

ALTERNISTORS

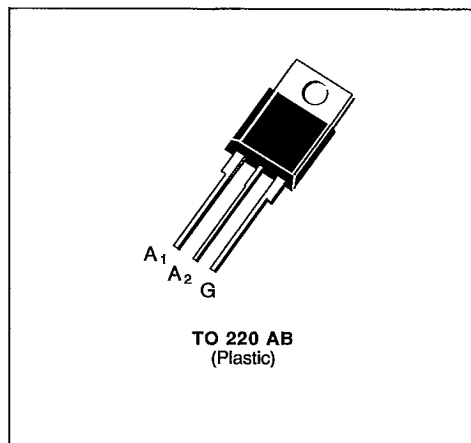
- $(di/dt)_c > 28 \text{ A/ms}$ (400 Hz)
- INSULATING VOLTAGE : 2500 V_{RMS}
($t \leq 1 \text{ mn}$ - $F = 50 \text{ Hz}$)
- UL RECOGNIZED (E81734)

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)	$T_C = 75^\circ\text{C}$	8	A
I_{TSM}	Non Repetitive Surge Peak on-state Current	$t = 10 \text{ ms}$	80	A
		$t = 8.3 \text{ ms}$	85	
		$t = 2.5 \text{ ms}$	115	
I^2t	I^2t Value for Fusing	$t = 10 \text{ ms}$	32	A ² s
di/dt	Critical Rate of Rise of on-state Current (1)		100	A/ μs
T_{sig} T_J	Storage and Operating Junction Temperature Range		- 40 to 150 - 40 to 110	$^\circ\text{C}$ $^\circ\text{C}$

Symbol	Parameter	TXDV				Unit
		208	408	608	808	
V_{DRM}	Repetitive Peak off-state Voltage (2)	200	400	600	800	V

(1) $I_a = 1 \text{ A}$ $di/dt = 1 \text{ A}/\mu\text{s}$

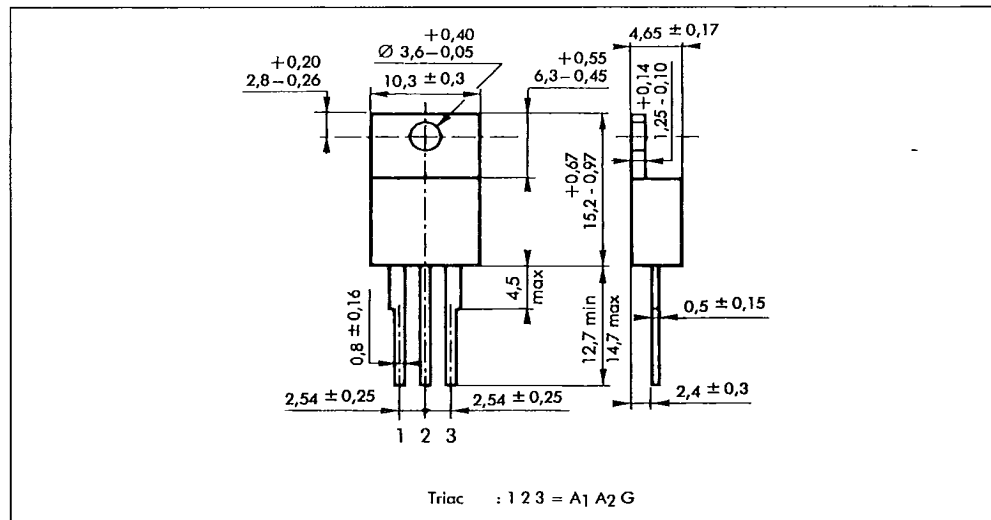
(2) $T_J = 110^\circ\text{C}$.

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction to Ambient	60	$^\circ\text{C/W}$
$R_{th(j-c)} \text{ DC}$	Junction to Case for DC	4	$^\circ\text{C/W}$
$R_{th(j-c)} \text{ AC}$	Junction to Case for 360° Conduction Angle ($F = 50 \text{ Hz}$)	3	$^\circ\text{C/W}$

GATE CHARACTERISTICS (maximum values) $P_{GM} = 40 \text{ W}$ ($t_p = 10 \mu\text{s}$) $I_{GM} = 4 \text{ A}$ ($t_p = 10 \mu\text{s}$) $P_{G(AV)} = 1 \text{ W}$ $V_{GM} = 16 \text{ V}$ ($t_p = 10 \mu\text{s}$)*T-25-15***ELECTRICAL CHARACTERISTICS**

Symbol	Test Conditions	Quadrants	Min.	Typ.	Max.	Unit
I_{GT}	$T_J = 25^\circ\text{C}$ $V_D = 12 \text{ V}$ $R_L = 33 \Omega$ Pulse Duration $> 20 \mu\text{s}$	I-II-III			100	mA
V_{GT}	$T_J = 25^\circ\text{C}$ $V_D = 12 \text{ V}$ $R_L = 33 \Omega$ Pulse Duration $> 20 \mu\text{s}$	I-II-III			1.5	V
V_{GD}	$T_J = 110^\circ\text{C}$ $V_D = V_{DRM}$ $R_L = 3.3 \text{ k}\Omega$	I-II-III	0.2			V
I_{H^*}	$T_J = 25^\circ\text{C}$ $I_T = 500 \text{ mA}$ Gate Open				100	mA
I_L	$T_J = 25^\circ\text{C}$ $V_D = 12 \text{ V}$ $I_G = 200 \text{ mA}$ Pulse Duration $> 20 \mu\text{s}$	I-III		100		mA
		II		200		
V_{TM}^*	$T_J = 25^\circ\text{C}$ $I_{TM} = 11 \text{ A}$ $t_p = 10 \text{ ms}$				1.8	V
I_{DRM}^*	$T_J = 110^\circ\text{C}$ V_{DRM} Specified				2	mA
dv/dt^*	$T_J = 110^\circ\text{C}$ Gate Open Linear Slope up to $V_D = 67\% V_{DRM}$		500			V/ μs
$(di/dt)_c^*$	$T_C = 75^\circ\text{C}$ $V_D = V_{DRM}$ $I_T = 11 \text{ A}$		7			A/ms
			28			
t_{gt}	$T_J = 25^\circ\text{C}$ $V_D = V_{DRM}$ $I_T = 11 \text{ A}$ $I_G = 0.5 \text{ A}$ $di_G/dt = 3.5 \text{ A}/\mu\text{s}$	I-II-III		2.5		μs

* For either polarity of electrode A_2 voltage with reference to electrode A_1 .**PACKAGE MECHANICAL DATA : TO 220 AB Plastic**

Cooling method : by conduction (method C)

Marking : type number

Weight : 2 g

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T-25-15

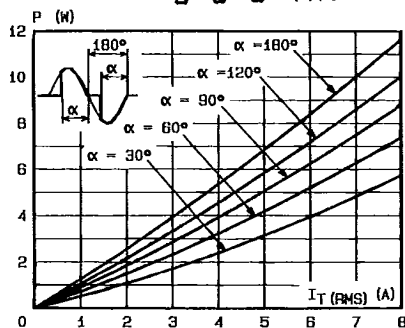


Fig.1 - Maximum mean power dissipation versus RMS on-state current.

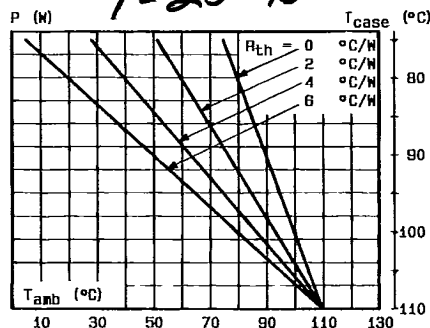


Fig.2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

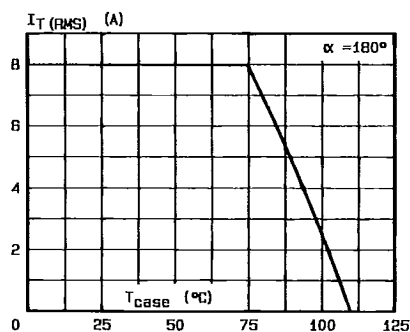


Fig.3 - RMS on-state current versus case temperature.

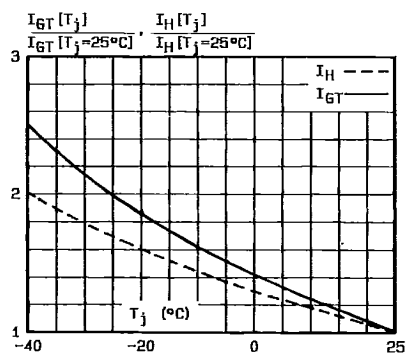


Fig.5 - Relative variation of gate trigger current and holding current versus junction temperature.

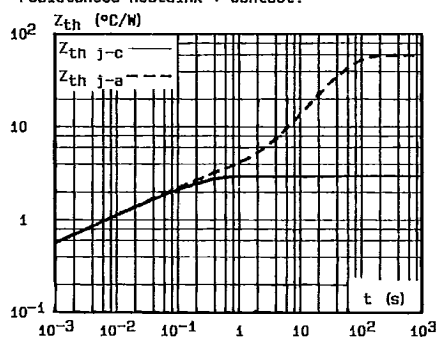


Fig.4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

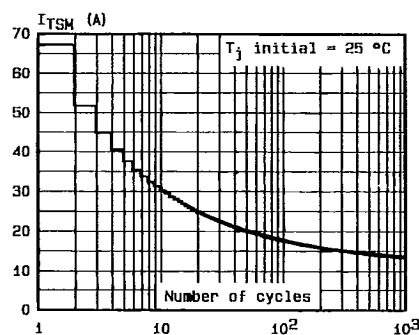


Fig.6 - Non repetitive surge peak on-state current versus number of cycles.

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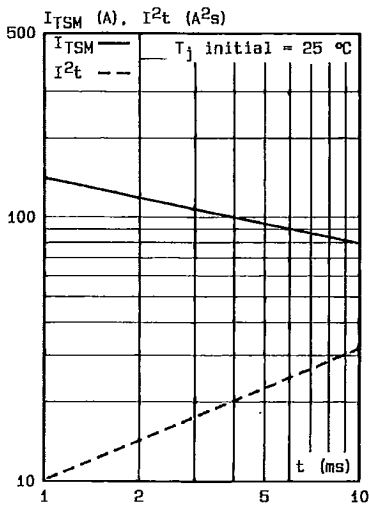


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

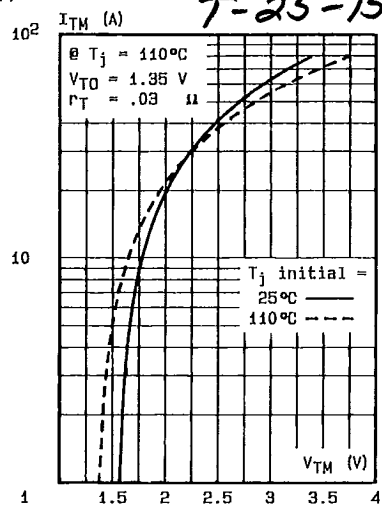


Fig.8 - Un-state characteristics (maximum values).

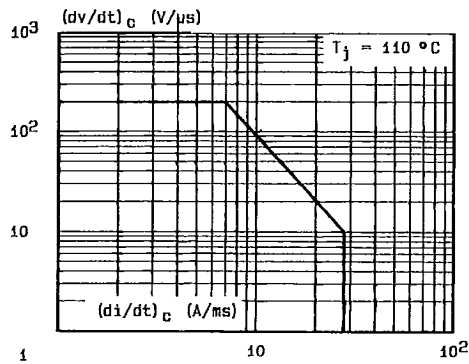


Fig.9 - Safe operating area.