

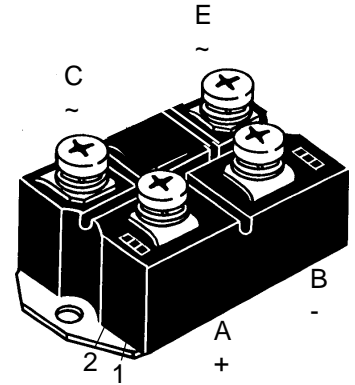
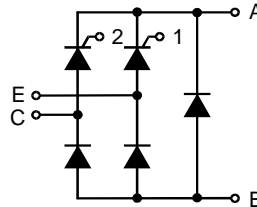
# Half Controlled Single Phase Rectifier Bridge, B2HKF

with Freewheeling Diode

$$I_{dAV} = 82/123 \text{ A}$$

$$V_{RRM} = 1200-1600 \text{ V}$$

$V_{RSM}$ $V_{DSM}$ V	$V_{RRM}$ $V_{DRM}$ V	Type	
1300	1200	VHF 85-12io7	VHF 125-12io7
1500	1400	VHF 85-14io7	VHF 125-14io7
1700	1600		VHF 125-16io7



Symbol	Test Conditions	Maximum Ratings		
		VHF 85	VHF 125	
$I_{dAV}$	$T_C = 85^\circ\text{C}$ ; module per leg	82	123	A
$I_{FRMS}, I_{TRMS}$		58	89	A
$I_{FSM}, I_{TSM}$	$T_{VJ} = 45^\circ\text{C}$ ; $t = 10 \text{ ms}$ (50 Hz), sine	1150	1500	A
	$V_R = 0$ ; $t = 8.3 \text{ ms}$ (60 Hz), sine	1230	1600	A
	$T_{VJ} = T_{VJM}$ ; $t = 10 \text{ ms}$ (50 Hz), sine	1000	1350	A
	$V_R = 0$ ; $t = 8.3 \text{ ms}$ (60 Hz), sine	1070	1450	A
$I^2t$	$T_{VJ} = 45^\circ\text{C}$ ; $t = 10 \text{ ms}$ (50 Hz), sine	6600	11200	A <sup>2</sup> s
	$V_R = 0$ ; $t = 8.3 \text{ ms}$ (60 Hz), sine	6280	10750	A <sup>2</sup> s
	$T_{VJ} = T_{VJM}$ ; $t = 10 \text{ ms}$ (50 Hz), sine	5000	9100	A <sup>2</sup> s
	$V_R = 0$ ; $t = 8.3 \text{ ms}$ (60 Hz), sine	4750	8830	A <sup>2</sup> s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ repetitive, $I_T = 50 \text{ A}$	150		A/ $\mu\text{s}$
	$f = 400 \text{ Hz}$ , $t_p = 200 \mu\text{s}$ $V_D = 2/3 V_{DRM}$ $I_G = 0.3 \text{ A}$ , non repetitive, $di_G/dt = 0.3 \text{ A}/\mu\text{s}$ , $I_T = 1/3 \cdot I_{dAV}$	500		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)	1000		V/ $\mu\text{s}$
$V_{RGM}$		10		V
$P_{GM}$	$T_{VJ} = T_{VJM}$ ; $t_p = 30 \mu\text{s}$	$\leq$	10	W
	$I_T = I_{TAVM}$ ; $t_p = 500 \mu\text{s}$	$\leq$	5	W
	$t_p = 10 \text{ ms}$	$\leq$	1	W
$P_{GAVM}$			0.5	W
$T_{VJ}$		-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 (M6)	$5 \pm 15 \%$		Nm
	Terminal connection torque (M6)	$5 \pm 15 \%$		Nm
Weight	typ.	300		g

## Features

- Package with screw terminals
- Isolation voltage 3000 V~
- Planar passivated chips
- UL listing applied for

## Applications

- DC motor control

## Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling

Data according to IEC 60747 and refer to a single thyristor/diode unless otherwise stated. IXYS reserves the right to change limits, test conditions and dimensions.

Symbol	Test Conditions	Characteristic Values			
		VHF 85	VHF 125		
$I_R, I_D$	$V_R = V_{RRM}; V_D = V_{DRM}$	$T_{VJ} = T_{VJM}$	$\leq$	5	mA
		$T_{VJ} = 25^\circ\text{C}$	$\leq$	0.3	mA
$V_F, V_T$	$I_F, I_T = 200 \text{ A}, T_{VJ} = 25^\circ\text{C}$	$\leq$	1.75	1.57	V
$V_{T0}$	For power-loss calculations only		0.85	0.85	V
$r_T$	( $T_{VJ} = 125^\circ\text{C}$ )		6	3.5	m $\Omega$
$V_{GT}$	$V_D = 6 \text{ V};$	$T_{VJ} = 25^\circ\text{C}$	$\leq$	1.5	V
		$T_{VJ} = -40^\circ\text{C}$	$\leq$	1.6	V
$I_{GT}$	$V_D = 6 \text{ V};$	$T_{VJ} = 25^\circ\text{C}$	$\leq$	100	mA
		$T_{VJ} = -40^\circ\text{C}$	$\leq$	200	mA
$V_{GD}$	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	$\leq$	0.2		V
$I_{GD}$	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	$\leq$	5		mA
$I_L$	$I_G = 0.3 \text{ A}; t_G = 30 \mu\text{s}; di_G/dt = 0.3 \text{ A}/\mu\text{s}; T_{VJ} = 25^\circ\text{C}$	$\leq$	450		mA
$I_H$	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$	$\leq$	200		mA
$t_{gd}$	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}; I_G = 0.3 \text{ A}; di_G/dt = 0.3 \text{ A}/\mu\text{s}$	$\leq$	2		$\mu\text{s}$
$R_{thJC}$	per thyristor (diode); DC current per module		0.65	0.46	K/W
			0.108	0.077	K/W
$R_{thJK}$	per thyristor (diode); DC current per module		0.8	0.55	K/W
			0.133	0.092	K/W
$d_s$	Creeping distance on surface		10		mm
$d_A$	Creepage distance in air		9.4		mm
$a$	Max. allowable acceleration		50		m/s <sup>2</sup>

**Dimensions in mm (1 mm = 0.0394")**
