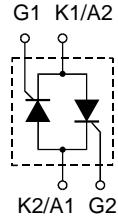


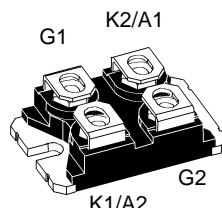
AC Controller Modules

I_{RMS} = 90 A
V_{RRM} = 1200-1600 V

V _{RSM}	V _{RRM}	Type
V _{DSM}	V _{DRM}	
V	V	
1200	1200	MMO 90-12io6
1600	1600	MMO 90-16io6



miniBLOC, SOT-227 B



Symbol	Test Conditions	Maximum Ratings		
I _{RMS}	T _C = 110°C, 50 - 400 Hz, module	90	A	
I _{TRMS}	T _{VJ} = T _{VJM}	65	A	
I _{TAVM}	T _C = 110°C; (180° sine)	41	A	
I _{TSM}	T _{VJ} = 45°C; V _R = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	800 860	A A
	T _{VJ} = T _{VJM} V _R = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	700 750	A A
I ² t	T _{VJ} = 45°C V _R = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	3200 3110	A ² s A ² s
	T _{VJ} = T _{VJM} V _R = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	2450 2360	A ² s A ² s
(di/dt) _{cr}	T _{VJ} = T _{VJM} f = 50 Hz, t _p = 200 µs	repetitive, I _T = 150 A	100	A/µs
	V _D = 2/3 V _{DRM} I _G = 0.3 A di _G /dt = 0.3 A/µs	non repetitive, I _T = I _{TAVM}	500	A/µs
(dv/dt) _{cr}	T _{VJ} = T _{VJM} R _{GK} = ∞; method 1 (linear voltage rise)	V _{DR} = 2/3 V _{DRM}	1000	V/µs
P _{GM}	T _{VJ} = T _{VJM} I _T = I _{TAVM}	t _p = 30 µs t _p = 300 µs	10 5	W W
P _{GAVM}			0.5	W
V _{RGM}			10	V
T _{VJ}			-40...+150	°C
T _{VJM}			150	°C
T _{stg}			-40...+150	°C
V _{ISOL}	50/60 Hz, RMS;	I _{ISOL} ≤ 1 mA	2500	V~
M _d	Mounting torque (M4)		1.1 - 1.5 / 9 - 13	Nm/lb.in.
	Terminal connection torque (M4)		1.1 - 1.5 / 9 - 13	Nm/lb.in.
Weight	typ.		30	g

Data according to IEC 60747 and 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	$T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$; $V_D = V_{DRM}$	≤	20	mA
V_T	$I_T = 80$; $T_{VJ} = 25^\circ C$	≤	1.43	V
V_{TO}	For power-loss calculations only		0.9	V
r_T			5.8	$m\Omega$
V_{GT}	$V_D = 6$ V; $T_{VJ} = 25^\circ C$	≤	1.5	V
	$T_{VJ} = -40^\circ C$	≤	1.6	V
I_{GT}	$V_D = 6$ V; $T_{VJ} = 25^\circ C$	≤	100	mA
	$T_{VJ} = -40^\circ C$	≤	200	mA
V_{GD}	$T_{VJ} = T_{VJM}$; $V_D = \frac{2}{3} V_{DRM}$	≤	0.2	V
I_{GD}		≤	5	mA
I_L	$T_{VJ} = 25^\circ C$; $t_p = 10$ μs $I_G = 0.3$ A; $di_G/dt = 0.3$ A/ μs	≤	250	mA
I_H	$T_{VJ} = 25^\circ C$; $V_D = 6$ V; $R_{GK} = \infty$	≤	100	mA
t_{gd}	$T_{VJ} = 25^\circ C$; $V_D = \frac{1}{2} V_{DRM}$ $I_G = 0.3$ A; $di_G/dt = 0.3$ 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 ; $V_D = \frac{2}{3} V_{DRM}$	typ.	150	μs
R_{thJC}	per thyristor; DC current		0.6	K/W
	per module		0.3	K/W
R_{thCH}	per thyristor; DC current		0.1	K/W
	per module		0.05	K/W
d_s	Creeping distance on surface		8	mm
d_A	Creepage distance in air		4	mm
a	Max. allowable acceleration		50	m/s^2

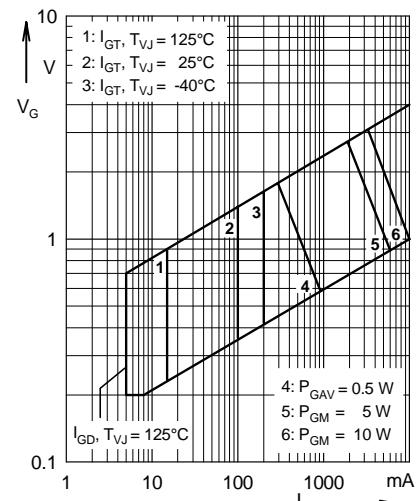


Fig. 1 Gate trigger characteristics

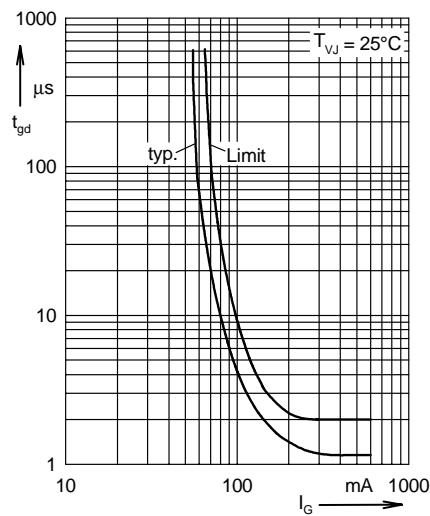
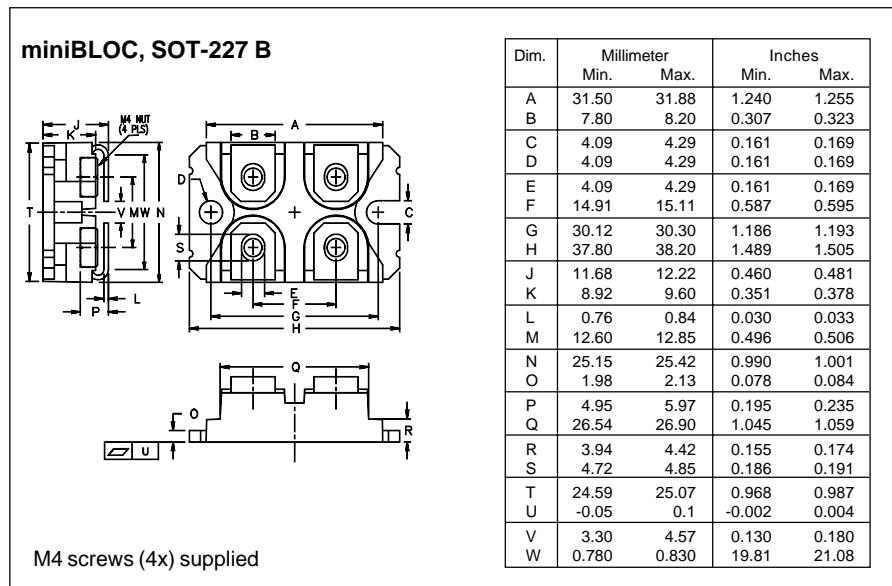


Fig. 2 Gate trigger delay time



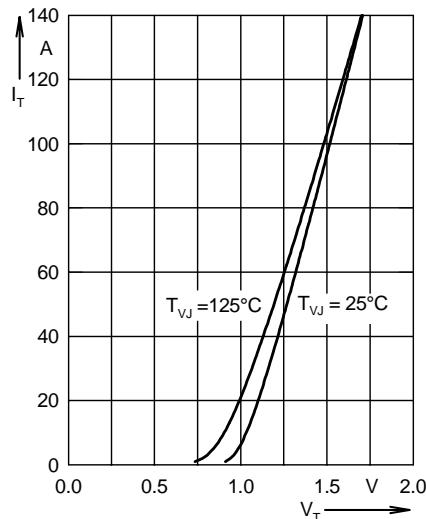


Fig. 3 Forward current versus voltage drop per leg

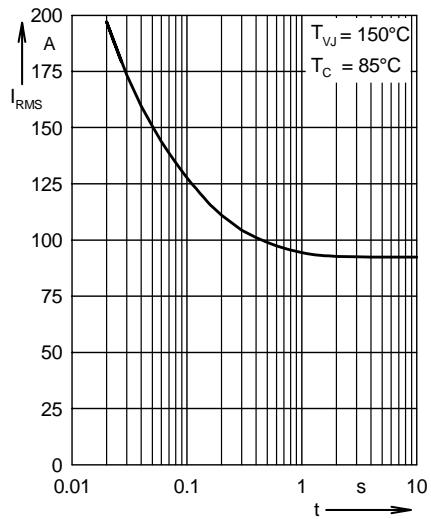


Fig. 4 Rated RMS current versus time (360° conduction)

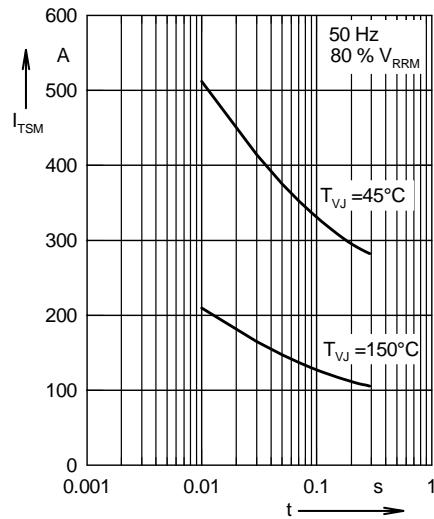


Fig. 5 Surge overload current

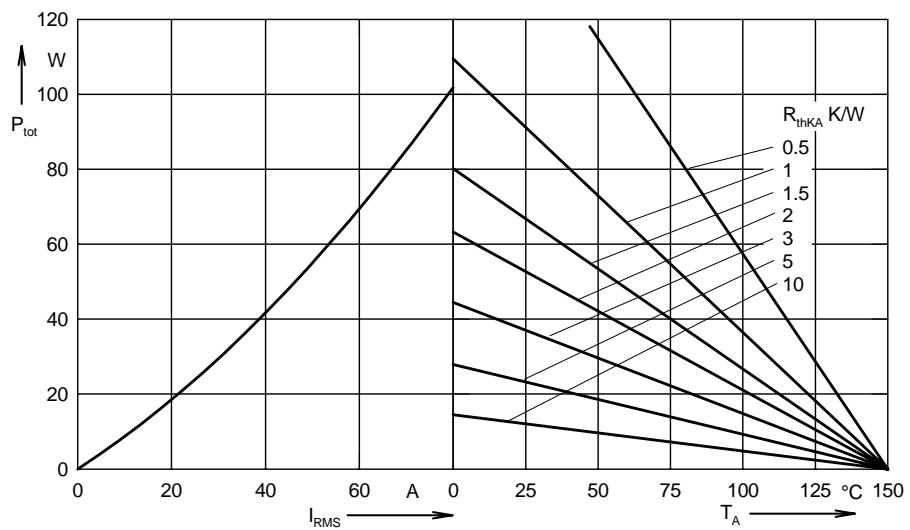


Fig. 6 Load current capability for single AC controller; 1 x MMO 90

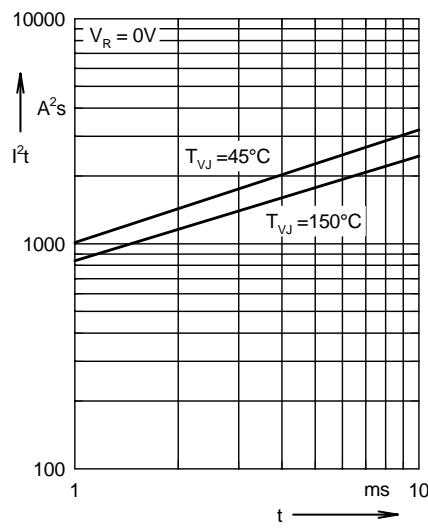


Fig. 7 I^2t versus time (per thyristor)

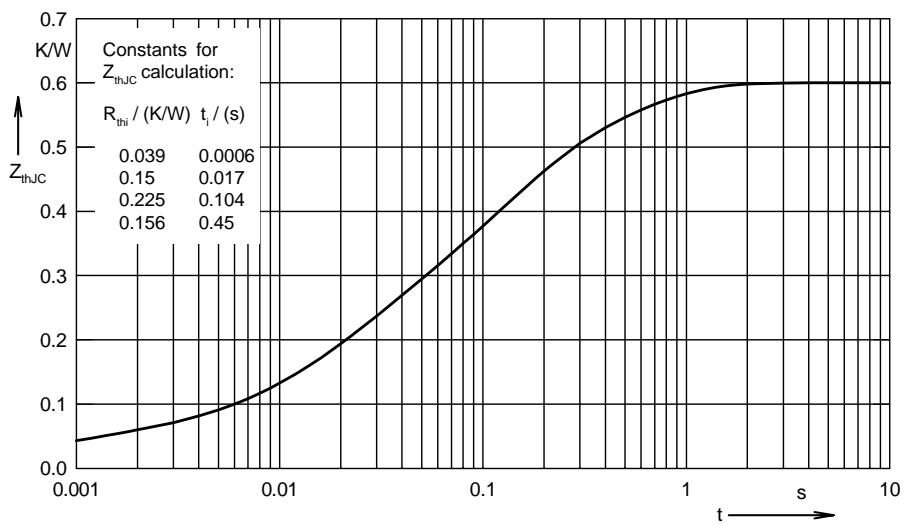


Fig. 8 Transient thermal impedance junction to case (per thyristor)

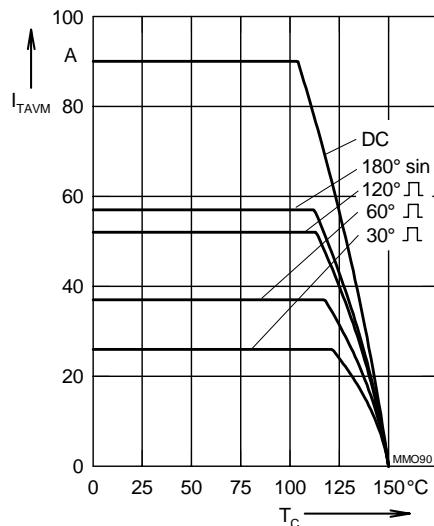


Fig. 9 Maximum forward current at case temperature