

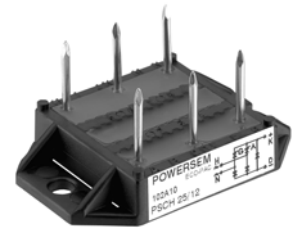
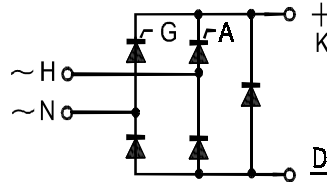
Single Phase Half Controlled Rectifier Bridge With Freewheeling DIODE

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 $\text{A}^2\text{ s}$
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ repetitive, $I_T = 20\text{ A}$ $f = 50\text{ Hz}$, $t_p = 200\mu\text{s}$ $V_D = 2/3 V_{DRM}$	100 $\text{A}/\mu\text{s}$
	$I_G = 0.15\text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt = 0.15\text{ A}/\mu\text{s}$	500 $\text{A}/\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$ $V_{DR} = 2/3 V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise)	500 $\text{V}/\mu\text{s}$
P_{GM}	$T_{VJ} = T_{VJM}$ $t_p = 30\mu\text{s}$	$\leq 5\text{ W}$
	$I_T = I_{TAVM}$ $t_p = 300\mu\text{s}$	$\leq 2.5\text{ W}$
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	$T_{VJ} = T_{VJM}, V_R = V_{RRM}, V_D = V_{DRM}$	\leq	5	mA	
V_T	$I_T = 20A, T_{VJ} = 25^\circ C$	\leq	1.6	V	
V_{TO}	For power-loss calculations only ($T_{VJ} = T_{VJM}$)		0.85	V	
r_T			27	m Ω	
V_{GT}	$V_D = 6V$	$T_{VJ} = 25^\circ C$	\leq	1.5	V
		$T_{VJ} = -40^\circ C$	\leq	2.5	V
I_{GT}	$V_D = 6V$	$T_{VJ} = 25^\circ C$	\leq	25	mA
		$T_{VJ} = -40^\circ C$	\leq	50	mA
V_{GD}	$T_{VJ} = T_{VJM} \quad V_D = 2/3 V_{DRM}$	\leq	0.2	V	
I_{GD}	$T_{VJ} = T_{VJM} \quad V_D = 2/3 V_{DRM}$	\leq	3	mA	
I_L	$T_{VJ} = 25^\circ C, t_p = 10\mu s$	\leq	75	mA	
	$I_G = 0.3A, di_G/dt = 0.3A/\mu s$				
I_H	$T_{VJ} = 25^\circ C, V_D = 6V, R_{GK} = \infty$	\leq	50	mA	
t_{gd}	$T_{VJ} = 25^\circ C, V_D = 1/2 V_{DRM}$ $I_G = 0.1A, di_G/dt = 0.1A/\mu s$	\leq	2	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")

