

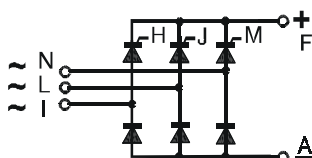
Three Phase Half Controlled Rectifier Bridge

PSDH 39

$$\begin{aligned} I_{dAV} &= 39 \text{ A} \\ V_{RRM} &= 600-1200 \text{ V} \end{aligned}$$

Preliminary Data Sheet

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type
700	600	PSDH 39/06
900	800	PSDH 39/08
1300	1200	PSDH 39/12



Symbol	Test Conditions	Maximum Ratings
I_{dAV}^*	$T_C = 85^\circ\text{C}$, (per module)	39 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 A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	150 A ² s
	$T_{VJ} = T_{VJM}$ $t = 10 \text{ ms}$ (50 Hz), sine	160 A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	150 A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ repetitive, $I_T = 20 \text{ A}$ $f=50\text{Hz}$, $t_p=200\mu\text{s}$	100 A/ μs
	$V_D=2/3V_{DRM}$ $I_G=0.15 \text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt=0.15\text{A}/\mu\text{s}$	500 A/ μs
	$T_{VJ} = T_{VJM}$ $V_D=2/3V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise)	500 V/ μs
P_{GM}	$T_{VJ} = T_{VJM}$ $t_p=30\mu\text{s}$ $I_T = I_{TAVM}$ $t_p=300\mu\text{s}$	$\leq 5 \text{ W}$ $\leq 2.5 \text{ W}$
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 $t = 1 \text{ min}$	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 3600 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
- 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 thyristor unless otherwise stated
*for resistive load at bridge output

Symbol	Test Conditions	Characteristic Value
$I_{D,R}$	$T_{VJ} = T_{VJM}, V_R = V_{RRM}, V_D = V_{DRM}$	≤ 5 mA
V_T	$I_T = 20$ A, $T_{VJ} = 25^\circ\text{C}$	≤ 1.6 V
V_{TO}	For power-loss calculations only ($T_{VJ} = T_{VJM}$)	0.85 V
r_T		27 m Ω
V_{GT}	$V_D = 6$ V, $T_{VJ} = 25^\circ\text{C}$	≤ 1.5 V
	$T_{VJ} = -40^\circ\text{C}$	≤ 2.5 V
I_{GT}	$V_D = 6$ V, $T_{VJ} = 25^\circ\text{C}$	≤ 25 mA
	$T_{VJ} = -40^\circ\text{C}$	≤ 50 mA
V_{GD}	$T_{VJ} = 125^\circ\text{C}$, $V_D = 2/3 V_{DRM}$	≤ 0.2 V
I_{GD}	$T_{VJ} = 125^\circ\text{C}$, $V_D = 2/3 V_{DRM}$	≤ 3 mA
I_L	$T_{VJ} = 25^\circ\text{C}$, $t_p = 10\mu\text{s}$ $I_G = 0.1$ A, $di_G/dt = 0.1$ A/ μs	≤ 75 mA
I_H	$T_{VJ} = 25^\circ\text{C}$, $V_D = 6$ V, $R_{GK} = \infty$	≤ 50 mA
t_{gd}	$T_{VJ} = 25^\circ\text{C}$, $V_D = 1/2 V_{DRM}$ $I_G = 0.1$ A, $di_G/dt = 0.1$ A/ μs	≤ 2 μs
R_{thJC}	per thyristor; DC	1.3 K/W
	per module	0.22 K/W
R_{thJK}	per thyristor; DC	1.8 K/W
	per module	0.3 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/s ²

Package style and outline

Dimensions in mm (1mm = 0.0394")

