

ALTERNISTORS

- $(di/dt)_c > 213 \text{ A/ms (400 Hz)}$

APPLICATIONS

- POWER CONTROL ON INDUCTIVE LOAD (motor, transformer...)
- HIGH FREQUENCY OR HIGH $(di/dt)_c$ LEVEL CIRCUITS.


DESCRIPTION

New range of solid state AC - switches with very high commutating capability.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state Current (360° conduction angle)	$T_C = 75^\circ\text{C}$	60	A
I_{TSM}	Non Repetitive Surge Peak on-state Current	$t = 10 \text{ ms}$	500	A
		$t = 8.3 \text{ ms}$	550	
		$t = 2.5 \text{ ms}$	840	
I^2t	I^2t Value for Fusing	$t = 10 \text{ ms}$	1250	A^2s
di/dt	Critical Rate of Rise of on-state Current (1)		100	$\text{A}/\mu\text{s}$
T_{stg} T_I	Storage and Operating Junction Temperature Range		- 40 to 150	$^\circ\text{C}$
			- 40 to 125	

Symbol	Parameter	TGDV							Unit
		601	602	604	606	608	610	612	
V_{DRM}	Repetitive Peak off-state Voltage (2)	100	200	400	600	800	1000	1200	V

- (1) $I_G = 1.5 \text{ A}$ $di/dt = 1 \text{ A}/\mu\text{s}$
 (2) $T_I = 125^\circ\text{C}$.

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th (c-h)}$	Contact (case-heatsink) for Recommended Stud Torque	0.3	$^\circ\text{C}/\text{W}$
$R_{th (j-c)} \text{ DC}$	Junction to Case for DC	0.65	$^\circ\text{C}/\text{W}$
$R_{th (j-c)} \text{ AC}$	Junction to Case for 360° Conduction Angle ($F = 50 \text{ Hz}$)	0.48	$^\circ\text{C}/\text{W}$

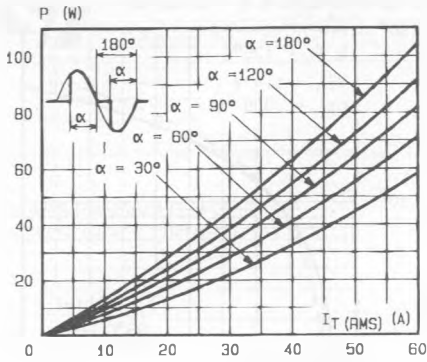


Fig. 1 - Maximum mean power dissipation versus RMS on-state current.

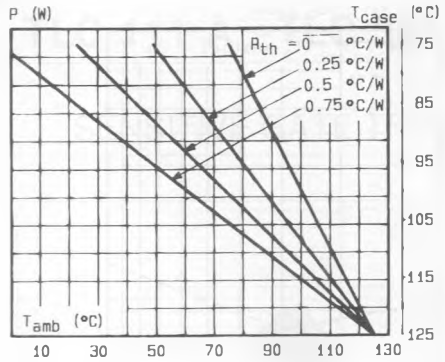


Fig. 2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

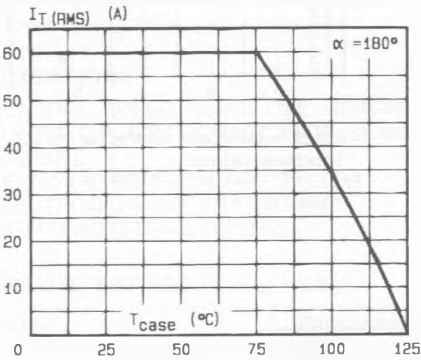


Fig. 3 - RMS on-state current versus case temperature.

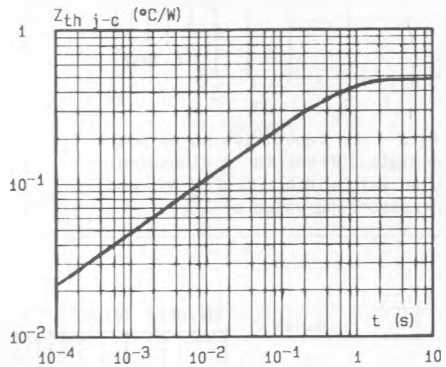


Fig. 4 - Thermal transient impedance junction to case versus pulse duration.

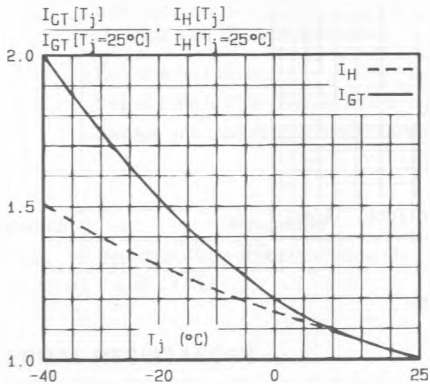


Fig. 5 - Relative variation of gate trigger current and holding current versus junction temperature.

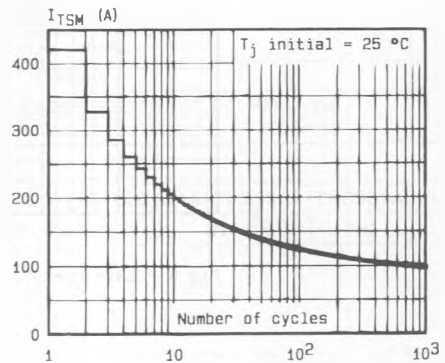


Fig. 6 - Non repetitive surge peak on-state current versus number of cycles.

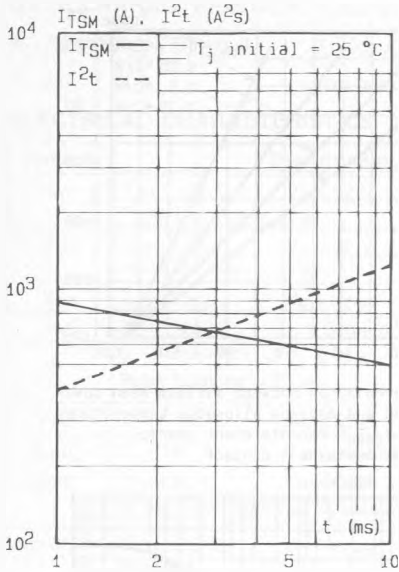


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

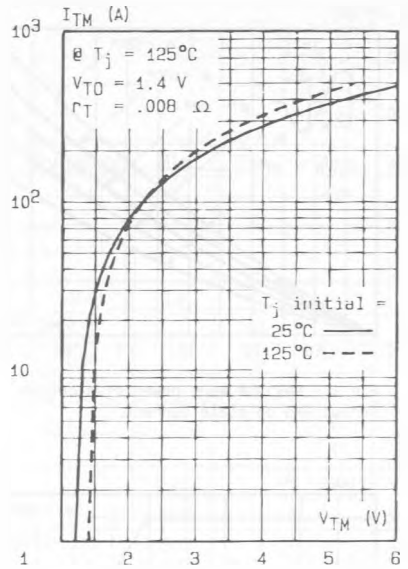


Fig.8 - On-state characteristics (maximum values) .

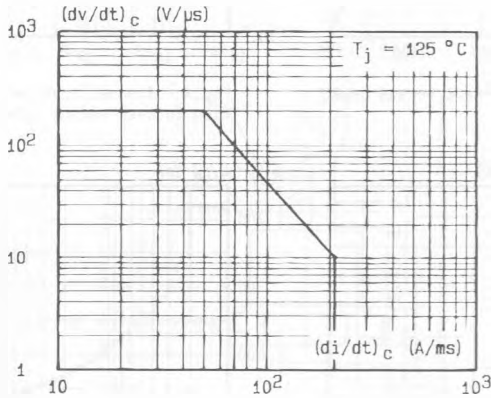


Fig.9 - Safe operating area.