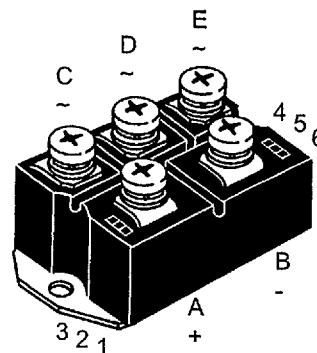
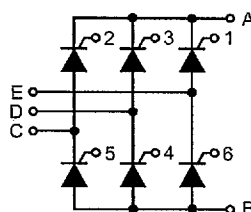


Three Phase Full Controlled Rectifier Bridge, B6C

$$I_{dAVM} = 110/167 \text{ A}$$

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

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
1300	1200	VTO 110-12io7
1500	1400	VTO 110-14io7
1700	1600	VTO 175-12io7 VTO 175-14io7 VTO 175-16io7



Symbol	Test Conditions	Maximum Ratings		
		VTO 110	VTO 175	
I_{dAV}	$T_C = 85^{\circ}\text{C}$; module	110	167	A
I_{FRMS}, I_{TRMS}	per leg	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 ² s
	$V_R = 0$ $t = 8.3\text{ ms}$ (60 Hz), sine	6280	10750	A ² s
	$T_{VJ} = T_{VJM}$ $t = 10\text{ ms}$ (50 Hz), sine	5000	9100	A ² s
	$V_R = 0$ $t = 8.3\text{ ms}$ (60 Hz), sine	4750	8830	A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ repetitive, $I_T = 50\text{ A}$ $f = 400\text{ Hz}$, $t_p = 200\text{ }\mu\text{s}$ $V_D = 2/3 V_{DRM}$ $I_G = 0.3\text{ A}$, non repetitive $di_G/dt = 0.3\text{ A}/\mu\text{s}$, $I_T = 1/3 \cdot I_{dAV}$	150		A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $V_{DR} = 2/3 V_{DRM}$ $R_{GK} = \infty$; method 1 (linear voltage rise)	1000		V/ μs
V_{RGM}		10		V
P_{GM}	$T_{VJ} = T_{VJM}$ $t_p = 30\text{ }\mu\text{s}$	≤ 10		W
	$I_T = I_{TAVM}$ $t_p = 500\text{ }\mu\text{s}$	≤ 5		W
	$t_p = 10\text{ ms}$	≤ 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		lb.in.
Weight	typ.	300		g

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

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			
		VTO 110		VTO 175	
I_R, I_D	$V_R = V_{RRM}; V_D = V_{DRM}$ $T_{VJ} = T_{VJM}$ $T_{VJ} = 25^{\circ}\text{C}$	$\leq$ $\leq$	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}	$V_D = 6 \text{ V};$ $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = -40^{\circ}\text{C}$	$\leq$ $\leq$	1.5 1.6	V V	
I_{GT}	$V_D = 6 \text{ V};$ $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = -40^{\circ}\text{C}$	$\leq$ $\leq$	100 200	mA mA	
V_{GD}	$T_{VJ} = T_{VJM};$ $T_{VJ} = T_{VJM};$	$V_D = 2/3 V_{DRM}$ $V_D = 2/3 V_{DRM}$	$\leq$ $\leq$	0.2 5	V 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	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	

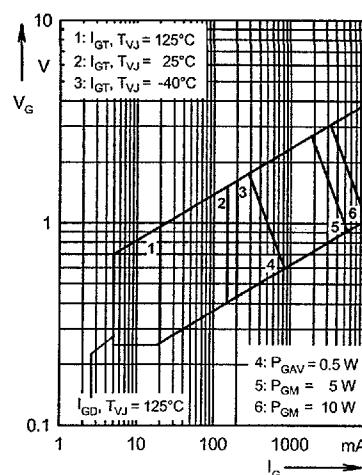


Fig. 1 Gate trigger characteristics

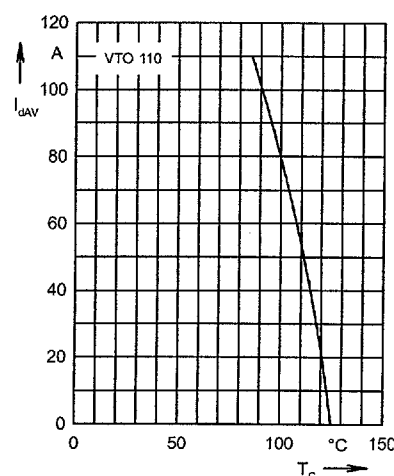


Fig. 2 DC output current at case temperature

Dimensions in mm (1 mm = 0.0394")

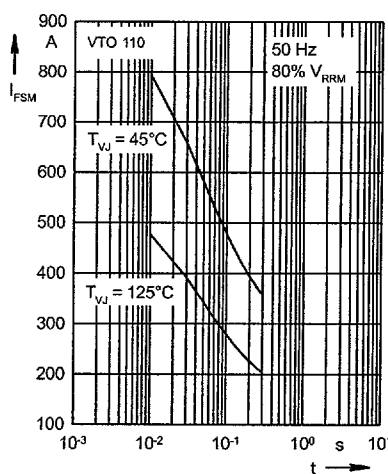
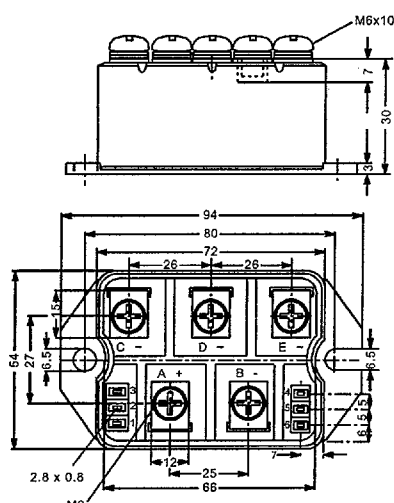


Fig. 3 Surge overload current
 I_{FSM} : Crest value, t : duration

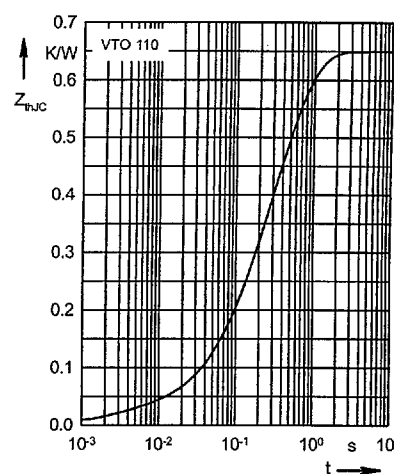


Fig. 4 Transient thermal impedance
junction to case (per leg)