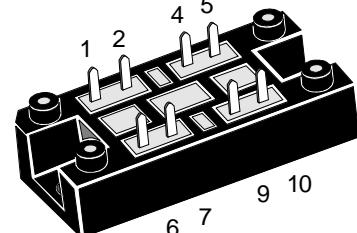
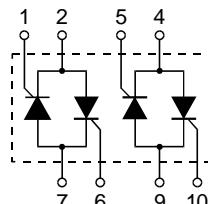


AC Controller Modules

$I_{RMS} = 2 \times 30 \text{ A}$
 $V_{RRM} = 800-1600 \text{ V}$

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
800	800	VW2x30-08io1
1200	1200	VW2x30-12io1
1400	1400	VW2x30-14io1
1600	1600	VW2x30-16io1



Symbol	Test Conditions	Maximum Ratings		
I_{RMS}	$T_c = 85^\circ\text{C}$, (per phase)	30	A	
I_{TRMS}	$T_{VJ} = T_{VJM}$	22	A	
I_{TAVM}	$T_c = 85^\circ\text{C}$; (180° sine ; per thyristor)	14	A	
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0$	200 210	A A	
	$T_{VJ} = T_{VJM}$ $V_R = 0$	180 190	A A	
I^2t	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0$	200 190	A^2s A^2s	
	$T_{VJ} = T_{VJM}$ $V_R = 0$	160 150	A^2s A^2s	
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ $f = 50 \text{ Hz}$, $t_p = 200 \mu\text{s}$ $V_D = 2/3 V_{DRM}$ $I_G = 0.45 \text{ A}$ $di_G/dt = 0.45 \text{ A}/\mu\text{s}$	repetitive, $I_T = 45 \text{ A}$ non repetitive, $I_T = I_{TAVM}$	100 500	$\text{A}/\mu\text{s}$ $\text{A}/\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $R_{GK} = \infty$; method 1 (linear voltage rise)	$V_{DR} = 2/3 V_{DRM}$	1000	$\text{V}/\mu\text{s}$
P_{GM}	$T_{VJ} = T_{VJM}$ $I_T = I_{TAVM}$	$t_p = 30 \mu\text{s}$ $t_p = 300 \mu\text{s}$	10 5	W W
P_{GAVM}			0.5	W
V_{RGM}			10	V
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 $I_{ISOL} \leq 1 \text{ mA}$	$t = 1 \text{ min}$ $t = 1 \text{ s}$	3000 3600	V_\sim V_\sim
M_d	Mounting torque (M5)		2-2.5/18-22	Nm/lb.in.
Weight	typ.	35	g	

Data according to IEC 60747 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		
I_D, I_R	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	\leq	5	mA
V_T	$I_T = 45 \text{ A}; T_{VJ} = 25^\circ\text{C}$	\leq	1.81	V
V_{TO}	For power-loss calculations only		0.8	V
r_T			25	$\text{m}\Omega$
V_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$	\leq	1.5	V
I_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$	\leq	100	mA
V_{GD}	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	\leq	0.2	V
I_{GD}		\leq	5	mA
I_L	$T_{VJ} = 25^\circ\text{C}; t_p = 10 \mu\text{s}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$	\leq	450	mA
I_H	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$	\leq	200	mA
t_{gd}	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$	\leq	2	μs
t_q	$T_{VJ} = T_{VJM}; I_T = 20 \text{ A}, t_p = 200 \mu\text{s}; di/dt = -10 \text{ A}/\mu\text{s}$ $V_R = 100 \text{ V}; dv/dt = 15 \text{ V}/\mu\text{s}; V_D = 2/3 V_{DRM}$	typ.	150	μs
R_{thJC}	per thyristor; DC		1.7	K/W
	per module		0.43	K/W
R_{thJK}	per thyristor; DC		2.0	K/W
	per module		0.5	K/W
d_s	Creeping distance on surface		12.7	mm
d_A	Creepage distance in air		9.4	mm
a	Max. allowable acceleration		50	m/s^2

Dimensions in mm (1 mm = 0.0394")

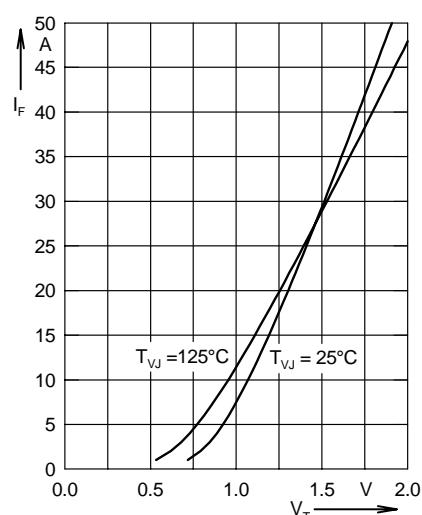
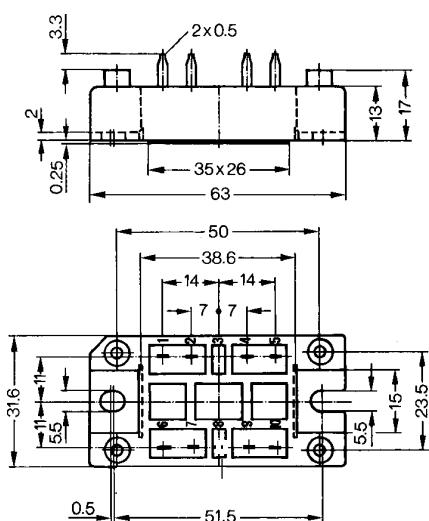


Fig. 3 Forward current versus voltage drop per leg

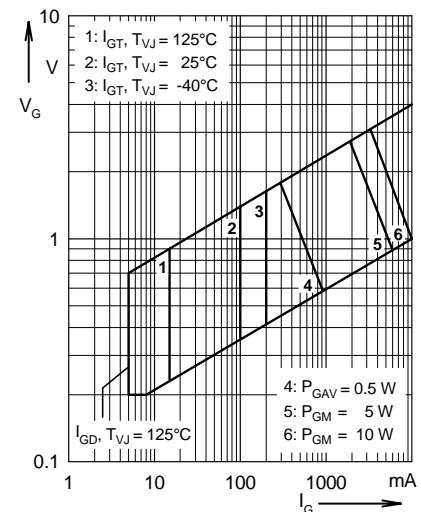


Fig. 1 Gate trigger characteristics

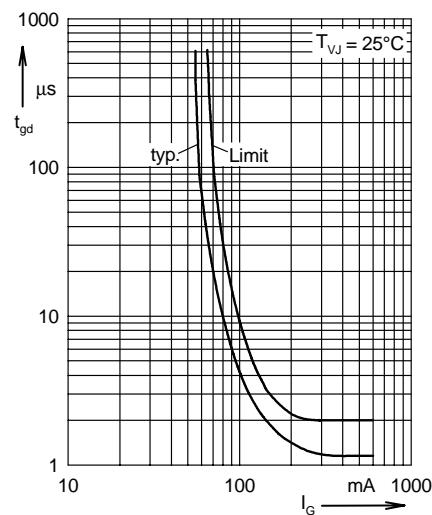


Fig. 2 Gate trigger delay time

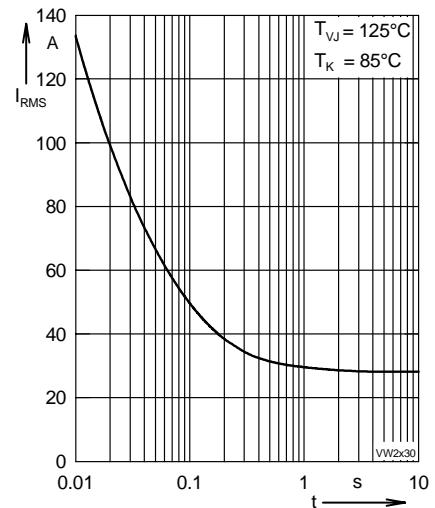


Fig. 4 Rated RMS current versus time (360° conduction)

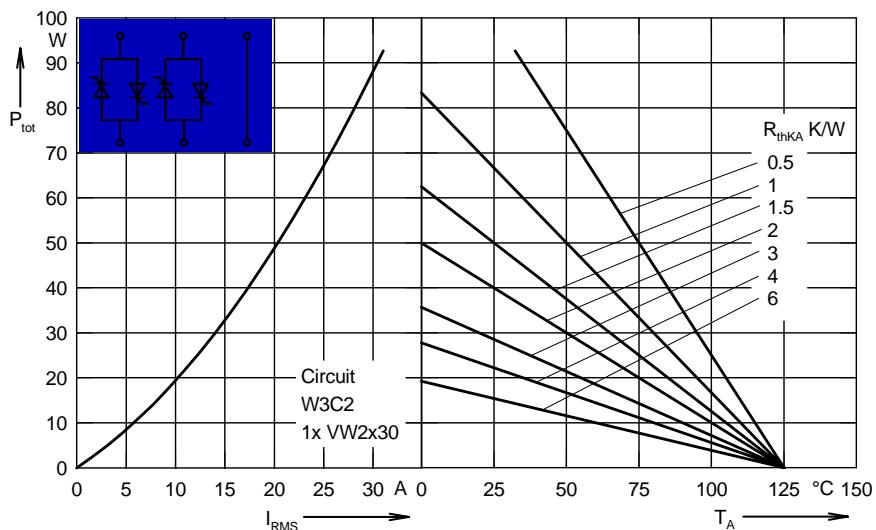


Fig. 5 Load current capability for two phase AC controller

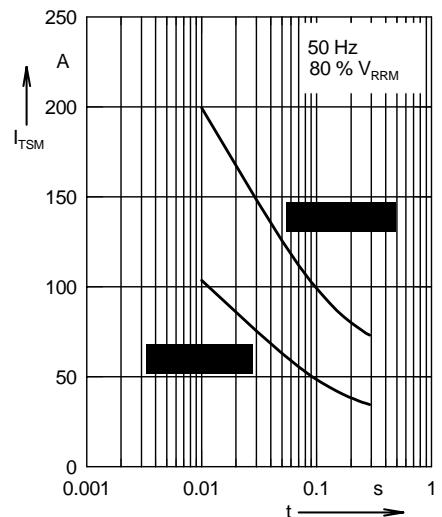


Fig. 6 Surge overload current

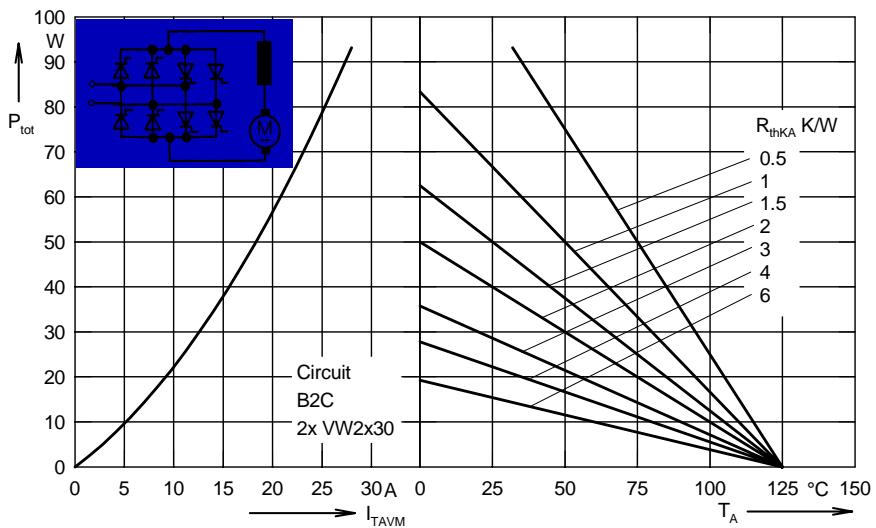


Fig. 7 Power dissipation versus direct output current and ambient temperature cyclo converter, four quadrant operation

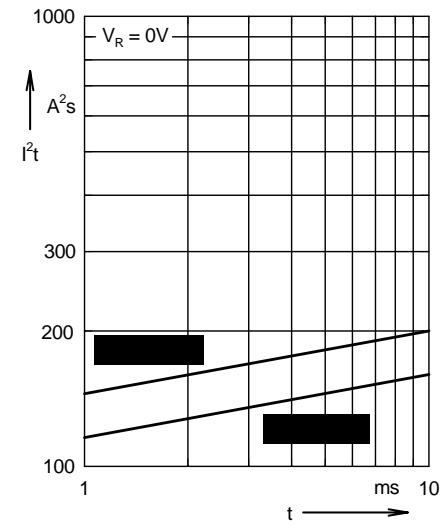


Fig. 8 I^2t versus time (per thyristor)

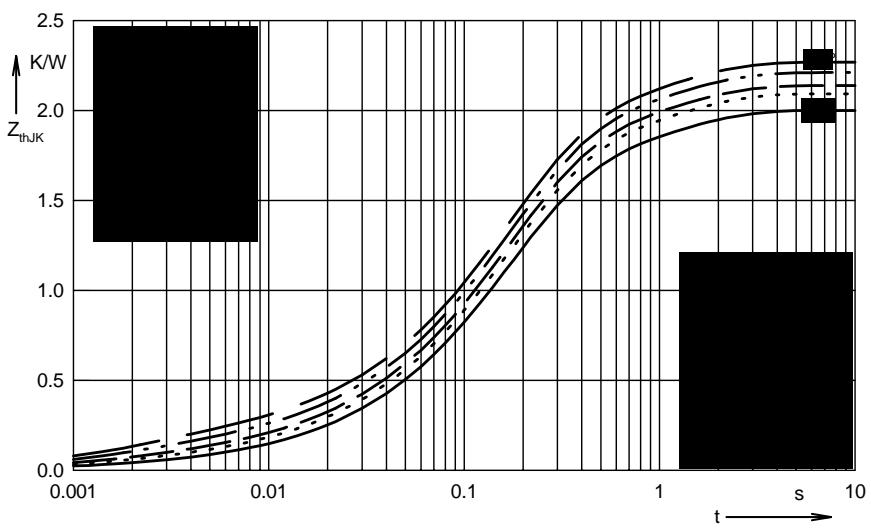


Fig. 9 Transient thermal impedance junction to heatsink (per thyristor)

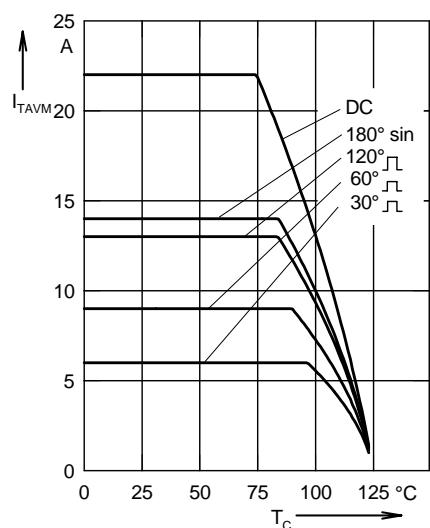


Fig. 10 Maximum forward current at case temperature