POWERSEM

Three Phase Rectifier Bridges

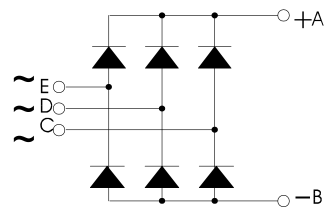
PSD 51

I_{dAVM} = 85 A

V_{RRM} = 800-1800 V

Preliminary Data Sheet

V_{RSM} V	V_{RRM} V	Type
800	800	PSD 51/08
1200	1200	PSD 51/12
1400	1400	PSD 51/14
1600	1600	PSD 51/16
1800	1800	PSD 51/18



Symbol	Test Conditions			Maximum Ratings	
I_{dAVM}	T_C = 100°C, module			85	A
I_{FSM}	T_{VJ} = 45°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	600	A
	V_R = 0	t = 8.3 ms	(60 Hz), sine	700	A
$\int i^2 dt$	T_{VJ} = 45°C	t = 10 ms	(50 Hz), sine	2800	A^2 s
	V_R = 0	t = 8.3 ms	(60 Hz), sine	2820	A^2 s
	T_{VJ} = T_{VJM}	t = 10 ms	(50 Hz), sine	2200	A^2 s
	V_R = 0	t = 8.3 ms	(60 Hz), sine	2250	A^2 s
T_{VJ}				-40 ... + 150	°C
T_{VJM}				150	°C
T_{stg}				-40 ... + 125	°C
V_{ISOL}	50/60 HZ, RMS	t = 1 min		2500	V ~
	$I_{ISOL} \leq$ 1 mA	t = 1 s		3000	V ~
M_d	Mounting torque		(M5)	5	Nm
Weight	typ.			100	g

Symbol	Test Conditions		Characteristic Value		
I_R	V_R = V_{RRM}	T_{VJ} = 25°C	≤	0.5	mA
	V_R = V_{RRM}	T_{VJ} = T_{VJM}	≤	10	mA
V_F	I_F = 150 A	T_{VJ} = 25°C	≤	1.6	V
V_{TO}	For power-loss calculations only			0.8	V
r_T	T_{VJ} = T_{VJM}			6	mΩ
R_{thJC}	per diode; DC current			1.3	K/W
	per module			0.22	K/W
R_{thJK}	per diode; DC current			1.6	K/W
	per module			0.27	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

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

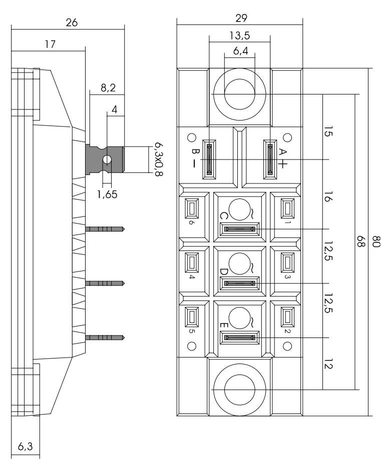
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

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")



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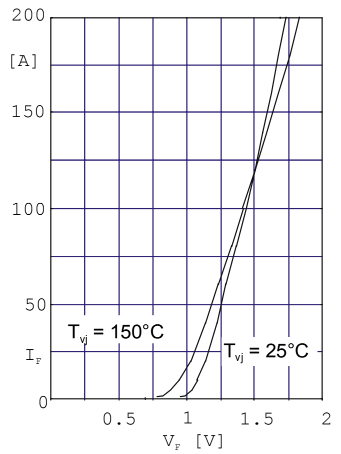

Fig. 1 Forward current versus voltage drop per diode

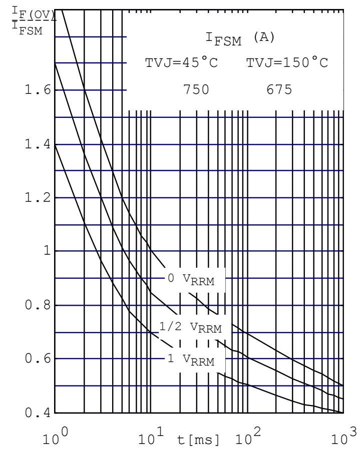

Fig. 2 Surge overload current per diode I_{FSM}: Crest value. t: duration

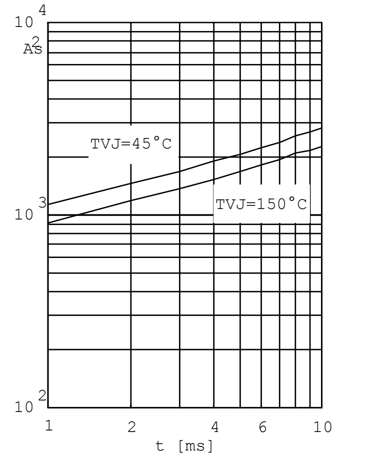

Fig. 3 ∫i^2dt versus time (1-10ms) per diode (or thyristor)

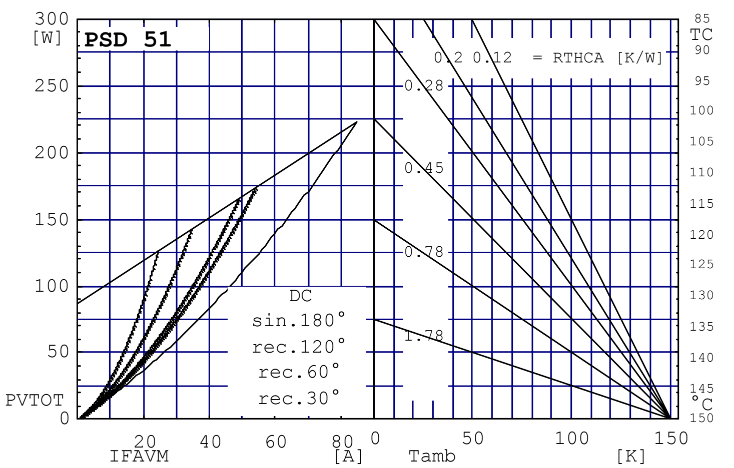

Fig. 4 Power dissipation versus direct output current and ambient temperature

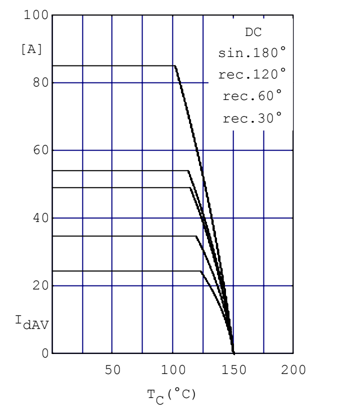

Fig.5 Maximum forward current at case temperature

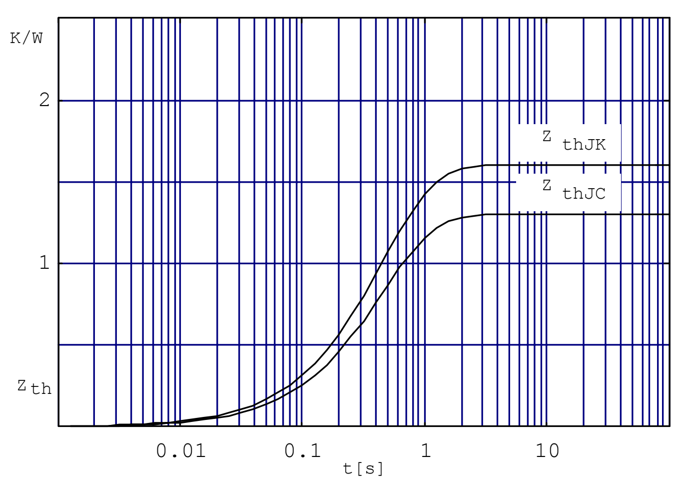

Fig. 6 Transient thermal impedance per diode (or thyristor), calculated

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