

Single Phase Half Controlled Rectifier Bridge

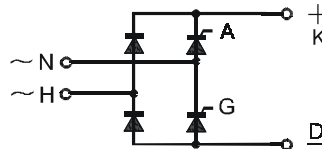
PSBZ 36

$$I_{dAV} = 36 \text{ A}$$

$$V_{RRM} = 600-1600 \text{ V}$$

Preliminary Data Sheet

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type
700	600	PSBZ 36/06
900	800	PSBZ 36/08
1300	1200	PSBZ 36/12
1500	1400	PSBZ 36/14
1700	1600	PSBZ 36/16



Symbol	Test Conditions	Maximum Ratings
I_{dAV}^*	$T_C = 85^\circ\text{C}$, (per module)	36 A
I_{TRMS}	$T_{VJ} = T_{VJM}$	31 A
I_{TAVM}	$T_C = 85^\circ\text{C}$, 180° sine, per thyristor	40 A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	320 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	350 A
	$T_{VJ} = T_{VJM}$ $t = 10 \text{ ms}$ (50 Hz), sine	280 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	310 A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	500 A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	520 A ² s
	$T_{VJ} = T_{VJM}$ $t = 10 \text{ ms}$ (50 Hz), sine	390 A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	400 A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ repetitive, $I_T = 50 \text{ A}$	150 A/ μs
	$f=50\text{Hz}$, $t_p=200\mu\text{s}$	
	$V_D=2/3V_{DRM}$	
$(dv/dt)_{cr}$	$I_G=0.15 \text{ A}$ non repetitive, $I_T=1/2 \cdot I_{dAV}$	500 A/ μs
	$di_G/dt=0.15 \text{ A}/\mu\text{s}$	
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$ $V_D=2/3V_{DRM}$	1000 V/ μs
	$R_{GK} = \infty$, method 1 (linear voltage rise)	
P_{GM}	$T_{VJ} = T_{VJM}$ $t_p=30\mu\text{s}$	$\leq 10 \text{ W}$
	$I_T = I_{TAVM}$ $t_p=500\mu\text{s}$	$\leq 5 \text{ W}$
	$t_p=10\text{ms}$	$\leq 1 \text{ W}$
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

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

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

Symbol	Test Conditions	Characteristic Value
$I_{D,R}$	$T_{VJ} = T_{VJM}, V_R = V_{RRM}, V_D = V_{DRM}$	≤ 5 mA
	$T_{VJ} = 25^\circ\text{C}$	≤ 0.3 mA
V_T	$I_T = 45$ A, $T_{VJ} = 25^\circ\text{C}$	≤ 1.45 V
V_{TO}	For power-loss calculations only ($T_{VJ} = T_{VJM}$)	0.85 V
r_T		13 m Ω
V_{GT}	$V_D = 6$ V, $T_{VJ} = 25^\circ\text{C}$	≤ 1.0 V
	$T_{VJ} = -40^\circ\text{C}$	≤ 1.2 V
I_{GT}	$V_D = 6$ V, $T_{VJ} = 25^\circ\text{C}$	≤ 65 mA
	$T_{VJ} = -40^\circ\text{C}$	≤ 80 mA
	$T_{VJ} = 125^\circ\text{C}$	≤ 50 mA
V_{GD}	$T_{VJ} = T_{VJM}, V_D = 2/3 V_{DRM}$	≤ 0.2 V
I_{GD}	$T_{VJ} = T_{VJM}, V_D = 2/3 V_{DRM}$	≤ 5 mA
I_L	$T_G = 30\mu\text{s}, I_G = 0.3$ A, $T_{VJ} = 25^\circ\text{C}$	≤ 150 mA
	$di_G/dt = 0.1$ A/ μs , $T_{VJ} = -40^\circ\text{C}$	≤ 200 mA
	$T_{VJ} = 125^\circ\text{C}$	≤ 100 mA
I_H	$T_{VJ} = 25^\circ\text{C}, V_D = 6$ V, $R_{GK} = \infty$	≤ 100 mA
t_{gd}	$T_{VJ} = 25^\circ\text{C}, V_D = 1/2 V_{DRM}$ $I_G = 0.3$ A, $di_G/dt = 0.3$ A/ μs	≤ 2 μs
R_{thJC}	per thyristor; DC	1.4 K/W
	per module	0.35 K/W
R_{thJK}	per thyristor; DC	2.0 K/W
	per module	0.5 K/W
d_s	Creeping distance on surface	12.6 mm
d_A	Creeping distance in air	6.3 mm
a	Max. allowable acceleration	50 m/s ²

Package style and outline

Dimensions in mm (1mm = 0.0394")

