POWERSEM

ECO-PAC™ 1

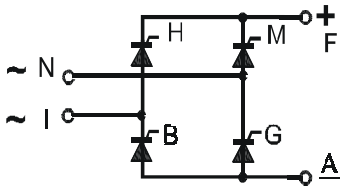
Single Phase Full Controlled Rectifier Bridge

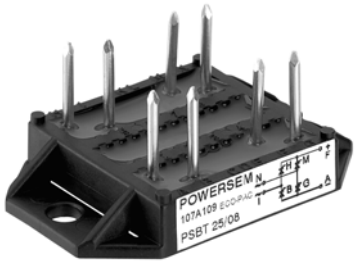
PSBT 25

I_{dAV} = 32 A
V_{RRM} = 600-1200V

Preliminary Data Sheet

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type
700	600	PSBT 25/06
900	800	PSBT 25/08
1300	1200	PSBT 25/12





Symbol	Test Conditions		Maximum Ratings	
I^*_{dAV}	T_C = 85 °C,	(per module)	32	A
I_{TRMS}	$T_{VJ} = T_{VJM}$		-	A
I_{TAVM}	T_C = 85 °C,	180° sine, per thyristor	16	A
I_{TSM}	T_{VJ} = 45 °C	t = 10 ms (50 Hz), sine	200	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	210	A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	180	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	190	A
$\int i^2 dt$	T_{VJ} = 45 °C	t = 10 ms (50 Hz), sine	200	A²s
	V_R = 0	t = 8.3 ms (60 Hz), sine	150	A²s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	160	A²s
	V_R = 0	t = 8.3 ms (60 Hz), sine	150	A²s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$	repetitive, I_T = 20 A	100	A/µs
	f=50Hz, t_P=200µs			
	V_D=2/3V_{DRM}			
	I_G=0.15 A	non repetitive, $I_T = I_{TAVM}$	500	A/µs
	di_G/dt=0.15A/µs			
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$	V_D=2/3V_{DRM}	500	V/µs
	R_{GK}= ∞, method 1 (linear voltage rise)			
P_{GM}	$T_{VJ} = T_{VJM}$	t_P=30µs	≤ 5	W
	$I_T = I_{TAVM}$	t_P=300µs	≤ 2.5	W
P_{GAVM}			0.5	W
V_{RGM}			10	V
T_{VJ}			-40... + 125	°C
T_{VJM}			125	°C
T_{stg}			-40... + 125	°C
V_{ISOL}	50/60 Hz, RMS	t = 1 min	2500	V~
	I_{ISOL} ≤ 1 mA	t = 1 s	3000	V~
M_d	Mounting torque	(M4)	1.5 - 1.8	Nm
			14 - 16	lb.in.
Weight	typ.		16	g

Data according to IEC 60747 refer to a single thyristor unless otherwise stated
*for resistive load at bridge output

Features

- Package with DCB ceramic base plate
- Isolation voltage 3000 V~
- Planar glass passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering
- UL registered, E 148688

Applications

- Supplies for DC power equipment
- Imput rectifier 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
- High power density
- Small and light weight

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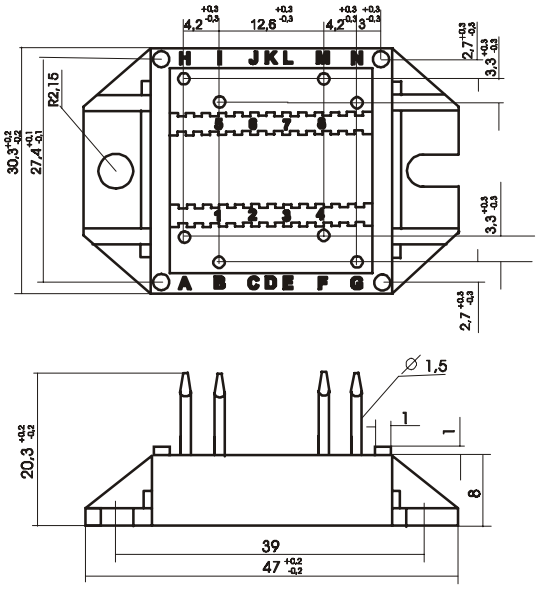
Symbol	Test Conditions			Characteristic Value	
I_D, I_R	$T_{VJ} = T_{VJM}$, $V_R = V_{RRM}$, $V_D = V_{DRM}$		≤	5	mA
V_T	I_T = 20 A,	T_{VJ} = 25 °C	≤	1.6	V
V_{TO}	For power-loss calculations only ($T_{VJ} = T_{VJM}$)			0.85	V
r_T				27	mΩ
V_{GT}	V_D = 6V	T_{VJ} = 25°C	≤	1.5	V
		T_{VJ} =-40°C	≤	2.5	V
I_{GT}	V_D = 6V	T_{VJ} = 25°C	≤	25	mA
		T_{VJ} =-40°C	≤	50	mA
V_{GD}	T_{VJ}= 125°C	V_D=2/3V_{DRM}	≤	0.2	V
I_{GD}	T_{VJ}= 125°C	V_D=2/3V_{DRM}	≤	3	mA
I_L	T_{VJ}= 25°C, t_P=10µs		≤	75	mA
	I_G=0.1A, di_G/dt=0.1A/µs				
I_H	T_{VJ}= 25°C, V_D=6V, R_{GK}= ∞		≤	50	mA
t_{gd}	T_{VJ}= 25°C, V_D=1/2V_{DRM}		≤	2	µs
	I_G=0.1A, di_G/dt=0.1A/µs				
R_{thJC}	per thyristor; DC			1.3	K/W
	per module			0.33	K/W
R_{thJK}	per thyristor; DC			1.8	K/W
	per module			0.45	K/W
d_s	Creeping distance on surface			11.2	mm
d_A	Creeping distance in air			5.0	mm
a	Max. allowable acceleration			50	m/s²

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



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