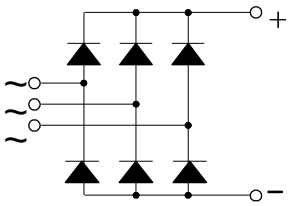
Three Phase Rectifier Bridge

PSD 55T

Preliminary Data Sheet

I_{dAVM} = 58 A
V_{RRM} = 800 V to 2000 V

V_{RSM} V	V_{RRM} V	Type Number
800	800	PSD 55T/08
1200	1200	PSD 55T/12
1400	1400	PSD 55T/14
1600	1600	PSD 55T/16
1800	1800	PSD 55T/18
2000	2000	PSD 55T/20



Symbol	Test Conditions			Maximum Ratings	
I_{dAVM}	T_c = 85°C per module			58	A
I_{FSM}	T_{vj} = 45°C, V_R = 0 V	t = 10 ms	50 Hz, sine	750	A
		t = 8.3 ms	60 Hz, sine	820	A
	T_{vj} = T_{vjm}, V_R = 0 V	t = 10 ms	50 Hz, sine	670	A
		t = 8.3 ms	60 Hz, sine	740	A
$\int i^2dt$	T_{vj} = 45°C, V_R = 0 V	t = 10 ms	50 Hz, sine	2800	A^2s
		t = 8.3 ms	60 Hz, sine	2820	A^2s
	T_{vj} = T_{vjm}, V_R = 0 V	t = 10 ms	50 Hz, sine	2250	A^2s
		t = 8.3 ms	60 Hz, sine	2300	A^2s
T_{vj}				-40 ... +150	°C
T_{vjm}				150	°C
T_{stg}				-40 ... +150	°C
V_{isol}	50/60 Hz, RMS	t = 1 min		2500	V~
	I_{isol} ≤ 1mA	t = 1 s		3000	V~
M_d	Mounting torque		(M5)	5	Nm
	Terminal connection torque		(M5)	3	Nm
Weight	typ.			205	g

Symbol	Test Conditions			Characteristic Value	
I_R	V_R = V_{RRM}	T_{vj} = 25°C	≤	0.3	mA
	V_R = V_{RRM}	T_{vj} = T_{vjm}	≤	10.0	mA
V_F	I_F = 150 A	T_{vj} = 25°C	≤	1.6	V
V_{TO}	For power-loss calculations only			0.85	V
r_T	T_{vj} = T_{vjm}			8	mΩ
$R_{th(j-c)}$	per diode; DC current			2.7	K/W
	per module			0.45	K/W
$R_{th(j-s)}$	per diode; DC current			3.06	K/W
	per module			0.51	K/W
d_S	Creeping distance on surface			7.8	mm
d_A	Creeping distance on air			7.8	mm
a	Maximum allowable acceleration			50	m/s^2

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

Features

- Package with screw terminals
- Isolation voltage 3000 V~
- Mesa glass-passivated chips
- Blocking voltage up to 2000 V
- Low forward voltage drop
- UL registered E 148688

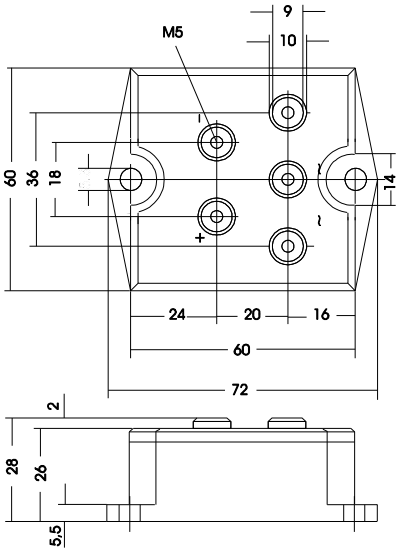
Applications

- 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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info@powersem.de

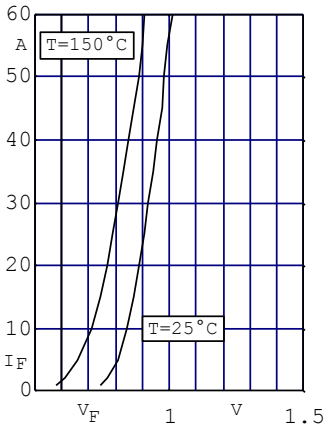

Fig. 1 Forward current versus voltage drop per diode

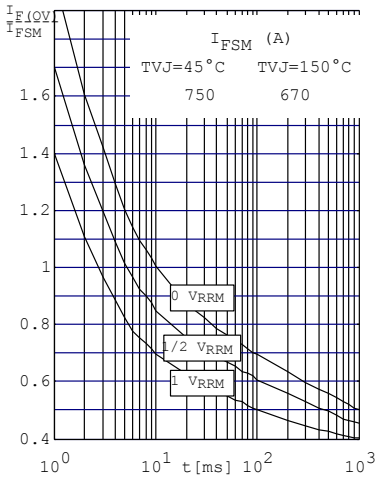

Fig. 2 Surge overload current per diode I_{FSM} : Crest value. t: duration

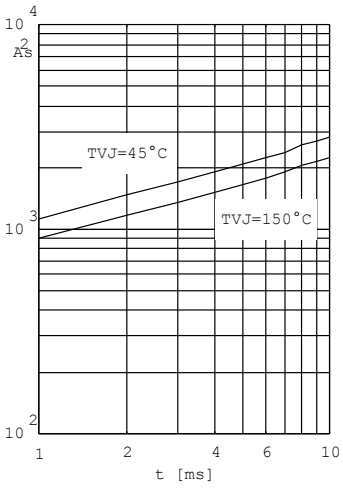

Fig. 3 $\int i^2 dt$ versus time (1-10ms) per diode (or thyristor)

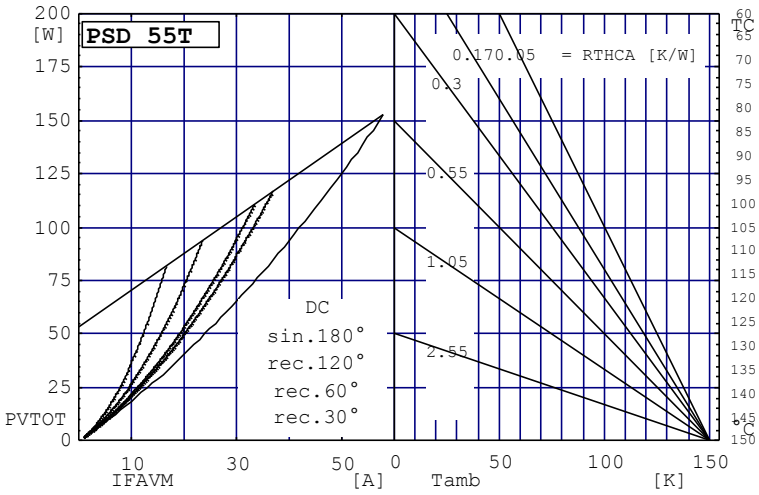

Fig. 4 Power dissipation versus direct output current and ambient temperature

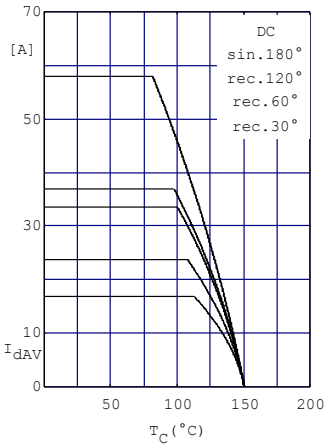

Fig.5 Maximum forward current at case temperature

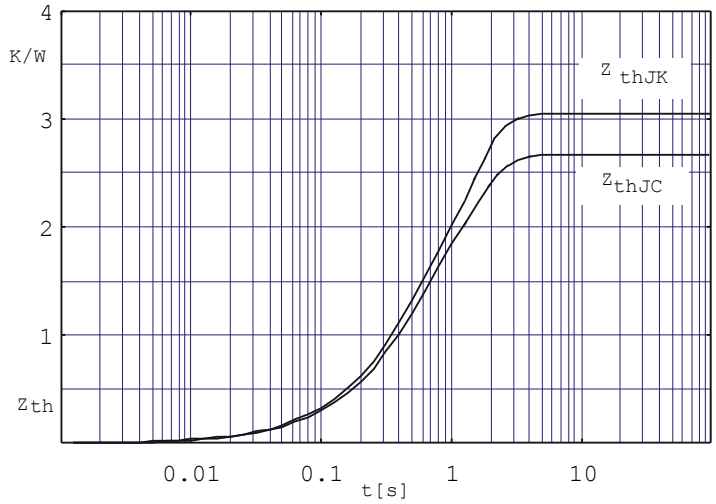

Fig. 6 Transient thermal impedance per diode (or thyristor)