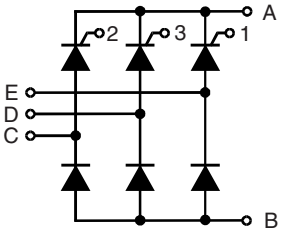
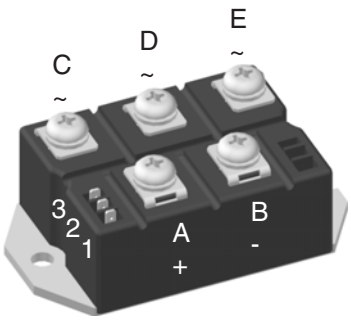
Three Phase Half Controlled Rectifier Bridge, B6HK

I_{dAVM} = 110/167 A
V_{RRM} = 1200-1600 V

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type	
1300	1200	VVZ 110-12io7	VVZ 175-12io7
1700	1600		VVZ 175-16io7





Symbol	Test Conditions		Maximum Ratings VVZ 110	VVZ 175	
I_{dAV}	T_C = 85°C; module		110	167	A
I_{FRMS}, I_{TRMS}	per leg		58	89	A
I_{FSM}, I_{TSM}	T_{VJ} = 45°C;	t = 10 ms (50 Hz), sine	1150	1500	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	1230	1600	A
	T_{VJ} = T_{VJM}	t = 10 ms (50 Hz), sine	1000	1350	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	1070	1450	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	6600	11200	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	6280	10750	A^2s
	T_{VJ} = T_{VJM}	t = 10 ms (50 Hz), sine	5000	9100	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	4750	8830	A^2s
$(di/dt)_{cr}$	T_{VJ} = T_{VJM} repetitive, I_T = 50 A f =400 Hz, t_P =200 µs V_D = 2/3 V_{DRM}		150		A/µs
	I_G = 0.3 A, non repetitive, di_G/dt = 0.3 A/µs, I_T = 1/3 • I_{dAV}		500		A/µs
$(dv/dt)_{cr}$	T_{VJ} = T_{VJM}; V_{DR} = 2/3 V_{DRM} R_{GK} = ∞; method 1 (linear voltage rise)		1000		V/µs
V_{RGM}			10		V
P_{GM}	T_{VJ} = T_{VJM}	t_p = 30 µs	≤ 10		W
	I_T = I_{TAVM}	t_p = 500 µs	≤ 5		W
		t_p = 10 ms	≤ 1		W
P_{GAVM}			0.5		W
T_{VJ}			-40...+125		°C
T_{VJM}			125		°C
T_{stg}			-40...+125		°C
V_{ISOL}	50/60 Hz, RMS	t = 1 min	2500		V~
	I_{ISOL} ≤ 1 mA	t = 1 s	3000		V~
M_d	Mounting torque (M6)		5±15 %		Nm
	Terminal connection torque (M6)		5±15 %		Nm
Weight	typ.		300		g

Data according to IEC 60747 and refer to a single thyristor/diode unless otherwise stated.

Features

- Package with screw terminals
- Isolation voltage 3000 V~
- Planar passivated chips
- UL registered E72873

Applications

- Input rectifier for PWM converter
- Input rectifier for switch mode power supplies (SMPS)
- Softstart capacitor charging

Advantages

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

IXYS reserves the right to change limits, test conditions and dimensions.

20100706b

© 2010 IXYS All rights reserved

Symbol	Test Conditions		Characteristic Values VVZ 110	VVZ 175	
I_R, I_D	$V_R = V_{RRM}$; $V_D = V_{DRM}$	$T_{VJ} = T_{VJM}$ ≤	5		mA
		$T_{VJ} = 25°C$ ≤	0.3		mA
V_F, V_T	I_F, I_T = 200 A, $T_{VJ} = 25°C$	≤	1.75	1.57	V
V_{T0}	For power-loss calculations only		0.85	0.85	V
r_T	($T_{VJ} = 125°C$)		6	3.5	mΩ
V_{GT}	V_D = 6 V; $T_{VJ} = 25°C$	≤	1.5		V
	$T_{VJ} = -40°C$	≤	1.6		V
I_{GT}	V_D = 6 V; $T_{VJ} = 25°C$	≤	100		mA
	$T_{VJ} = -40°C$	≤	200		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	I_G = 0.3 A; t_G = 30 µs $T_{VJ} = 25°C$	≤	450		mA
	di_G/dt = 0.3 A/µs				
I_H	$T_{VJ} = 25°C$; V_D = 6 V; $R_{GK} = \infty$	≤	200		mA
t_{gd}	$T_{VJ} = 25°C$; $V_D = ½ V_{DRM}$	≤	2		µs
	I_G = 0.3 A; di_G/dt = 0.3 A/µs				
R_{thJC}	per thyristor (diode); DC current		0.65	0.46	K/W
	per module		0.108	0.077	K/W
R_{thJH}	per thyristor (diode); DC current		0.8	0.55	K/W
	per module		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^2

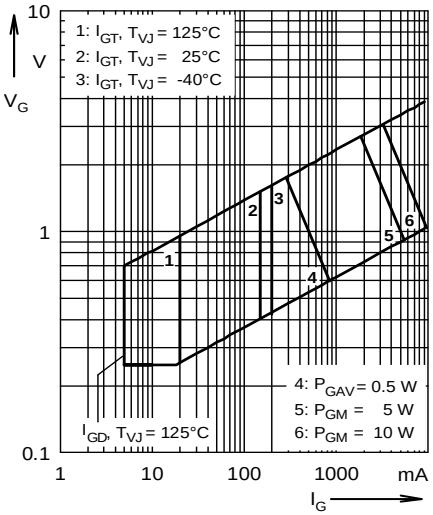


Fig. 1 Gate trigger characteristics

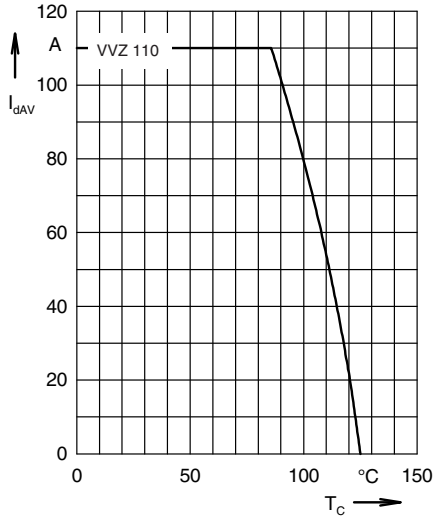
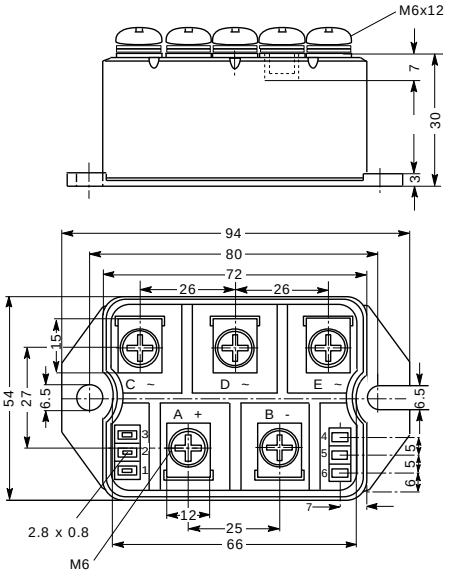


Fig. 2 DC output current at case temperature

Dimensions in mm (1 mm = 0.0394")



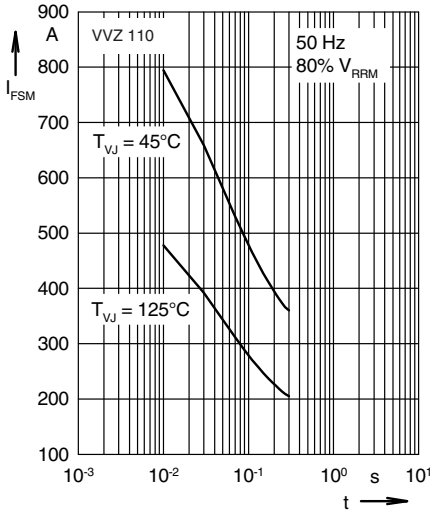


Fig. 3 Surge overload current
I_{FSM}: Crest value, t: duration

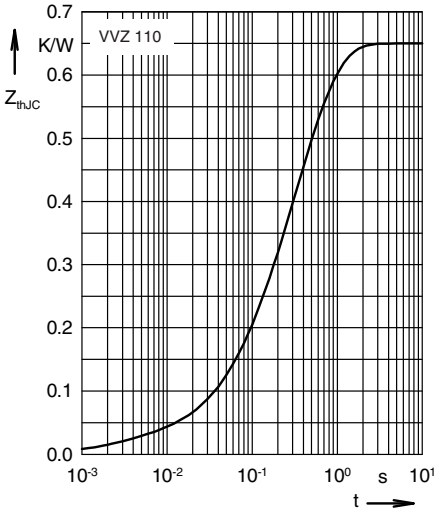


Fig. 4 Transient thermal impedance junction to case (per leg)

IXYS reserves the right to change limits, test conditions and dimensions.

© 2010 IXYS All rights reserved



Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications.Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.