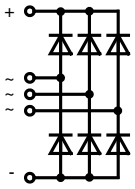
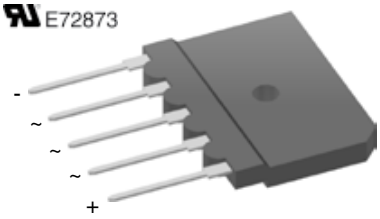
Three Phase Rectifier Bridge

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

Preliminary data

V_{RSM} V	V_{RRM} V	Standard Types	Ordering No.
900	800	GUO 40-08NO1	509523
1300	1200	GUO 40-12NO1	504430
1700	1600	GUO 40-16NO1	504437





IGBTs

Symbol	Conditions			Maximum Ratings	
I_{DAVM} ①	T_C = 85°C, sine 120°			40	A
I_{DAVM} ②	T_A = 25°C, sine 120°			6	A
I_{FSM}	T_{VJ} = 45°C;	t = 10 ms	(50 Hz), sine	370	A
	V_R = 0;	t = 8.3 ms	(60 Hz), sine	390	A
	T_{VJ} = 150°C;	t = 10 ms	(50 Hz), sine	320	A
	V_R = 0;	t = 8.3 ms	(60 Hz), sine	340	A
I^2t	T_{VJ} = 45°C;	t = 10 ms	(50 Hz), sine	680	A^2s
	V_R = 0;	t = 8.3 ms	(60 Hz), sine	640	A^2s
	T_{VJ} = 150°C;	t = 10 ms	(50 Hz), sine	510	A^2s
	V_R = 0;	t = 8.3 ms	(60 Hz), sine	470	A^2s
P_{tot}				35	W
T_{VJ}				-40 ... 175	°C
T_{OP}				150	°C
T_{stg}				-40 ... 150	°C
V_{ISOL}	RMS; 1 s			2500	V
M_d	mounting torque (M4)			0.8-1.2	Nm
Weight	typ.			9	g

Symbol	Conditions	Characteristic Values min.	max.	
I_R	$V_R = V_{RRM}$; T_{VJ} = 25°C		0.05	mA
	$V_R = V_{RRM}$; T_{VJ} = 150°C		1.5	mA
V_F	I_F = 12.5 A; T_{VJ} = 25°C		1.1	V
V_{T0}	for power-loss calculations only		0.86	V
r_t	T_{VJ} = 150°C		12.9	mΩ
R_{thJC}	per diode, DC current		4.3	K/W
	per module		0.7	K/W
R_{thJA}	per diode, DC current		50	K/W
	per module		8.3	K/W
d_{S1}, d_{A1}	creeping/Striking distance leads to heatsink	9.5		mm
	creeping/Striking distance lead to lead	5.5		mm
a	max. allowable acceleration		50	m/s^2

Data according to IEC 60747 and refer to a single rectifier unless otherwise stated
I_{DAVM} = bridge output current for resistive load ① mounted on heatsink; ② without heatsink

Features

- Low forward voltage drop
- Planar passivated chips
- Epoxy meets UL 94V-0

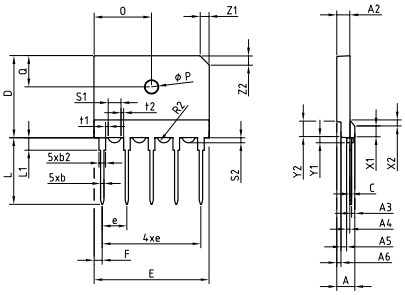
Applications

- 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

Dimensions in mm (1 mm = 0.0394")



Size / mm	min	typ	max
A		5.50	
A2		4.00	
A3		1.00	
A4		1.00	
A5		1.70	
A6		1.30	
b		1.00	
b2		2.00	
C		0.50	
D		25.00	
E		35.00	
e		7.50	
F		2.50	
L		20.24	
L1		3.74	
O		17.50	
ØP		4.00	
Q		9.50	
R (radius)		1.77	
s1		3.50	
s2		1.50	
t1		1.00	
t2		1.00	
x1		3.59	
x2		2.01	
y1		1.71	
y2		4.73	
z1		2.73	

IXYS reserves the right to change limits, test conditions and dimensions.

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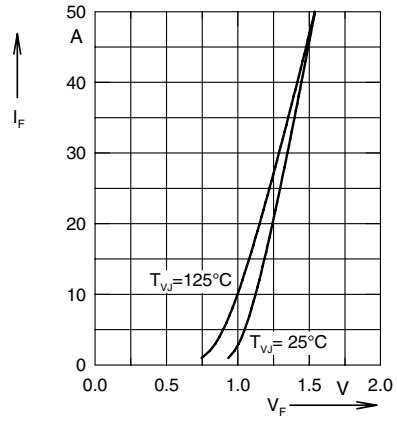

Fig. 1 Forward current versus voltage drop per diode

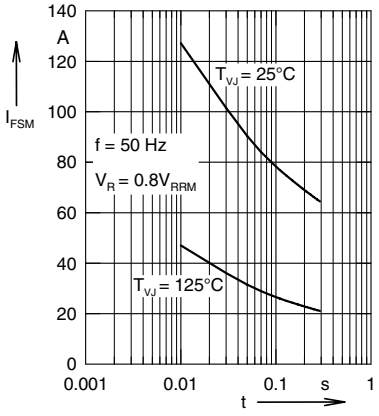

Fig. 2 Surge overload current

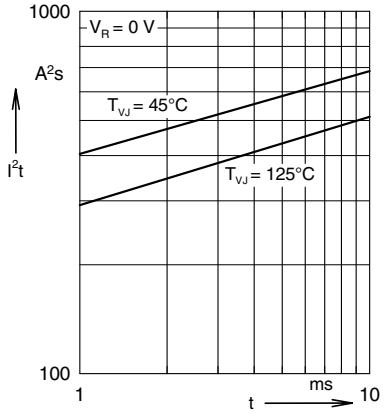

Fig. 3 I^2t versus time per diode

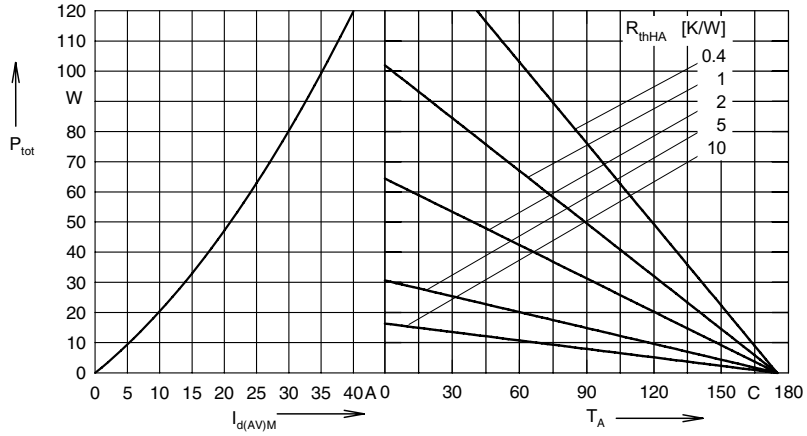

Fig. 4 Power dissipation versus direct output current and ambient temperature, sine 180°

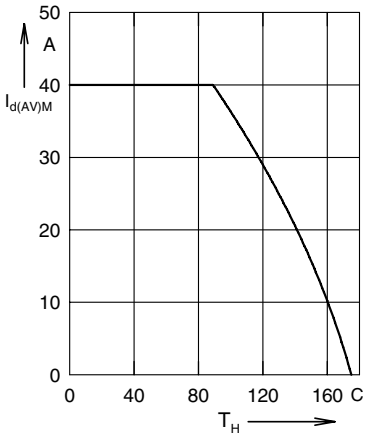

Fig. 5 Max. forward current vs. case temperature

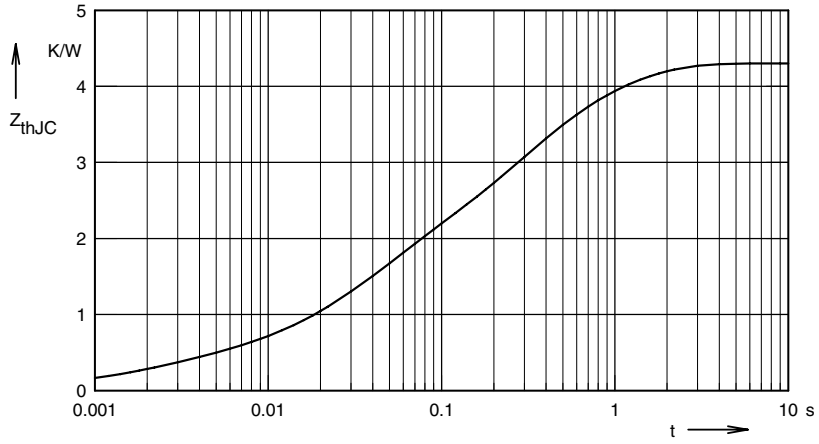

Fig. 6 Transient thermal impedance junction to case

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.302	0.002
2	1.252	0.032
3	1.582	0.227
4	1.164	0.82