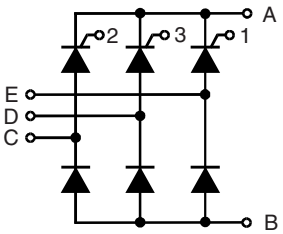
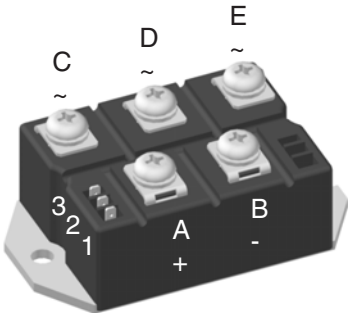
Three Phase Half Controlled Rectifier Bridge, B6HK

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} f =400 Hz, t_P =200 µs V_D = 2/3 V_{DRM}	repetitive, I_T = 50 A	150		A/µs
	I_G = 0.3 A, di_G/dt = 0.3 A/µs, I_T = 1/3 • I_{dAV}	non repetitive,	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

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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 $di_G/dt = 0.3$ A/µs	$T_{VJ} = 25°C$	≤	450		mA
I_H	$T_{VJ} = 25°C$; $V_D = 6$ V; $R_{GK} = \infty$		≤	200		mA
t_{gd}	$T_{VJ} = 25°C$; $V_D = ½\ V_{DRM}$ $I_G = 0.3$ A; $di_G/dt = 0.3$ A/µs		≤	2		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

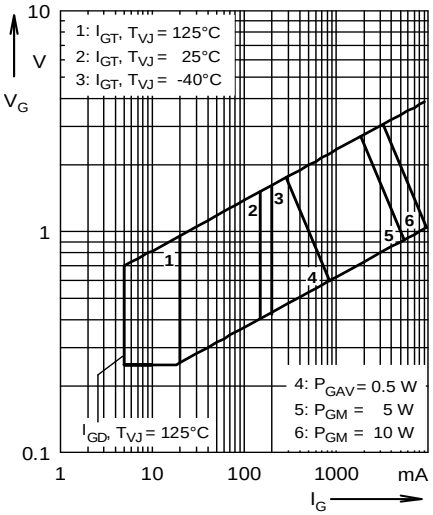


Fig. 1 Gate trigger characteristics

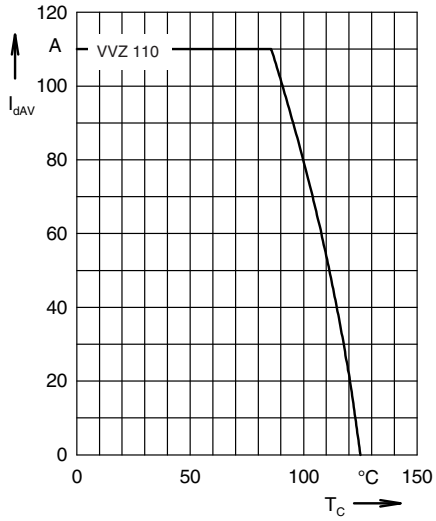
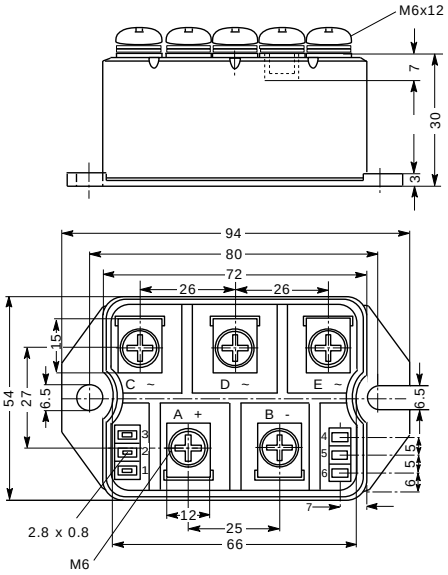


Fig. 2 DC output current at case temperature

Dimensions in mm (1 mm = 0.0394")



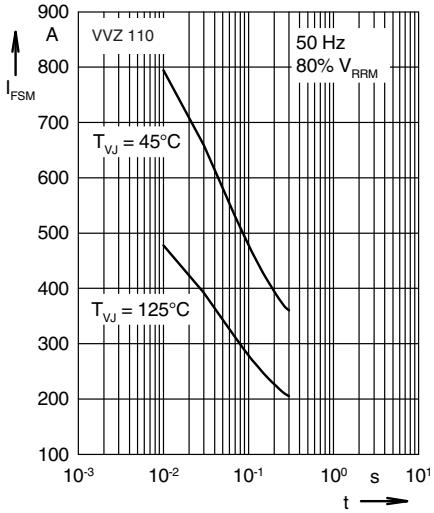


Fig. 3 Surge overload current
I_{FSM}: Crest value, t: duration

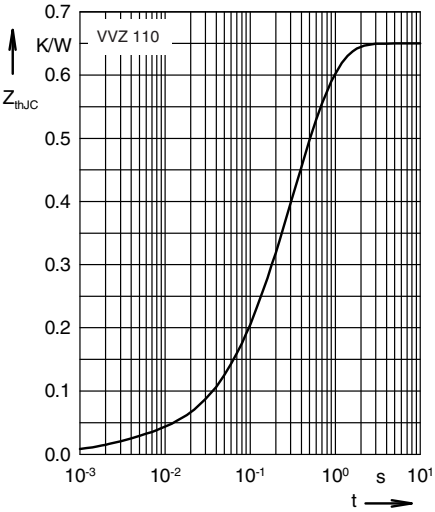


Fig. 4 Transient thermal impedance junction to case (per leg)

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