POWERSEM

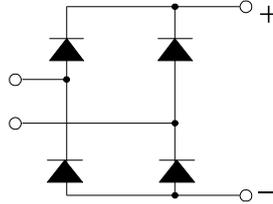## Single Phase Rectifier Bridges

PSB 105

$I_{dAVM} = 105A$
$V_{RRM} = 800-1800\ V$

Preliminary Data Sheet

V_{RSM} V	V_{RRM} V	Type
800	800	PSB 105/08
1200	1200	PSB 105/12
1400	1400	PSB 105/14
1600	1600	PSB 105/16
1800	1800	PSB 105/18

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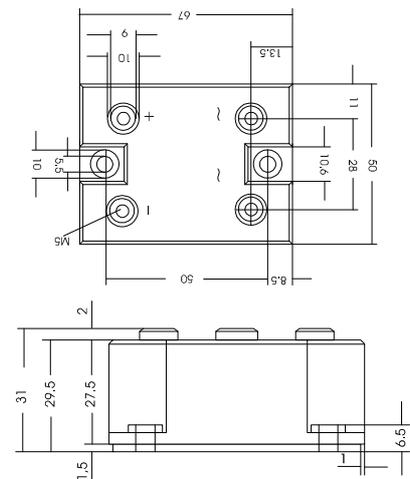- UL registered E 148688

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

Symbol	Test Conditions				Maximum Ratings	
I_{dAVM}	$T_C = 85°C$, module				105	A
I_{FSM}	$T_{VJ} = 45°C$	t = 10 ms	(50 Hz), sine		1500	A
	$V_R = 0$	t = 8.3 ms	(60 Hz), sine		1650	A
	$T_{VJ} = T_{VJM}$	t = 10 ms	(50 Hz), sine		1350	A
	$V_R = 0$	t = 8.3 ms	(60 Hz), sine		1500	A
$\int i^2\,dt$	$T_{VJ} = 45°C$	t = 10 ms	(50 Hz), sine		11250	$A^2 s$
	$V_R = 0$	t = 8.3 ms	(60 Hz), sine		11300	$A^2 s$
	$T_{VJ} = T_{VJM}$	t = 10 ms	(50 Hz), sine		9120	$A^2 s$
	$V_R = 0$	t = 8.3 ms	(60 Hz), sine		9350	$A^2 s$
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 ~
	$I_{ISOL} \le 1\ mA$	t = 1 s			3000	V ~
M_d	Mounting torque		(M5)		$5 \pm 15\%$	Nm
	Terminal connection torque		(M5)		$5 \pm 15\%$	Nm
Weight	typ.					g

Symbol	Test Conditions			Characteristic Value	
I_R	$V_R = V_{RRM}$	$T_{VJ} = 25°C$	$\le$	0.3	mA
	$V_R = V_{RRM}$	$T_{VJ} = T_{VJM}$	$\le$	8.0	mA
V_F	$I_F = 150\ A$	$T_{VJ} = 25°C$	$\le$	1.6	V
V_{TO}	For power-loss calculations only			0.8	V
r_T	$T_{VJ} = T_{VJM}$			5	mΩ
R_{thJC}	per Diode; DC current			0.9	K/W
	per module			0.225	K/W
R_{thJK}	per Diode; DC current			1.1	K/W
	per module			0.275	K/W
d_S	Creeping distance on surface			17.6	mm
d_A	Creeping distance in air			17.6	mm
a	Max. allowable acceleration			50	m/s^2

Package, style and outline
Dimensions in mm (1mm = 0.0394")

POWERSEM reserves the right to change limits, test conditions and dimensions
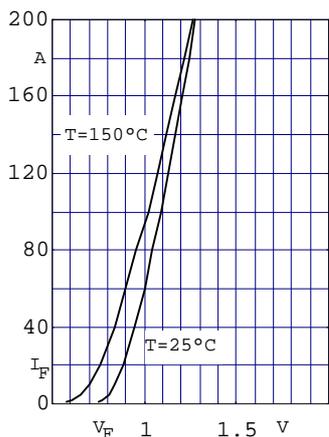
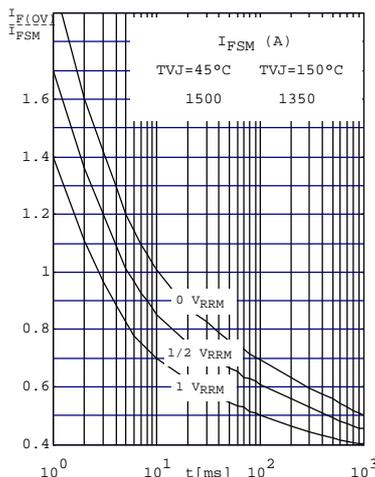Fig. 1 Forward current versus voltage drop per diode

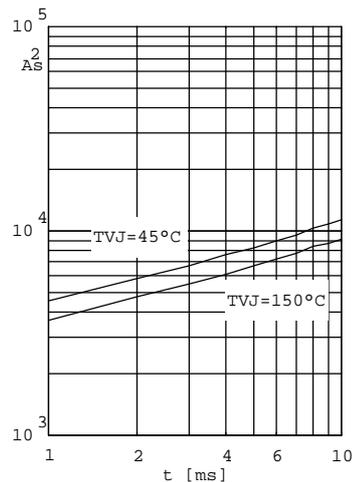Fig. 2 Surge overload current per diode I_{FSM}: Crest value. t: duration

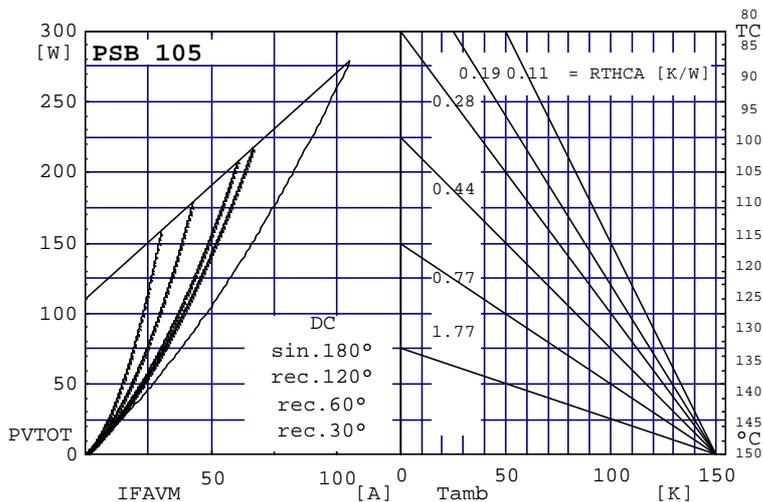Fig. 3 $\int i^2 dt$ versus time (1-10ms) per diode (or thyristor)

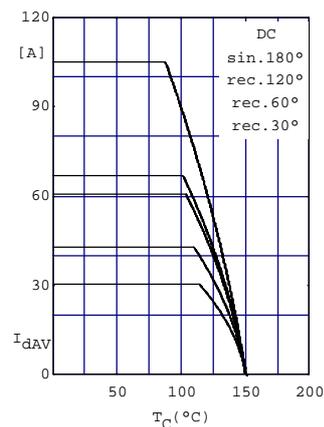Fig. 4 Power dissipation versus direct output current and ambient temperature
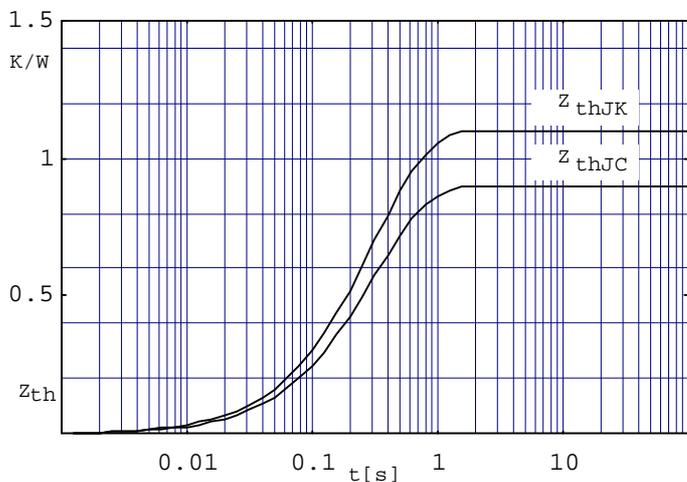
Fig.5 Maximum forward current at case temperature

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