

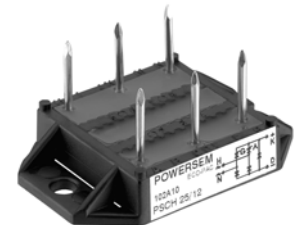
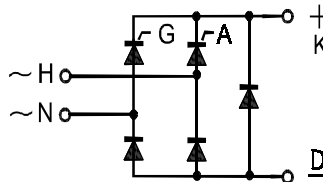
Single Phase Half Controlled Rectifier Bridge With Freewheeling DIODE

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}	$R_{GK} = \infty$, method 1 (linear voltage rise)			
	$T_{VJ} = T_{VJM}$	$t_p = 30\mu\text{s}$	≤ 5	W
P_{GAVM}	$I_T = I_{TAVM}$		≤ 2.5	W
	$t_p = 300\mu\text{s}$		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}	$T_{VJ} = T_{VJM}$	$V_D = 2/3 V_{DRM}$	$\leq$	0.2	V
I_{GD}	$T_{VJ} = T_{VJM}$	$V_D = 2/3 V_{DRM}$	$\leq$	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}	$T_{VJ} = 25^{\circ}C, V_D = 1/2 V_{DRM}$		$\leq$	2	μs
	$I_G = 0.1A, di_G/dt = 0.1A/\mu s$				
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")

