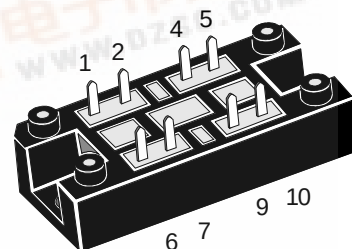
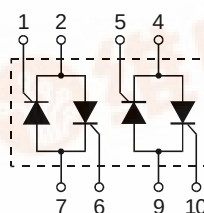


AC Controller Modules

$$I_{RMS} = 2 \times 30 \text{ A}$$

$$V_{RRM} = 800-1600 \text{ V}$$

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}	$T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine $V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	200 A 210 A
	$T_{VJ} = T_{VJM}$ $t = 10 \text{ ms}$ (50 Hz), sine $V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	180 A 190 A
I^2t	$T_{VJ} = 45^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine $V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	200 A ² s 190 A ² s
	$T_{VJ} = T_{VJM}$ $t = 10 \text{ ms}$ (50 Hz), sine $V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	160 A ² s 150 A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ repetitive, $I_T = 45 \text{ A}$ $f = 50 \text{ Hz}$, $t_p = 200 \mu\text{s}$ $V_D = 2/3 V_{DRM}$ $I_G = 0.45 \text{ A}$ non repetitive, $I_T = I_{TAVM}$ $di_G/dt = 0.45 \text{ A}/\mu\text{s}$	100 A/ μs 500 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
P_{GM}	$T_{VJ} = T_{VJM}$ $t_p = 30 \mu\text{s}$ $I_T = I_{TAVM}$ $t_p = 300 \mu\text{s}$	10 W 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 $t = 1 \text{ min}$ $I_{ISOL} \leq 1 \text{ mA}$ $t = 1 \text{ s}$	3000 V~ 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

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 mΩ
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

Dimensions in mm (1 mm = 0.0394")

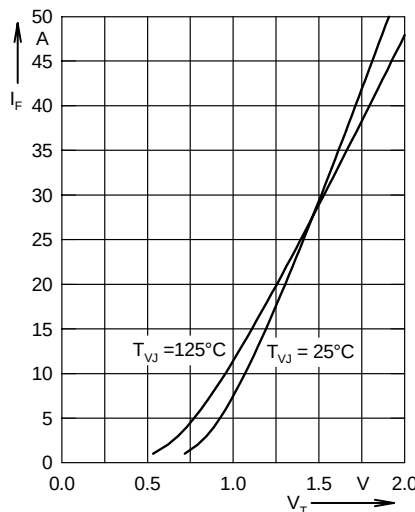
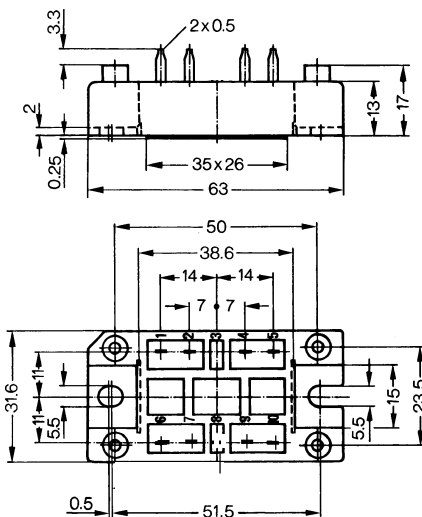


Fig. 3 Forward current versus voltage drop per leg

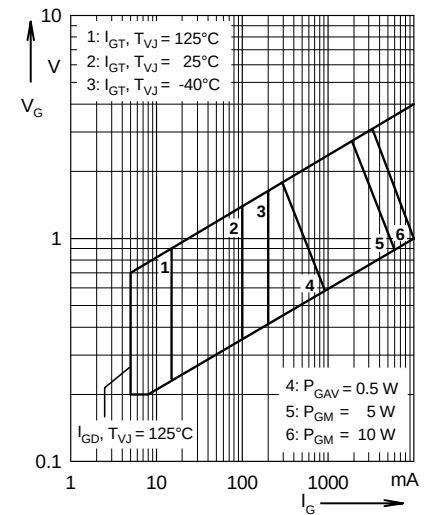


Fig. 1 Gate trigger characteristics

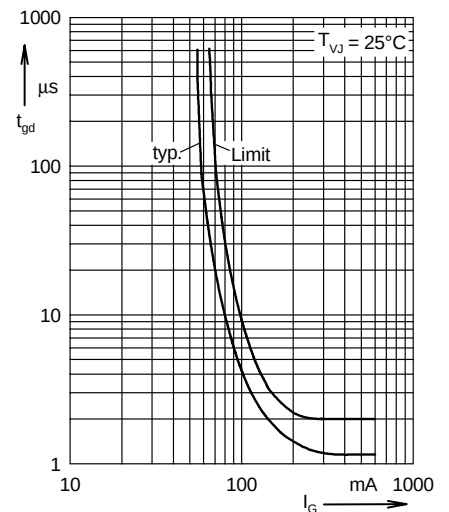


Fig. 2 Gate trigger delay time

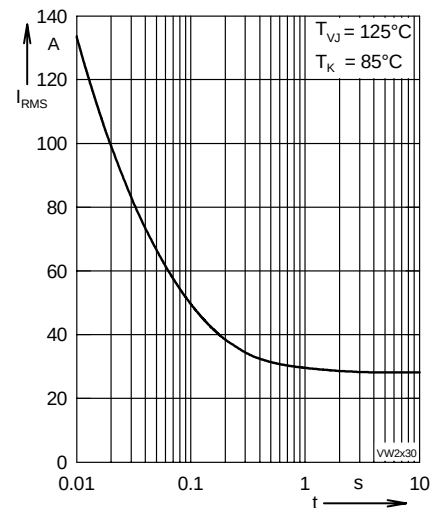


Fig. 4 Rated RMS current versus time (360° conduction)

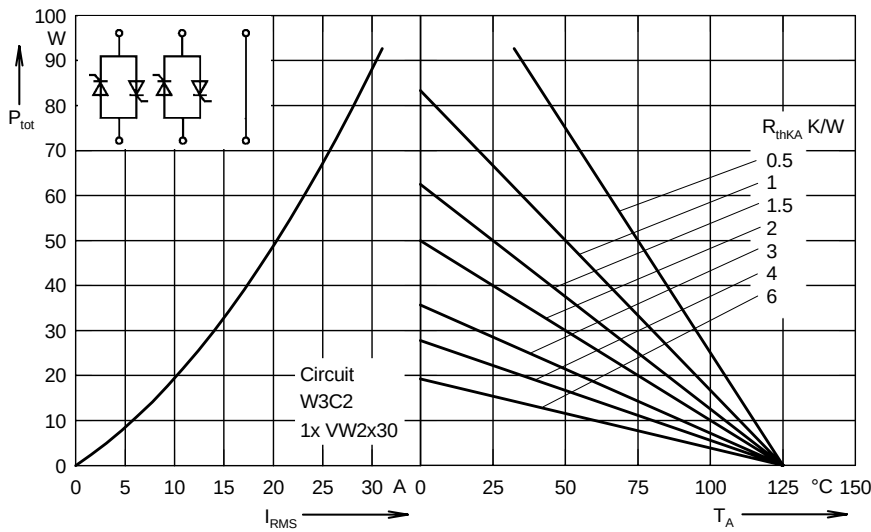


Fig. 5 Load current capability for two phase AC controller

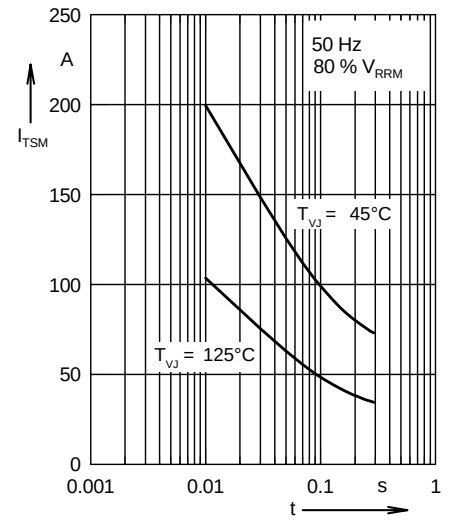


Fig. 6 Surge overload current

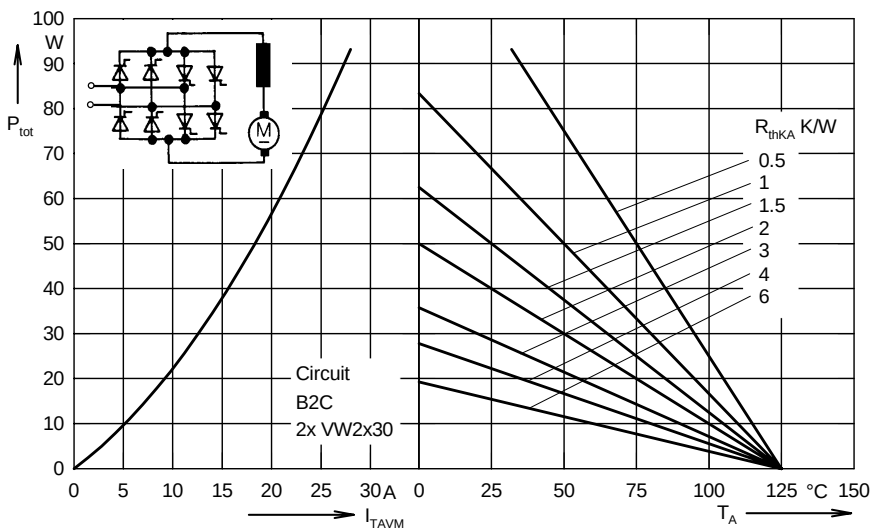


Fig. 7 Power dissipation versus direct output current and ambient temperature
cyclo converter, four quadrant operation

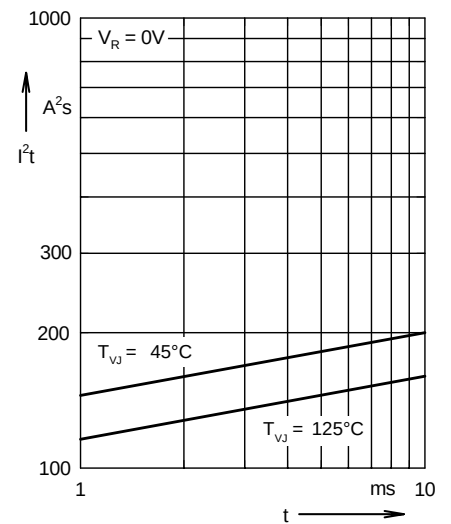


Fig. 8 I^2t versus time (per thyristor)

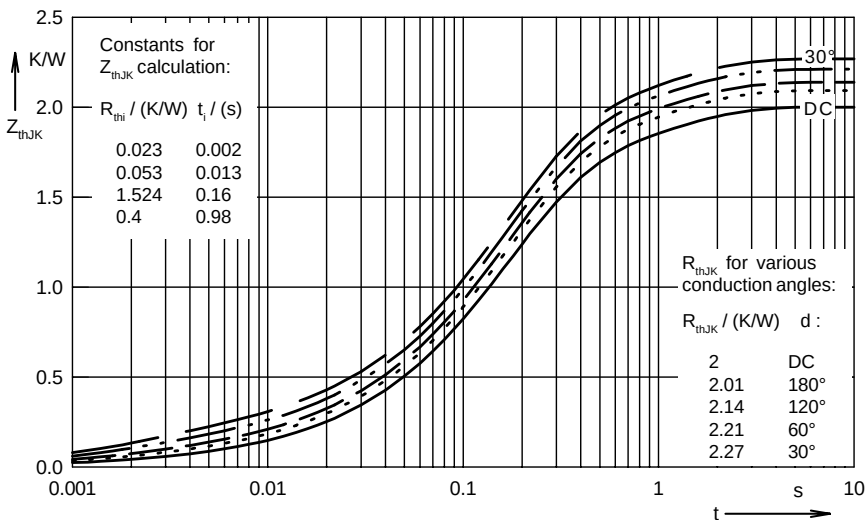


Fig. 9 Transient thermal impedance junction to heatsink (per thyristor)

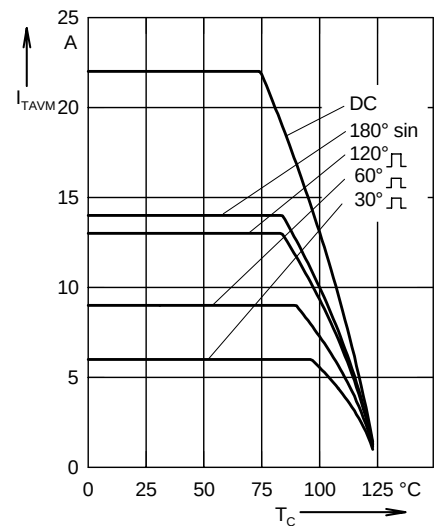


Fig. 10 Maximum forward current at case temperature