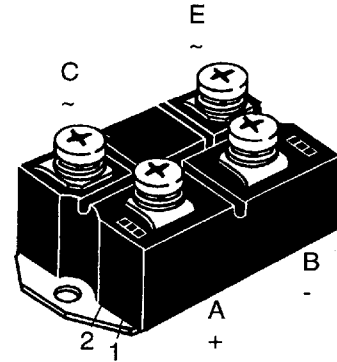
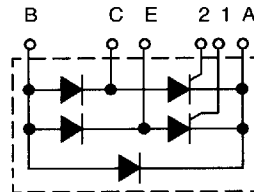


Single-Phase Half Controlled Rectifier Bridges, B2HKF with freewheeling Diode

VHF 85
VHF 125

$I_{dAVM} = 82/123 \text{ A}$
 $V_{RRM} = 1200 - 1600 \text{ V}$

V_{RSM}	V_{RRM}	Type
V_{DSM}	V_{DRM}	
V	V	
1300	1200	VHF 85-12io7 VHF 125-12io7
1500	1400	VHF 85-14io7 VHF 125-14io7
1700	1600	VHF 85-16io7 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
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine	6600	11200	A^2s
	$V_R = 0$; $t = 8.3 \text{ ms}$ (60 Hz), sine	6280	10750	A^2s
	$T_{VJ} = T_{VJM}$; $t = 10 \text{ ms}$ (50 Hz), sine	5000	9100	A^2s
	$V_R = 0$; $t = 8.3 \text{ ms}$ (60 Hz), sine	4750	8830	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$; repetitive, $I_T = 50 \text{ A}$	150		$\text{A}/\mu\text{s}$
	$f = 400 \text{ Hz}$; $t_p = 200 \mu\text{s}$			
$(dv/dt)_{cr}$	$V_D = 2/3 V_{DRM}$			
	$I_G = 0.3 \text{ A}$, non repetitive, $di_G/dt = 0.3 \text{ A}/\mu\text{s}$, $I_T = 1/3 \cdot I_{dAV}$	500		$\text{A}/\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $V_{DR} = 2/3 V_{DRM}$ $R_{GK} = \infty$; method 1 (linear voltage rise)	1000		$\text{V}/\mu\text{s}$
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±15 %		Nm
	Terminal connection torque (M6)	5±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 DIN/IEC 747 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	$V_R = V_{RRM}; V_D = V_{DRM}$ $T_{VJ} = T_{VJM}$ $T_{VJ} = 25^\circ\text{C}$	≤ 5 ≤ 0.3	5 0.3	mA mA
V_F, V_T	$I_F, I_T = 200 \text{ A}, T_{VJ} = 25^\circ\text{C}$	≤ 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	$\text{m}\Omega$
V_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	≤ 1.5	1.5	V
	$T_{VJ} = -40^\circ\text{C}$	≤ 1.6	1.6	V
I_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	≤ 100	100	mA
	$T_{VJ} = -40^\circ\text{C}$	≤ 200	200	mA
V_{GD}	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	≤ 0.2	0.2	V
I_{GD}	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	≤ 5	5	mA
I_L	$I_G = 0.3 \text{ A}; t_G = 30 \mu\text{s}$ $di_G/dt = 0.3 \text{ A}/\mu\text{s}$ $T_{VJ} = 25^\circ\text{C}$	≤ 450	450	mA
I_H	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$	≤ 200	200	mA
t_{gd}	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.3 \text{ A}; di_G/dt = 0.3 \text{ A}/\mu\text{s}$	≤ 2	2	μs
R_{thJC}	per thyristor (diode); DC current per module	0.65 0.108	0.46 0.077	K/W K/W
R_{thJK}	per thyristor (diode); DC current per module	0.8 0.133	0.55 0.092	K/W K/W
d_s	Creeping distance on surface	10	10	mm
d_A	Creepage distance in air	9.4	9.4	mm
a	Max. allowable acceleration	50	50	m/s^2

Dimensions in mm (1 mm = 0.0394")

