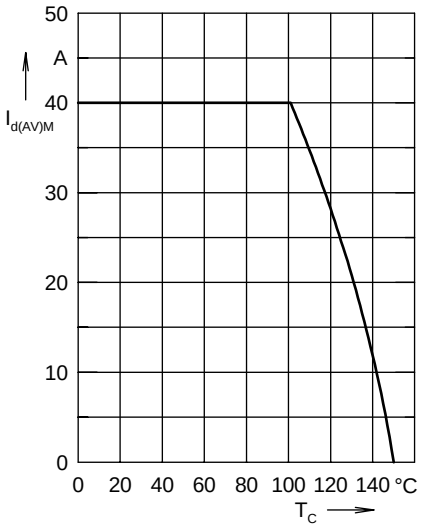


Fig. 5 Max. forward current versus case temperature

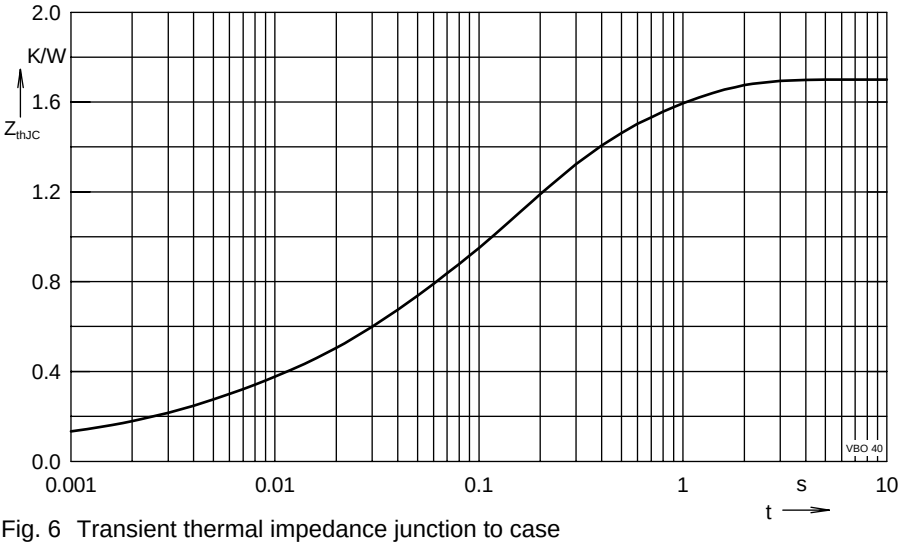


Fig. 6 Transient thermal impedance junction to case

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