

Three Phase Rectifier Bridges

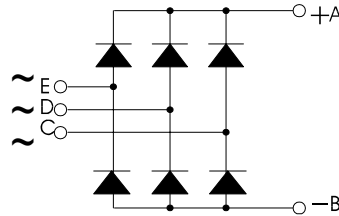
PSD 41

**I_{dAVM}
 V_{RRM}**

**= 70 A
= 800-1800 V**

Preliminary Data Sheet

V_{RSM} V	V_{RRM} V	Type
800	800	PSD 41/08
1200	1200	PSD 41/12
1400	1400	PSD 41/14
1600	1600	PSD 41/16
1800	1800	PSD 41/18



Symbol	Test Conditions		Maximum Ratings	
I_{dAVM}	$T_C = 100^\circ\text{C}$, module		70	A
I_{FSM}	$T_{VJ} = 45^\circ\text{C}$	$t = 10 \text{ ms}$ (50 Hz), sine	550	A
	$V_R = 0$	$t = 8.3 \text{ ms}$ (60 Hz), sine	600	A
	$T_{VJ} = T_{VJM}$	$t = 10 \text{ ms}$ (50 Hz), sine	500	A
	$V_R = 0$	$t = 8.3 \text{ ms}$ (60 Hz), sine	550	A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$	$t = 10 \text{ ms}$ (50 Hz), sine	1520	$\text{A}^2 \text{ s}$
	$V_R = 0$	$t = 8.3 \text{ ms}$ (60 Hz), sine	1520	$\text{A}^2 \text{ s}$
	$T_{VJ} = T_{VJM}$	$t = 10 \text{ ms}$ (50 Hz), sine	1250	$\text{A}^2 \text{ s}$
	$V_R = 0$	$t = 8.3 \text{ ms}$ (60 Hz), sine	1250	$\text{A}^2 \text{ s}$
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	$t = 1 \text{ min}$	2500	V ~
	$I_{ISOL} \leq 1 \text{ mA}$	$t = 1 \text{ s}$	3000	V ~
M_d	Mounting torque	(M5)	5	Nm
Weight	typ.		100	g

Features

- Package with fast-on terminals
- Isolation voltage 3000 V~
- Planar glasspassivated chips
- Blocking voltage up to 1800 V
- Low forward voltage drop
- UL registered E 148688

Applications

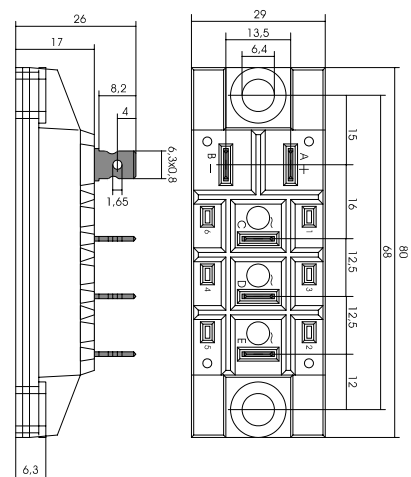
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

Advantages

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

Package, style and outline

Dimensions in mm (1mm = 0.0394")



Symbol	Test Conditions		Characteristic Value	
I_R	$V_R = V_{RRM}$	$T_{VJ} = 25^\circ\text{C}$	$\leq$	0.5 mA
	$V_R = V_{RRM}$	$T_{VJ} = T_{VJM}$	$\leq$	10 mA
V_F	$I_F = 150 \text{ A}$	$T_{VJ} = 25^\circ\text{C}$	$\leq$	1.7 V
V_{TO}	For power-loss calculations only			0.8 V
r_T	$T_{VJ} = T_{VJM}$			8 m Ω
R_{thJC}	per diode; DC current			1.45 K/W
	per module			0.242 K/W
R_{thJK}	per diode; DC current			1.90 K/W
	per module			0.317 K/W
d_S	Creeping distance on surface			16.1 mm
d_A	Creeping distance in air			7.5 mm
a	Max. allowable acceleration			50 m/s ²

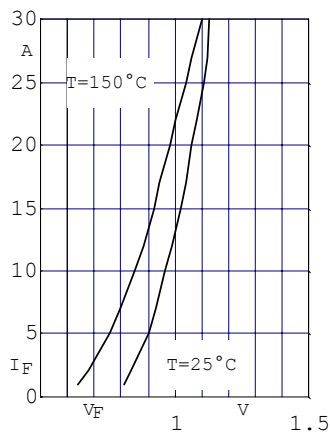


Fig. 1 Forward current versus voltage drop per diode

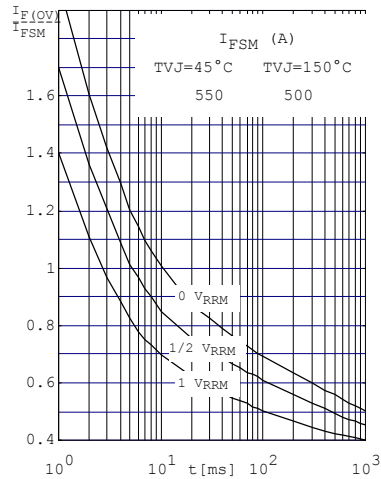


Fig. 2 Surge overload current per diode I_{FSM} : Crest value.
t: duration

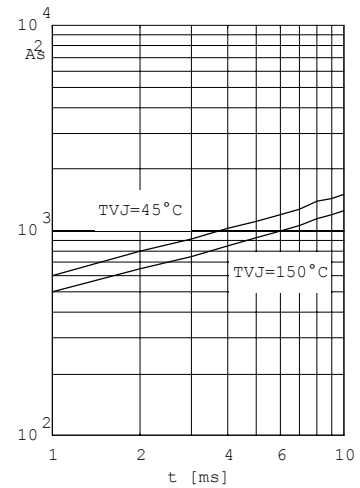


Fig. 3 $\int i^2 dt$ versus time (1-10ms) per diode (or thyristor)

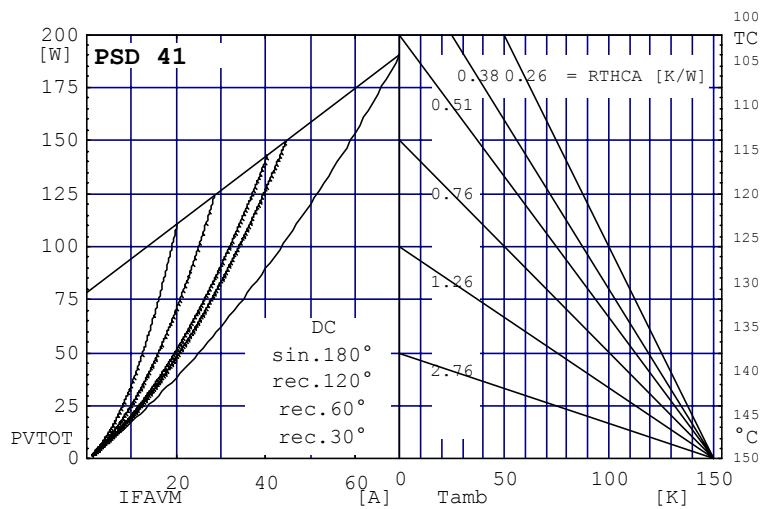


Fig. 4 Power dissipation versus direct output current and ambient temperature

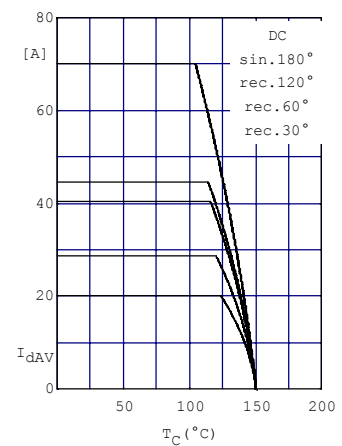


Fig. 5 Maximum forward current at case temperature

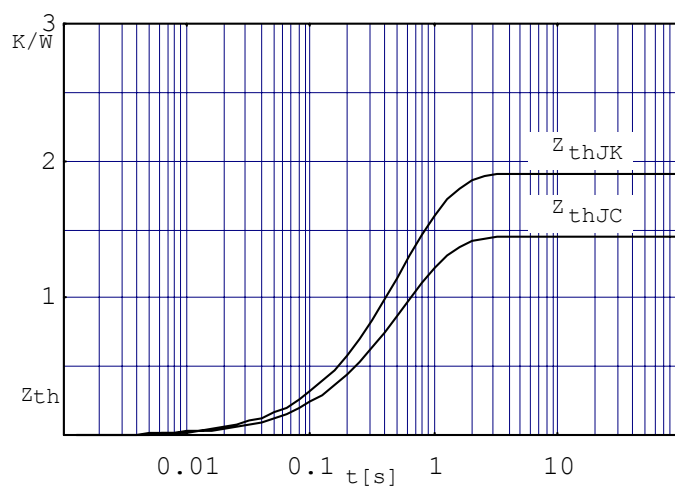


Fig. 6 Transient thermal impedance per diode (or thyristor), calculated