

Three Phase Rectifier Bridge

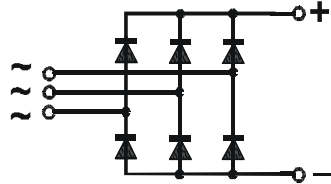
PSD 82

$$I_{dAV} = 88 \text{ A}$$

$$V_{RRM} = 800-1800 \text{ V}$$

Preliminary Data Sheet

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type
800	800	PSD 82/08
1200	1200	PSD 82/12
1400	1400	PSD 82/14
1600	1600	PSD 82/16
1800	1800	PSD 82/18



Symbol	Test Conditions	Maximum Ratings
I_{dAVM}	$T_C = 110 \text{ }^\circ\text{C}$, (per module)	88 A
I_{FSM}	$T_{VJ} = 45 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	750 A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	820 A
	$T_{VJ} = T_{VJM}$ t = 10 ms (50 Hz), sine	670 A
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	740 A
$\int i^2 dt$	$T_{VJ} = 45 \text{ }^\circ\text{C}$ t = 10 ms (50 Hz), sine	2800 A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	2800 A ² s
	$T_{VJ} = T_{VJM}$ t = 10 ms (50 Hz), sine	2250 A ² s
	$V_R = 0$ t = 8.3 ms (60 Hz), sine	2250 A ² s
T_{VJ}		-40... + 150 $^\circ\text{C}$
T_{VJM}		150 $^\circ\text{C}$
T_{stg}		-40... + 125 $^\circ\text{C}$
V_{ISOL}	50/60 Hz, RMS t = 1 min	2500 V~
	$I_{ISOL} \leq 1 \text{ mA}$ t = 1 s	3000 V~
M_d	Mounting torque (M5)	5 Nm
	Terminal connection torque (M5)	5 Nm
Weight	typ.	160 g

Features

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- Package with screw terminals
- Isolation voltage 3000 V~
- Planar glass passivated chips
- Blocking voltage up to 1800 V
- Low forward voltage drop
- UL registered E 148688

Applications

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

Advantages

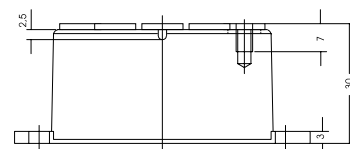
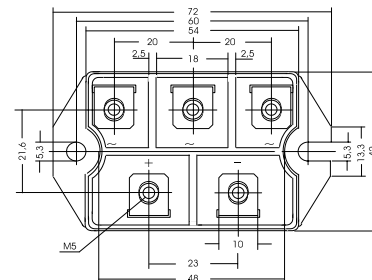
- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability

Symbol	Test Conditions	Characteristic Value
I_R	$V_R = V_{RRM}$, $T_{VJ} = 25 \text{ }^\circ\text{C}$	$\leq 0.3 \text{ mA}$
	$V_R = V_{RRM}$, $T_{VJ} = T_{VJM}$	$\leq 5 \text{ mA}$
V_F	$I_F = 150 \text{ A}$, $T_{VJ} = 25 \text{ }^\circ\text{C}$	$\leq 1.6 \text{ V}$
V_{TO}	For power-loss calculations only	0.8 V
r_T		5 m Ω
R_{thJC}	per diode; DC current	1.1 K/W
	per module	0.183 K/W
R_{thJK}	per diode; DC current	1.52 K/W
	per module	0.253 K/W
d_s	Creeping distance on surface	10.0 mm
d_A	Creeping distance in air	9.4 mm
a	Max. allowable acceleration	50 m/s ²

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

Package style and outline

Dimensions in mm (1mm = 0.0394")



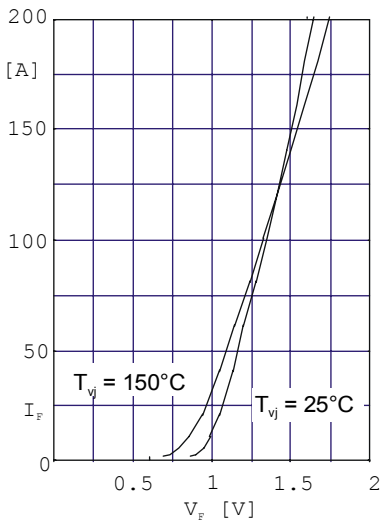


Fig. 1 Forward current versus voltage drop per diode

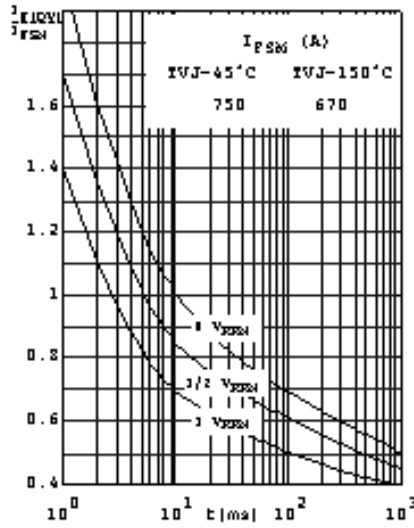


Fig. 2 Surge overload current per diode I_{FSM} : Crest value. t : duration

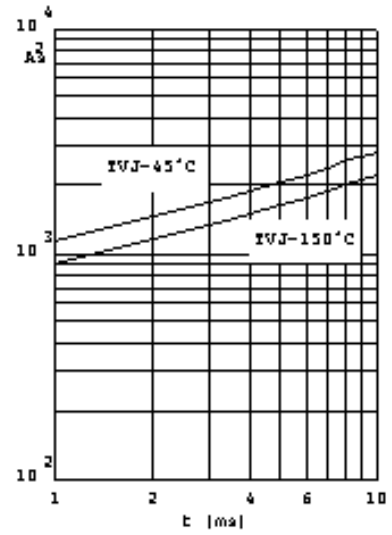


Fig. 3 $\int i^2 dt$ versus time (1-10ms) per diode (or thyristor)

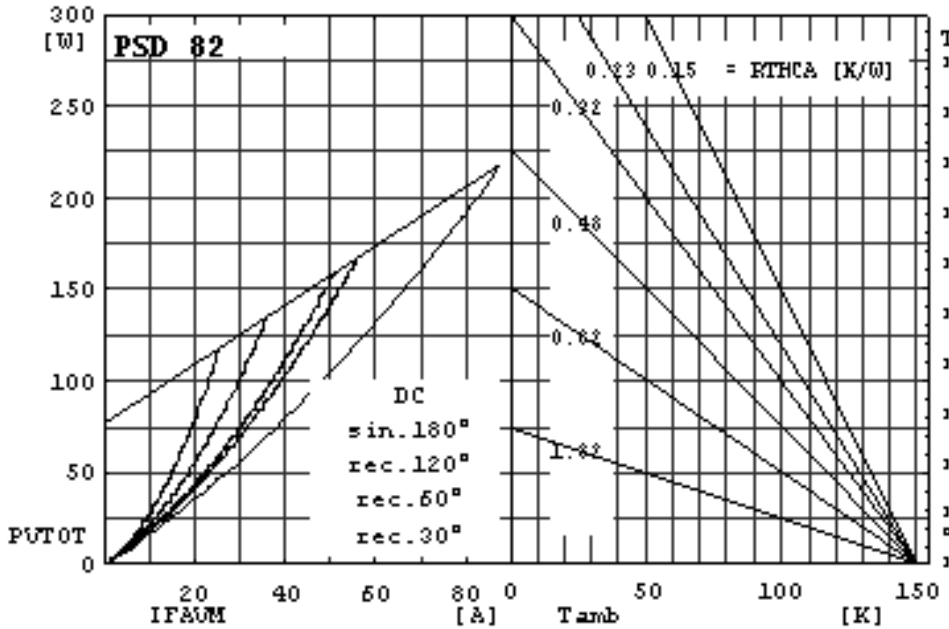


Fig. 4 Power dissipation versus direct output current and ambient temperature

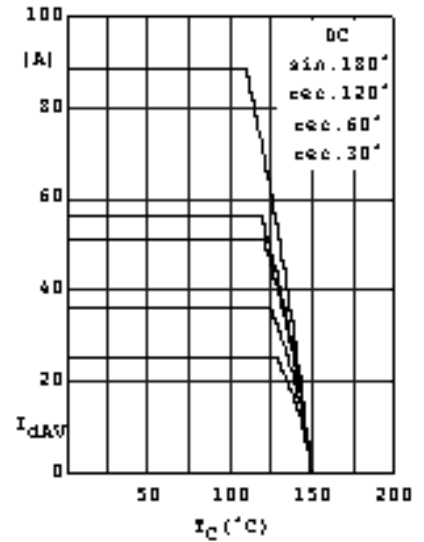


Fig. 5 Maximum forward current at case temperature

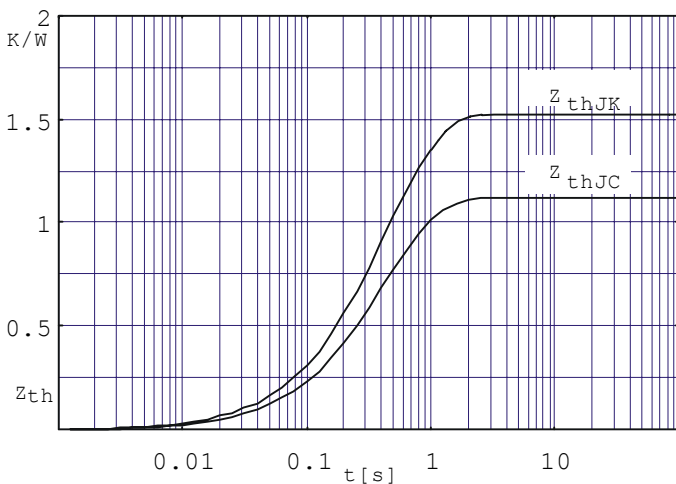


Fig. 6 Transient thermal impedance per diode (or thyristor), calculated