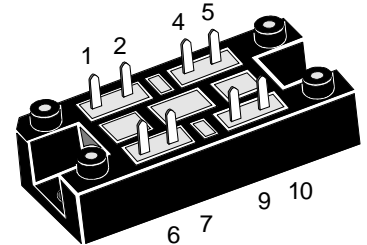
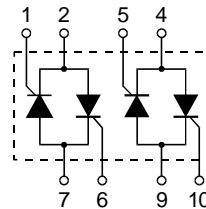


AC Controller Modules

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

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



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Symbol	Test Conditions	Maximum Ratings	
I_{RMS}	$T_C = 85^\circ C$, (per phase)	30	A
I_{TRMS}	$T_{VJ} = T_{VJM}$	22	A
I_{TAVM}	$T_C = 85^\circ C$; (180° sine ; per thyristor)	14	A
I_{TSM}	$T_{VJ} = 45^\circ C$; $V_R = 0$	t = 10 ms (50 Hz), sine	200 A
		t = 8.3 ms (60 Hz), sine	210 A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	180 A
	$V_R = 0$	t = 8.3 ms (60 Hz), sine	190 A
I^2t	$T_{VJ} = 45^\circ C$	t = 10 ms (50 Hz), sine	200 A ² s
	$V_R = 0$	t = 8.3 ms (60 Hz), sine	190 A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50 Hz, $t_p = 200\ \mu s$ $V_D = 2/3 V_{DRM}$	repetitive, $I_T = 45\ A$	100 A/ μs
	$I_G = 0.45\ A$ $di_G/dt = 0.45\ A/\mu s$	non repetitive, $I_T = I_{TAVM}$	500 A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $R_{GK} = \infty$; method 1 (linear voltage rise)	$V_{DR} = 2/3 V_{DRM}$	1000 V/ μs
P_{GM}	$T_{VJ} = T_{VJM}$	$t_p = 30\ \mu s$	10 W
	$I_T = I_{TAVM}$	$t_p = 300\ \mu s$	5 W
P_{GAVM}			0.5 W
V_{RGM}			10 V
T_{VJ}		-40...+125	°C
T_{VJM}		125	°C
T_{stg}		-40...+125	°C
V_{ISOL}	50/60 Hz, RMS	t = 1 min	3000 V~
	$I_{ISOL} \leq 1\ mA$	t = 1 s	3600 V~
M_d	Mounting torque (M5)		2-2.5/18-22 Nm/lb.in.
Weight	typ.		35 g

Features

- Thyristor controller for AC (circuit W2C acc. to IEC) for mains frequency
- Soldering connections for PCB mounting
- Isolation voltage 3600 V~
- Planar passivated chips
- UL applied

Applications

- Switching and control of three phase AC circuits
- Softstart AC motor controller
- Solid state switches
- Light and temperature control

Advantages

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

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	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	≤ 5 mA
V_T	$I_T = 45$ A; $T_{VJ} = 25^\circ\text{C}$	≤ 1.81 V
V_{T0}	For power-loss calculations only	0.8 V
r_T		25 m Ω
V_{GT}	$V_D = 6$ V; $T_{VJ} = 25^\circ\text{C}$	≤ 1.5 V
	$T_{VJ} = -40^\circ\text{C}$	≤ 1.6 V
I_{GT}	$V_D = 6$ V; $T_{VJ} = 25^\circ\text{C}$	≤ 100 mA
	$T_{VJ} = -40^\circ\text{C}$	≤ 200 mA
V_{GD}	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	≤ 0.2 V
I_{GD}		≤ 5 mA
I_L	$T_{VJ} = 25^\circ\text{C}; t_p = 10$ μs $I_G = 0.45$ A; $di_G/dt = 0.45$ A/ μs	≤ 450 mA
I_H	$T_{VJ} = 25^\circ\text{C}; V_D = 6$ V; $R_{GK} = \infty$	≤ 200 mA
t_{gd}	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.45$ A; $di_G/dt = 0.45$ A/ μs	≤ 2 μs
t_q	$T_{VJ} = T_{VJM}; I_T = 20$ A, $t_p = 200$ μs ; $di/dt = -10$ A/ μs $V_R = 100$ V; $dv/dt = 15$ V/ μs ; $V_D = 2/3 V_{DRM}$	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

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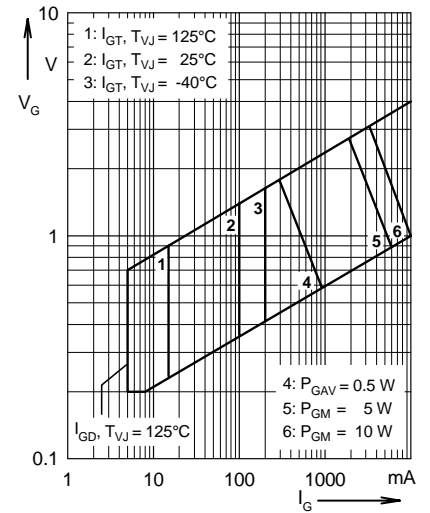


Fig. 1 Gate trigger characteristics

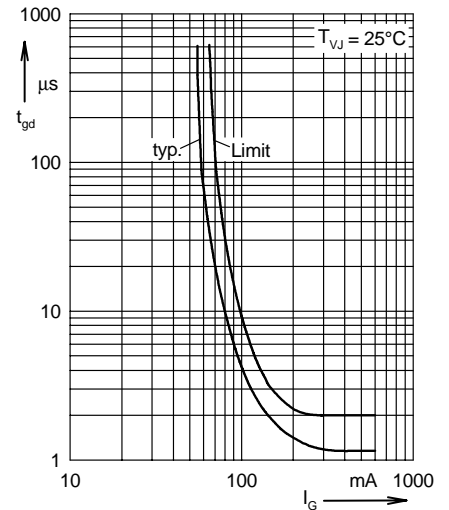


Fig. 2 Gate trigger delay time

Dimensions in mm (1 mm = 0.0394")

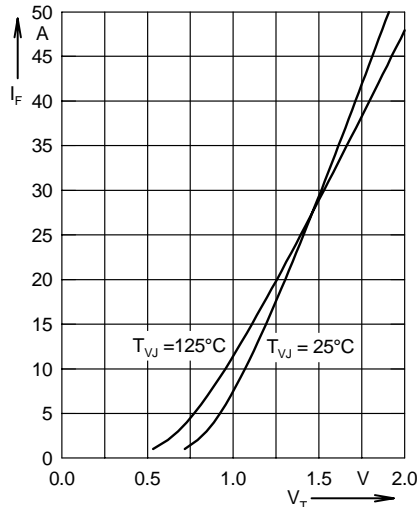
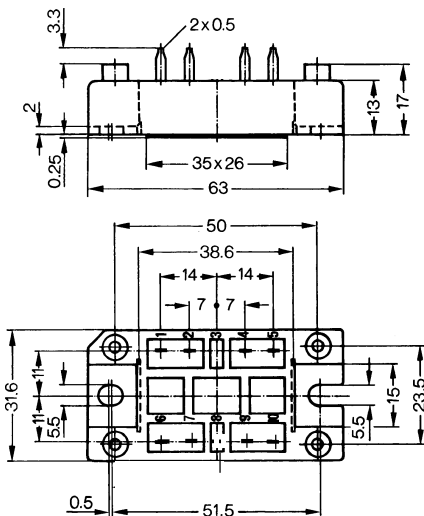


Fig. 3 Forward current versus voltage drop per leg

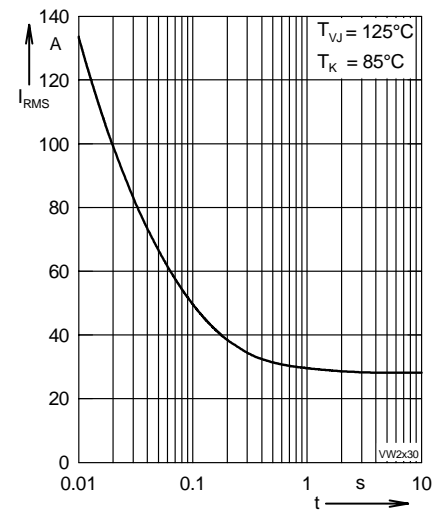


Fig. 4 Rated RMS current versus time (360° conduction)

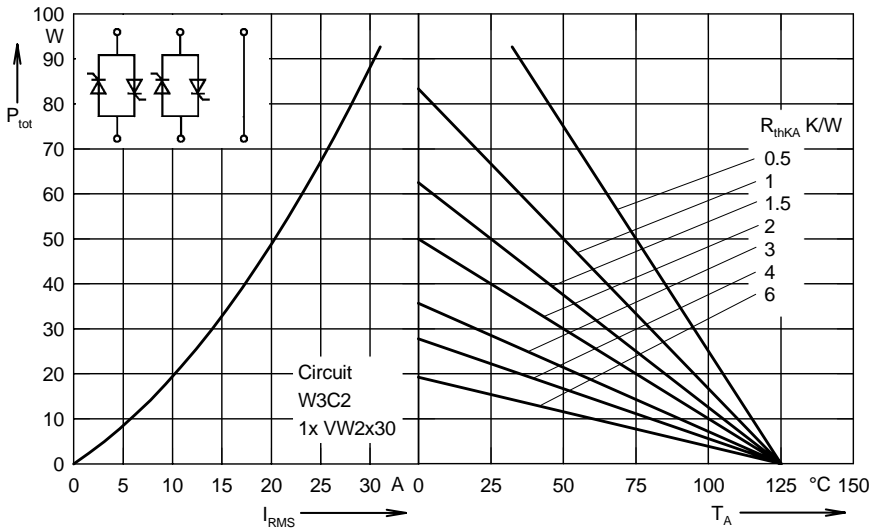


Fig. 5 Load current capability for two phase AC controller

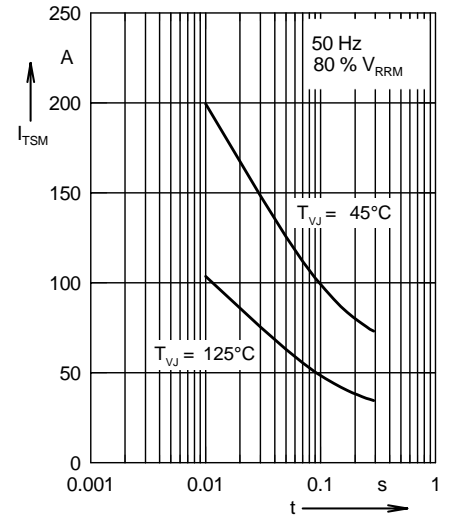


Fig. 6 Surge overload current

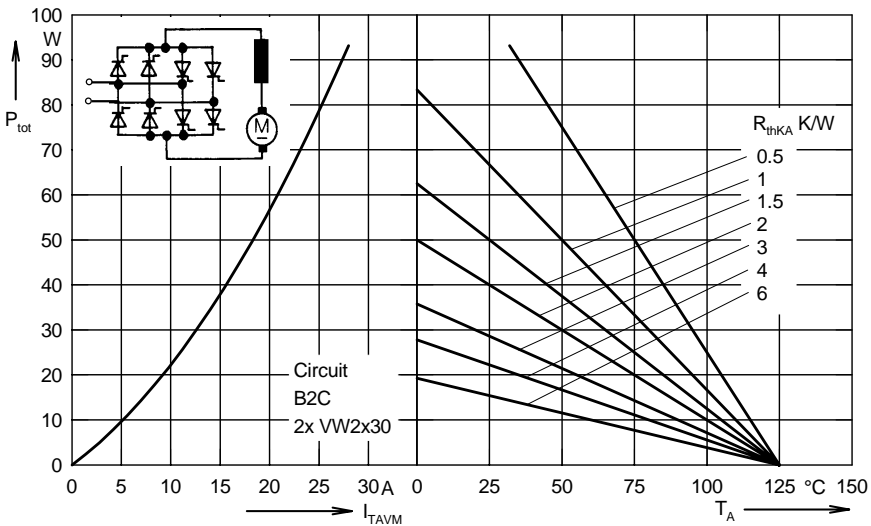


Fig. 7 Power dissipation versus direct output current and ambient temperature cyclo converter, four quadrant operation

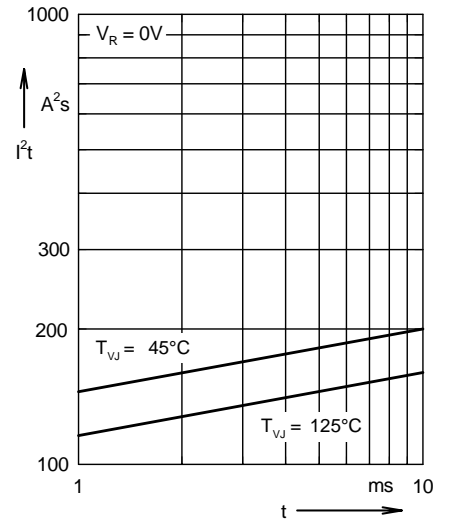


Fig. 8 I²t versus time (per thyristor)

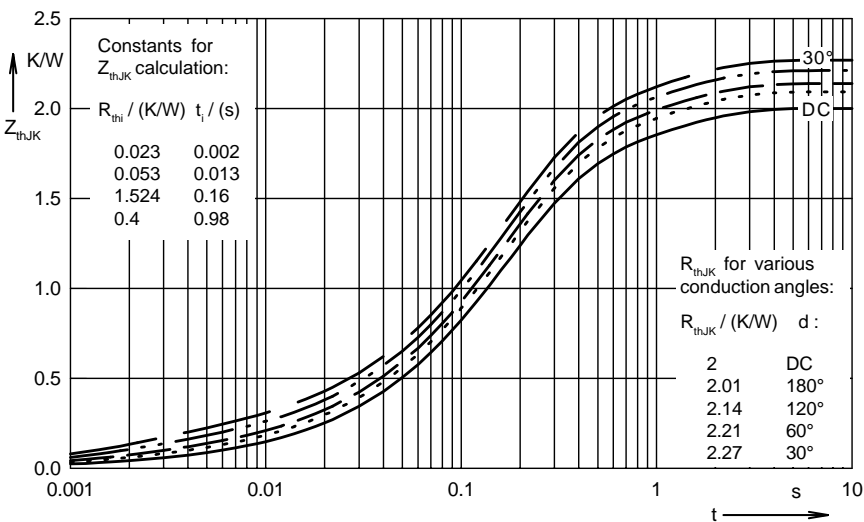


Fig. 9 Transient thermal impedance junction to heatsink (per thyristor)

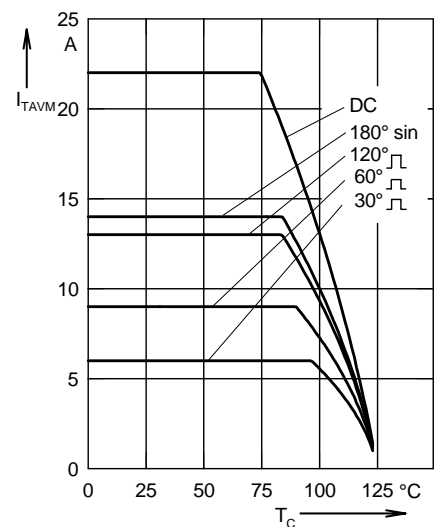


Fig. 10 Maximum forward current at case temperature