Single Phase Half Controlled Rectifier Bridge With Freeweeling DIODE

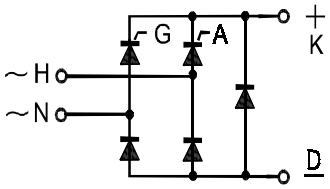
PSCH 25

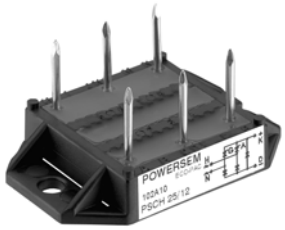
I_{dAV} = 32 A

V_{RRM} = 600-1200 V

Preliminary Data Sheet

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





Symbol	Test Conditions			Maximum Ratings	
I^*_{dAV}	T_C = 85 °C, (per module)			32	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	A^2 s
	V_R = 0	t = 8.3 ms	(60 Hz), sine	150	A^2 s
	T_{VJ} = T_{VJM}	t = 10 ms	(50 Hz), sine	160	A^2 s
	V_R = 0	t = 8.3 ms	(60 Hz), sine	150	A^2 s
$(di/dt)_{cr}$	T_{VJ} = T_{JVM}	repetitive, I_T = 20 A		100	A/µs
	f = 50Hz, t_P = 200µs				
	V_D = 2/3 V_{DRM}				
	I_G = 0.15 A	non repetitive, I_T = I_{TAVM}		500	A/µs
	di_G/dt = 0.15 A/µs				
$(dv/dt)_{cr}$	T_{VJ} = T_{VJM}	V_{DR} = 2/3 V_{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 diode/thyristor unless otherwise stated
*- for resistive load at bridge output

Features

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

Applications

- Supplies for DC power equipment
- Input 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 = 20A, 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}	$T_{VJ} = T_{VJM}$	V_D = 2/3 V_{DRM}	≤	0.2	V
I_{GD}	$T_{VJ} = T_{VJM}$	V_D = 2/3 V_{DRM}	≤	3	mA
I_L	T_{VJ} = 25°C, t_P = 10µs		≤	75	mA
	I_G = 0.3A, di_G/dt = 0.3A/µs				
I_H	T_{VJ} = 25°C, V_D = 6V, R_{GK} = ∞		≤	50	mA
t_{gd}	T_{VJ} = 25°C, V_D = ½ V_{DRM}		≤	2	µs
	I_G = 0.1A, di_G/dt = 0.1A/µs				
R_{thJC}	per thyristor; DC			1.3	K/W
	per module			0.26	K/W
R_{thJK}	per thyristor; DC			1.8	K/W
	per module			0.36	K/W
d_S	Creeping distance on surface			11.2	mm
d_A	Creeping distance in air			9.5	mm
a	Max. allowable acceleration			50	m/s^2

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