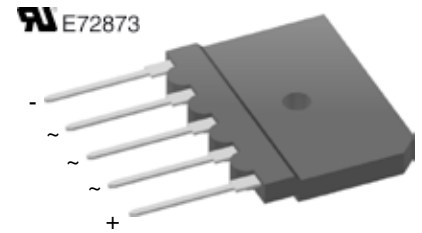
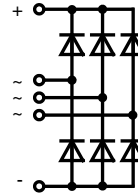


# Three Phase Rectifier Bridge

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

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		Maximum Ratings	
Symbol	Conditions		
$I_{DAVM} \text{ ①}$	$T_C = 85^\circ\text{C}$ , sine 120°	40	A
$I_{DAVM} \text{ ②}$	$T_A = 25^\circ\text{C}$ , sine 120°	6	A
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}$ ; $t = 10 \text{ ms}$ (50 Hz), sine	370	A
	$V_R = 0$ ; $t = 8.3 \text{ ms}$ (60 Hz), sine	390	A
	$T_{VJ} = 150^\circ\text{C}$ ; $t = 10 \text{ ms}$ (50 Hz), sine	320	A
	$V_R = 0$ ; $t = 8.3 \text{ ms}$ (60 Hz), sine	340	A
$I^2t$	$T_{VJ} = 45^\circ\text{C}$ ; $t = 10 \text{ ms}$ (50 Hz), sine	680	A <sup>2</sup> s
	$V_R = 0$ ; $t = 8.3 \text{ ms}$ (60 Hz), sine	640	A <sup>2</sup> s
	$T_{VJ} = 150^\circ\text{C}$ ; $t = 10 \text{ ms}$ (50 Hz), sine	510	A <sup>2</sup> s
	$V_R = 0$ ; $t = 8.3 \text{ ms}$ (60 Hz), sine	470	A <sup>2</sup> s
$P_{tot}$		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
<b>Weight</b>	typ.	9	g

### Features

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

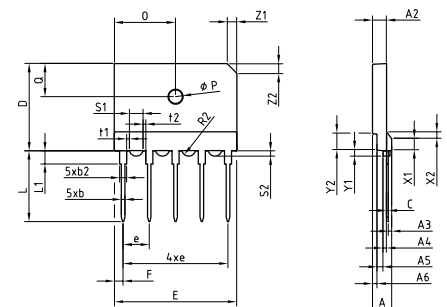
### Applications

- 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	

Symbol	Conditions	Characteristic Values	
		min.	max.
$I_R$	$V_R = V_{RRM}$ ; $T_{VJ} = 25^\circ\text{C}$		0.05 mA
	$V_R = V_{RRM}$ ; $T_{VJ} = 150^\circ\text{C}$		1.5 mA
$V_F$	$I_F = 12.5 \text{ A}$ ; $T_{VJ} = 25^\circ\text{C}$		1.1 V
$V_{T0}$	for power-loss calculations only		0.86 V
$r_t$	$T_{VJ} = 150^\circ\text{C}$		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
<b>a</b>	max. allowable acceleration		50 m/s <sup>2</sup>

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

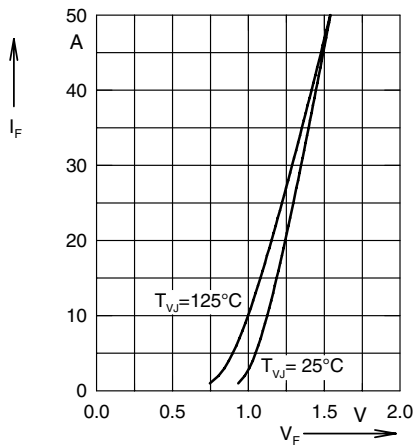


Fig. 1 Forward current versus voltage drop per diode

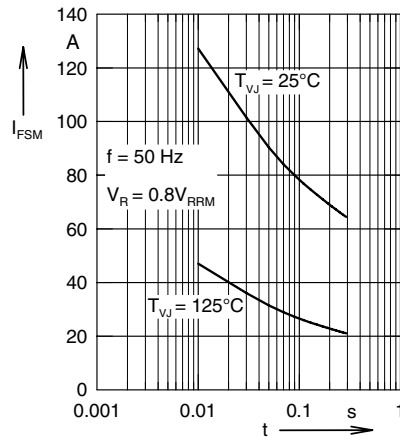


Fig. 2 Surge overload current

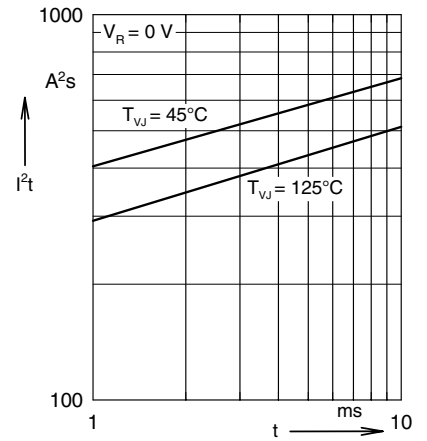


Fig. 3  $I^2t$  versus time per diode

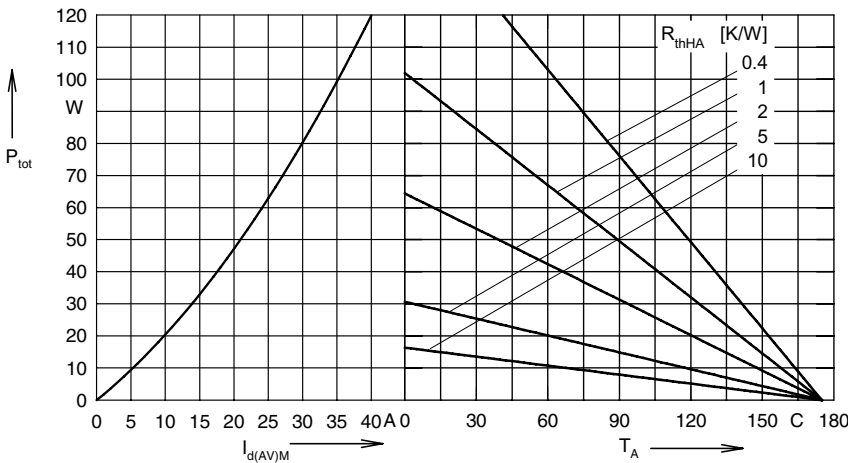


Fig. 4 Power dissipation versus direct output current and ambient temperature, sine 180°

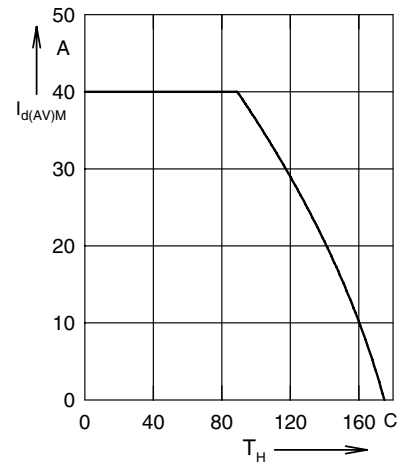


Fig. 5 Max. forward current vs. case temperature

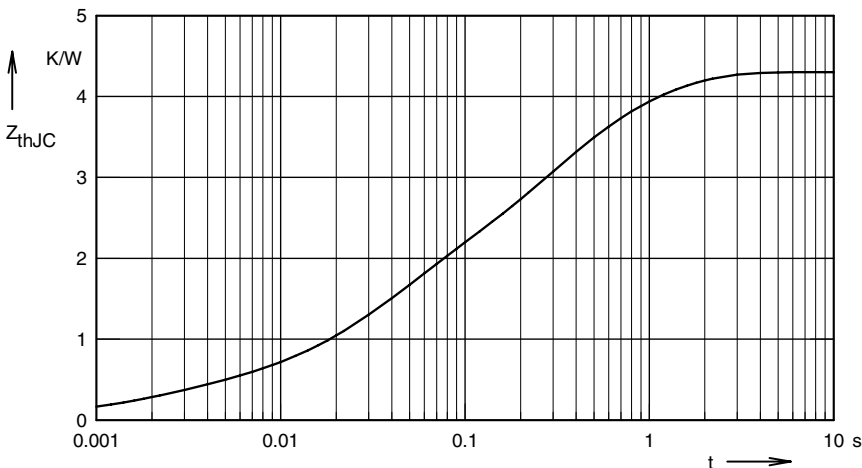


Fig. 6 Transient thermal impedance junction to case

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