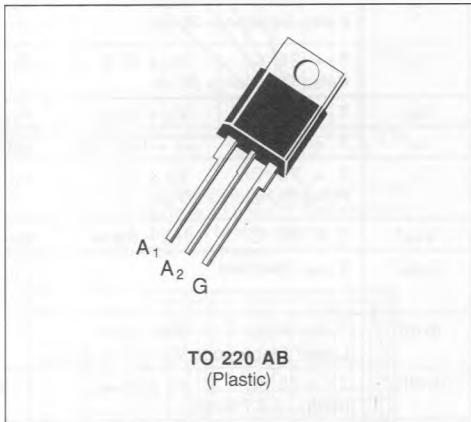


TRIACS

- GLASS PASSIVATED CHIP
- EXCELLENT $(dv/dt)_c > 5 \text{ V}/\mu\text{s}$
- IGT SPECIFIED IN FOUR QUADRANTS
- AVAILABLE IN INSULATED VERSION →
BTA SERIES (INSULATING VOLTAGE
2500 V_{RMS}) OR IN UNINSULATED VERSION
→ BTB SERIES
- UL RECOGNIZED FOR BTA SERIES (E81734)


DESCRIPTION

New range suited for applications such as phase control and static switching.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value		Unit
$I_{T(\text{RMS})}$	RMS on-state Current (360° conduction angle)	$T_C = 75^\circ\text{C}$	6	A
I_{TSM}	Non Repetitive Surge Peak on-state Current (T_j initial = 25 °C - Half sine wave)	$t = 8.3 \text{ ms}$	63	A
		$t = 10 \text{ ms}$	60	
I^2t	I^2t Value for Fusing	$t = 10 \text{ ms}$	18	A^2s
dI/dt	Critical Rate of Rise of on-state Current (1)	Repetitive $F = 50 \text{ Hz}$	10	$\text{A}/\mu\text{s}$
		Non Repetitive	50	
T_{stg} T_j	Storage and Operating Junction Temperature Range	– 40 to 150 – 40 to 110		°C °C

Symbol	Parameter	BTA/BTB 06 –					Unit
		200C	400C	600C	700C	800C	
V_{DPM}	Repetitive Peak off-state Voltage (2)	200	400	600	700	800	V

(1) $I_G = 500 \text{ mA}$ $dI/dt = 1 \text{ A}/\mu\text{s}$

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

THERMAL RESISTANCES

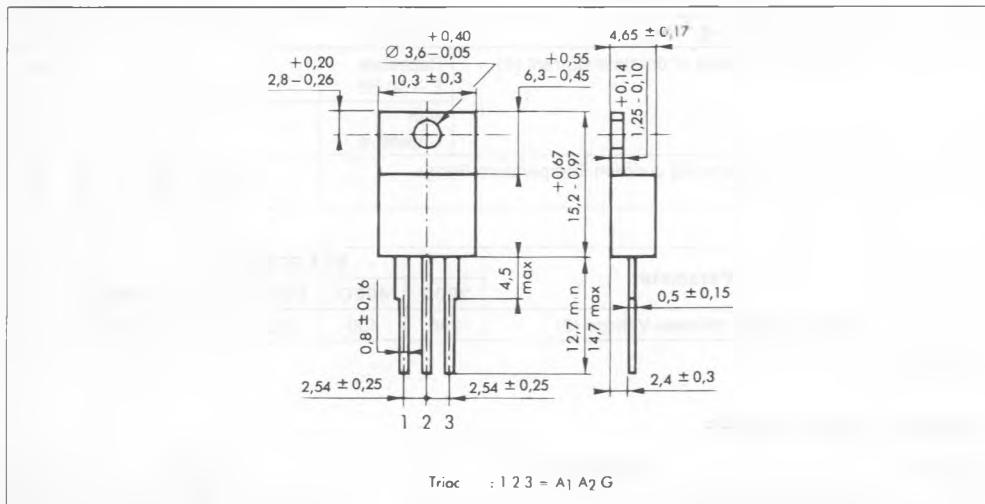
Symbol	Parameter	Value		Unit
$R_{th(j-a)}$	Junction to Ambient	60		°C/W
$R_{th(j-c)}$ DC	Junction to Case for DC	6.1		°C/W
$R_{th(j-c)}$ AC	Junction to Case for 360° Conduction Angle ($F = 50 \text{ Hz}$)	4.6		°C/W

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

Symbol	Test Conditions			Quadrants	Min.	Typ.	Max.	Unit
I_{GT}	$T_j = 25^\circ\text{C}$	$V_D = 12 \text{ V}$	$R_L = 33 \Omega$	I-II-III IV			25	mA
	Pulse Duration > 20 μs						50	
V_{GT}	$T_j = 25^\circ\text{C}$	$V_D = 12 \text{ V}$	$R_L = 33 \Omega$	I-II-III-IV			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-IV	0.2			V
I_H^*	$T_j = 25^\circ\text{C}$	$I_T = 100 \text{ mA}$	Gate Open				25	mA
I_L	$T_j = 25^\circ\text{C}$	$V_D = 12 \text{ V}$	$I_G = 100 \text{ mA}$	I-III-IV		50		mA
	Pulse Duration > 20 μs			II		100		
V_{TM}^*	$T_j = 25^\circ\text{C}$	$I_{TM} = 8.5 \text{ A}$	$t_p = 10 \text{ ms}$				1.65	V
I_{DRM}^*	V_{DRM} Specified		$T_j = 25^\circ\text{C}$				0.01	mA
			$T_j = 110^\circ\text{C}$				0.5	
dv/dt^*	$T_j = 110^\circ\text{C}$	Gate Open Linear Slope up to $V_D = 67\% V_{DRM}$			100	200		V/ μs
$(dv/dt)_c^*$	$T_C = 75^\circ\text{C}$	$V_D = V_{DRM}$	$I_T = 8.5 \text{ A}$		5			V/ μs
t_{gt}	$T_j = 25^\circ\text{C}$	$V_D = V_{DRM}$	$I_T = 8.5 \text{ A}$	I-II-III-IV		2		μs
	$I_G = 80 \text{ mA}$	$di_G/dt = 1 \text{ A}/\mu\text{s}$						

* For either polarity of electrode A₂ voltage with reference to electrode A₁.**PACKAGE MECHANICAL DATA**

TO 220 AB Plastic



Cooling method : by conduction (method C)

Marking : type number

Weight : 2 g.

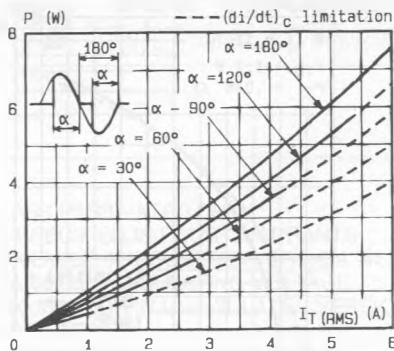


Fig.1 - Maximum mean power dissipation versus HMs on-state current ($F = 60$ Hz).

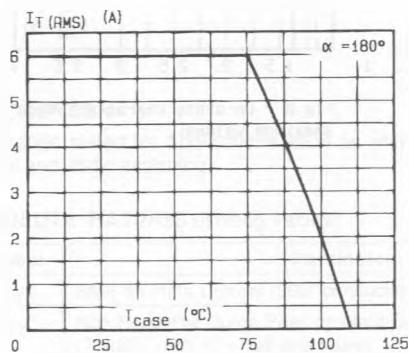


Fig.3 - RMS on-state current versus case temperature.

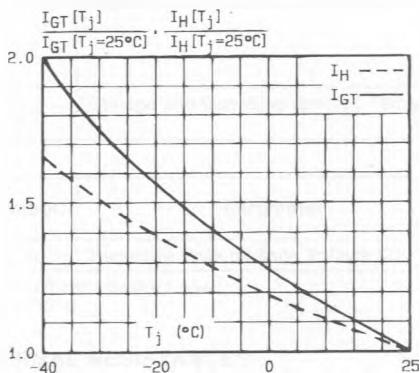


Fig.5 - Relative variation of gate trigger current and holding current versus junction temperature.

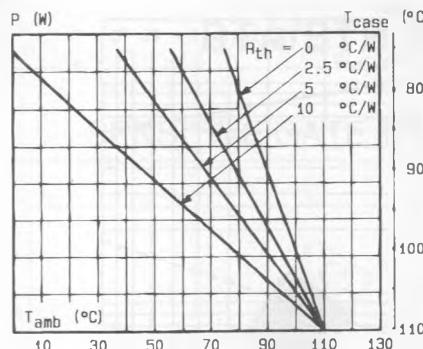


Fig.2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

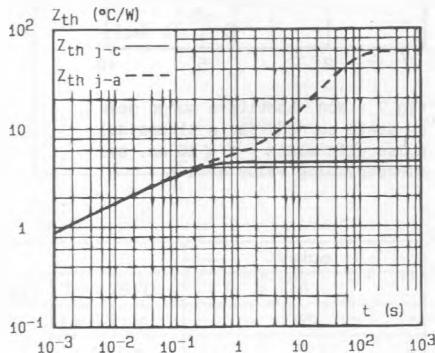


Fig.4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

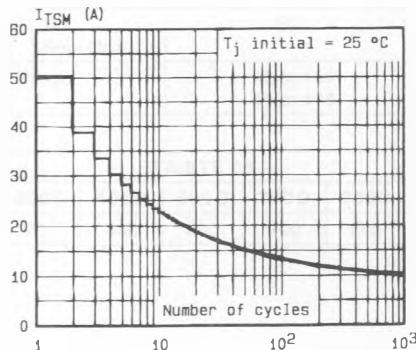


Fig.6 - Non repetitive surge peak on-state current versus number of cycles.

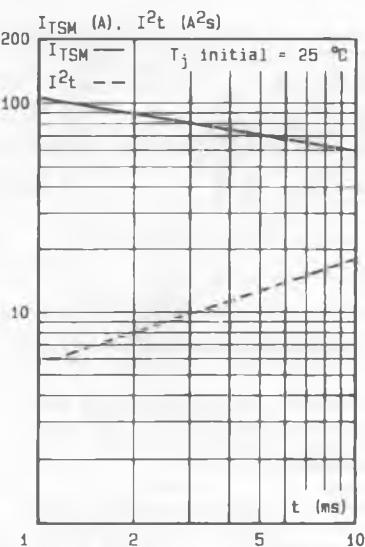


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms. and corresponding value of I^2t .

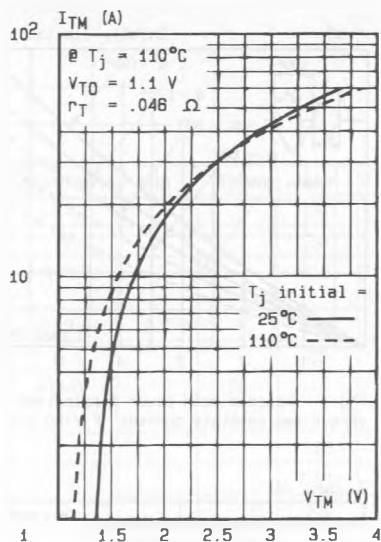


Fig.8 - On-state characteristics (maximum values).