

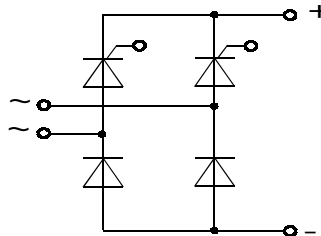
### Single Phase Half Controlled Rectifier Bridge, B2HK PSBH 54

$$I_{dAV} = 56 \text{ A}$$

$$V_{RRM} = 800-1600 \text{ V}$$

Preliminary Data Sheet

$V_{RSM}$ $V_{DSM}$ (V)	$V_{RRM}$ $V_{DRM}$ (V)	Type
900	800	PSBH 54/08
1300	1200	PSBH 54/12
1500	1400	PSBH 54/14
1700	1600	PSBH 54/16



ECO-PAC™ 3

Symbol	Test Conditions	Maximum Ratings
$I_{dAV}$	$T_C = 85 \text{ °C}$ ; per module	56 A
$I_{TSM}$	$T_{VJ} = 45 \text{ °C}$ $t = 10 \text{ ms}$ (50 Hz), sine	550 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	600 A
	$T_{VJ} = 125 \text{ °C}$ $t = 10 \text{ ms}$ (50 Hz), sine	490 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	540 A
$\int i^2 dt$	$T_{VJ} = 45 \text{ °C}$ $t = 10 \text{ ms}$ (50 Hz), sine	1500 A <sup>2</sup> s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	1490 A <sup>2</sup> s
	$T_{VJ} = 125 \text{ °C}$ $t = 10 \text{ ms}$ (50 Hz), sine	1200 A <sup>2</sup> s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	1210 A <sup>2</sup> s
$(di/dt)_{cr}$	$T_{VJ} = 125 \text{ °C}$ repetitive, $I_T = 50 \text{ A}$ $f=50\text{Hz}$ , $t_p=200\mu\text{s}$	150 A/ $\mu\text{s}$
	$V_D=2/3V_{DRM}$ $I_G=0.3 \text{ A}$ non repetitive, $I_T = 1/2 I_{dAV}$ $di_G/dt=0.3\text{A}/\mu\text{s}$	500 A/ $\mu\text{s}$
	$T_{VJ} = 125 \text{ °C}$ $V_D=2/3V_{DRM}$ $R_{GK} = \infty$ , method 1 (linear voltage rise)	1000 V/ $\mu\text{s}$
$P_{GM}$	$T_{VJ} = 125 \text{ °C}$ $t_p=30\mu\text{s}$	$\leq 10 \text{ W}$
	$I_T=I_{TAVM}$ $t_p=300\mu\text{s}$	$\leq 5 \text{ W}$
$P_{GAVM}$		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 - 2.0 Nm
		14 - 18 lb.in.
Weight	typ.	46 g

#### Features

- 
- Package with DCB ceramic base plate
- Isolation voltage 3000 V~
- Planar glass passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering
- UL Release applied

#### 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 four 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

Symbol	Test Conditions	Characteristic Value
$I_D, I_R$	$T_{VJ} = 125^\circ\text{C}, V_R = V_{RRM}, V_D = V_{DRM}$	$\leq 5$ mA
$V_F, V_T$	$I_T = 80$ A, $T_{VJ} = 25^\circ\text{C}$	$\leq 1.64$ V
$V_{TO}$	For power-loss calculations only	0.85 V
$r_T$		11 m $\Omega$
$V_{GT}$	$V_D = 6$ V $T_{VJ} = 25^\circ\text{C}$	$\leq 1.5$ V
	$T_{VJ} = -40^\circ\text{C}$	$\leq 1.6$ V
$I_{GT}$	$V_D = 6$ V $T_{VJ} = 25^\circ\text{C}$	$\leq 100$ mA
	$T_{VJ} = -40^\circ\text{C}$	$\leq 200$ mA
$V_{GD}$	$T_{VJ} = 125^\circ\text{C}, V_D = 2/3 V_{DRM}$	$\leq 0.2$ V
$I_{GD}$	$T_{VJ} = 125^\circ\text{C}, V_D = 2/3 V_{DRM}$	$\leq 5$ mA
$I_L$	$T_{VJ} = 25^\circ\text{C}, t_p = 10\mu\text{s}, V_D = 6$ V $I_G = 0.45$ A, $di_G/dt = 0.45$ A/ $\mu\text{s}$	$\leq 450$ mA
$I_H$	$T_{VJ} = 25^\circ\text{C}, V_D = 6$ V, $R_{GK} = \infty$	$\leq 200$ mA
$t_{gd}$	$T_{VJ} = 25^\circ\text{C}, V_D = 1/2 V_{DRM}$ $I_G = 0.45$ A, $di_G/dt = 0.45$ A/ $\mu\text{s}$	$\leq 2$ $\mu\text{s}$
$t_q$	$T_{VJ} = T_{VJM}; I_T = 20$ A; $t_p = 200\mu\text{s}; di/dt = -10$ A/ $\mu\text{s}$ $V_R = 100$ V; $dv/dt = 15$ V/ $\mu\text{s}; V_D = 2/3 V_{DRM}$	250 $\mu\text{s}$
$R_{thJC}$	per thyristor; DC	0.8 KW
	per module	0.2 KW
$R_{thJH}$	per thyristor; DC	1.1 KW
	per module	0.183 KW
$d_s$	Creepage distance on surface (Pin to heatsink)	11.2 mm
$d_A$	Strike distance in air (Pin to heatsink)	11.2 mm
$a$	Max. allowable acceleration	50 m/s <sup>2</sup>

### Package style and outline

Dimensions in mm (1mm = 0.0394")

