

Three Phase Rectifier Bridge

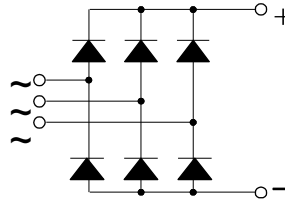
PSD 55T

Preliminary Data Sheet

$$I_{dAVM} = 58 \text{ A}$$

$$V_{RRM} = 800 \text{ V to } 2000 \text{ V}$$

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}	$T_c = 85^\circ\text{C}$ per module	58 A
I_{FSM}	$T_{vj} = 45^\circ\text{C}, V_R = 0 \text{ V}$	$t = 10 \text{ ms}$ 50 Hz, sine 750 A
		$t = 8.3 \text{ ms}$ 60 Hz, sine 820 A
	$T_{vj} = T_{vj\text{m}}, V_R = 0 \text{ V}$	$t = 10 \text{ ms}$ 50 Hz, sine 670 A
		$t = 8.3 \text{ ms}$ 60 Hz, sine 740 A
$\int i^2 dt$	$T_{vj} = 45^\circ\text{C}, V_R = 0 \text{ V}$	$t = 10 \text{ ms}$ 50 Hz, sine 2800 A ² s
		$t = 8.3 \text{ ms}$ 60 Hz, sine 2820 A ² s
	$T_{vj} = T_{vj\text{m}}, V_R = 0 \text{ V}$	$t = 10 \text{ ms}$ 50 Hz, sine 2250 A ² s
		$t = 8.3 \text{ ms}$ 60 Hz, sine 2300 A ² s
T_{vj}		-40 ... +150 °C
$T_{vj\text{m}}$		150 °C
T_{stg}		-40 ... +150 °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
	Terminal connection torque	(M5) 3 Nm
Weight	typ.	205 g

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

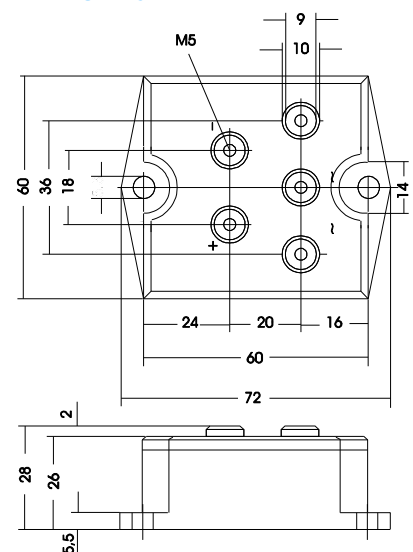
Applications

- 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")

Symbol	Test Conditions	Characteristic Value
I_R	$V_R = V_{RRM}$ $T_{vj} = 25^\circ\text{C}$	$\leq 0.3 \text{ mA}$
	$V_R = V_{RRM}$ $T_{vj} = T_{vj\text{m}}$	$\leq 10.0 \text{ mA}$
V_F	$I_F = 150 \text{ A}$ $T_{vj} = 25^\circ\text{C}$	$\leq 1.6 \text{ V}$
V_{TO}	For power-loss calculations only	0.85 V
r_T	$T_{vj} = T_{vj\text{m}}$	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

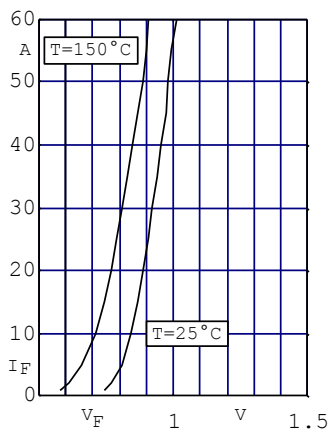


Fig. 1 Forward current versus voltage drop per diode

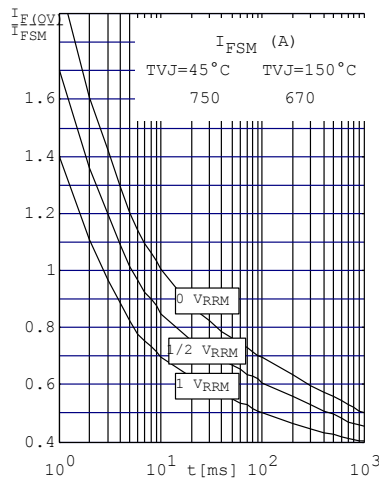


Fig. 2 Surge overload current per diode I_{FSM} : Crest value. t : duration

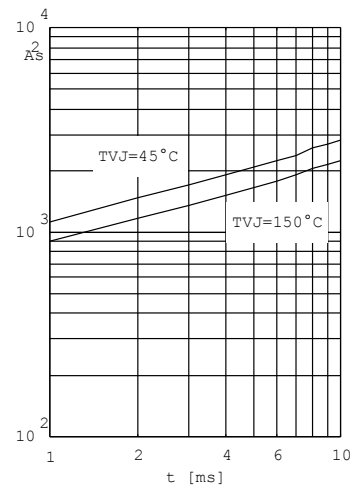


Fig. 3 $\int I^2 dt$ versus time (1-10ms) per diode (or thyristor)

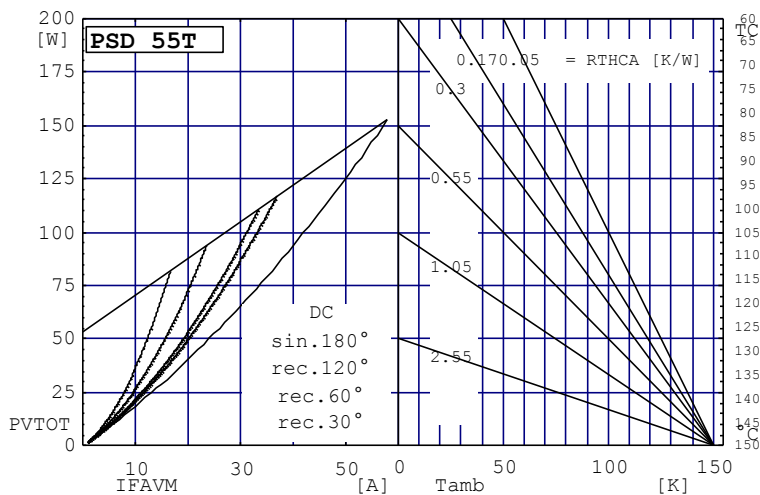


Fig. 4 Power dissipation versus direct output current and ambient temperature

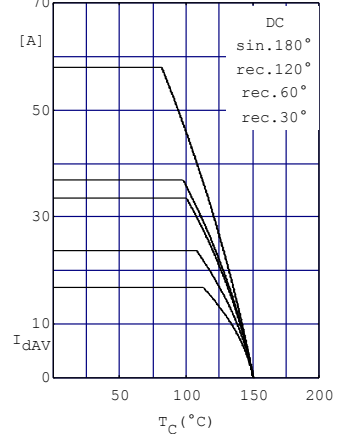


Fig.5 Maximum forward current at case temperature

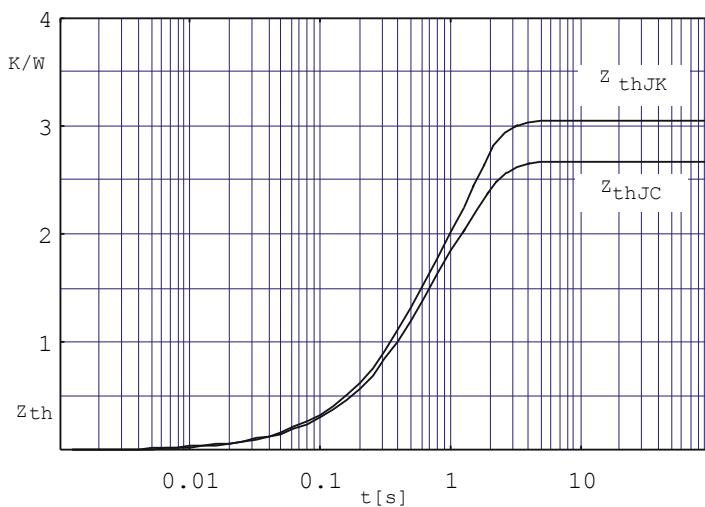


Fig. 6 Transient thermal impedance per diode (or thyristor)

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