

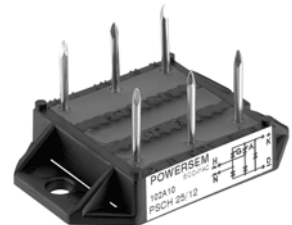
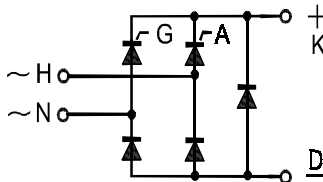
Single Phase Half Controlled Rectifier Bridge With Freewheeling DIODE

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}^*	$T_C = 85^\circ\text{C}$, (per module)		32	A
I_{TAVM}	$T_C = 85^\circ\text{C}$	180° sine, per thyristor	16	A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$	$t = 10\text{ ms}$ (50 Hz), sine	200	A
	$V_R = 0$	$t = 8.3\text{ ms}$ (60 Hz), sine	210	A
	$T_{VJ} = T_{VJM}$	$t = 10\text{ ms}$ (50 Hz), sine	180	A
	$V_R = 0$	$t = 8.3\text{ ms}$ (60 Hz), sine	190	A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$	$t = 10\text{ ms}$ (50 Hz), sine	200	$\text{A}^2\text{ s}$
	$V_R = 0$	$t = 8.3\text{ ms}$ (60 Hz), sine	150	$\text{A}^2\text{ s}$
	$T_{VJ} = T_{VJM}$	$t = 10\text{ ms}$ (50 Hz), sine	160	$\text{A}^2\text{ s}$
	$V_R = 0$	$t = 8.3\text{ ms}$ (60 Hz), sine	150	$\text{A}^2\text{ s}$
$(di/dt)_{cr}$	$T_{VJ} = T_{JVM}$	repetitive, $I_T = 20\text{ A}$	100	$\text{A}/\mu\text{s}$
	$f = 50\text{ Hz}$, $t_p = 200\mu\text{s}$			
	$V_D = 2/3 V_{DRM}$			
$(dv/dt)_{cr}$	$I_G = 0.15\text{ A}$	non repetitive, $I_T = I_{TAVM}$	500	$\text{A}/\mu\text{s}$
	$di_G/dt = 0.15\text{ A}/\mu\text{s}$			
	$T_{VJ} = T_{VJM}$	$V_{DR} = 2/3 V_{DRM}$	500	$\text{V}/\mu\text{s}$
P_{GM}	$T_{VJ} = T_{VJM}$	$t_p = 30\mu\text{s}$	≤ 5	W
	$I_T = I_{TAVM}$	$t_p = 300\mu\text{s}$	≤ 2.5	W
P_{GAVM}			0.5	W
V_{RGM}			10	V
T_{VJ}			-40 ... + 125	$^\circ\text{C}$
T_{VJM}			125	$^\circ\text{C}$
T_{stg}			-40 ... + 125	$^\circ\text{C}$
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	(M4)	1.5-1.8	Nm
			14-16	lb.in.
Weight	typ.		16	g

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

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

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")

