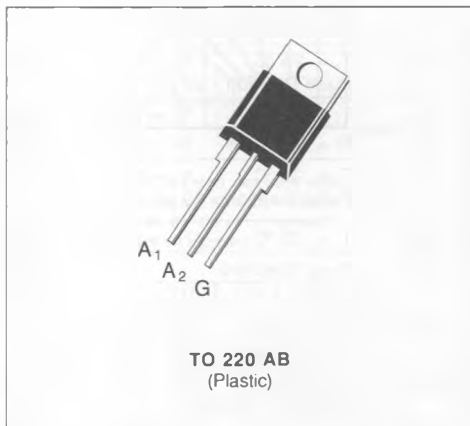


SENSITIVE GATE TRIACS

- GLASS PASSIVATED CHIP
- I_{GT} 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
$I_{T(RMS)}$	RMS on-state Current (360° conduction angle) $T_C = 75\text{ °C}$	4	A
I_{TSM}	Non Repetitive Surge Peak on-state Current (T_J initial = 25 °C - Half sine wave)	$t = 8.3\text{ ms}$	A
		$t = 10\text{ ms}$	50
I^2t	I^2t Value for Fusing	$t = 10\text{ ms}$	12.5 A ² s
di/dt	Critical Rate of Rise of on-state Current (1)	Repetitive $F = 50\text{ Hz}$	10 A/μs
		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 04-					Unit
		200A	400A	600A	700A	800A	
V_{DRM}	Repetitive Peak off-state Voltage (2)	200	400	600	700	800	V

(1) $I_G = 250\text{ mA}$ $di_G/dt = 1\text{ A/μs}$

(2) $T_J = 110\text{ °C}$.

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction to Ambient	60	°C/W
$R_{th(j-c)}\text{ DC}$	Junction to Case for DC	8.7	°C/W
$R_{th(j-c)}\text{ AC}$	Junction to Case for 360 ° Conduction Angle ($F = 50\text{ Hz}$)	6.5	°C/W

GATE CHARACTERISTICS (maximum values)

$P_{GM} = 40\text{ W}$ ($t_p = 10\text{ }\mu\text{s}$) $I_{GM} = 4\text{ A}$ ($t_p = 10\text{ }\mu\text{s}$)
 $P_{G(AV)} = 1\text{ W}$ $V_{GM} = 16\text{ V}$ ($t_p = 10\text{ }\mu\text{s}$)

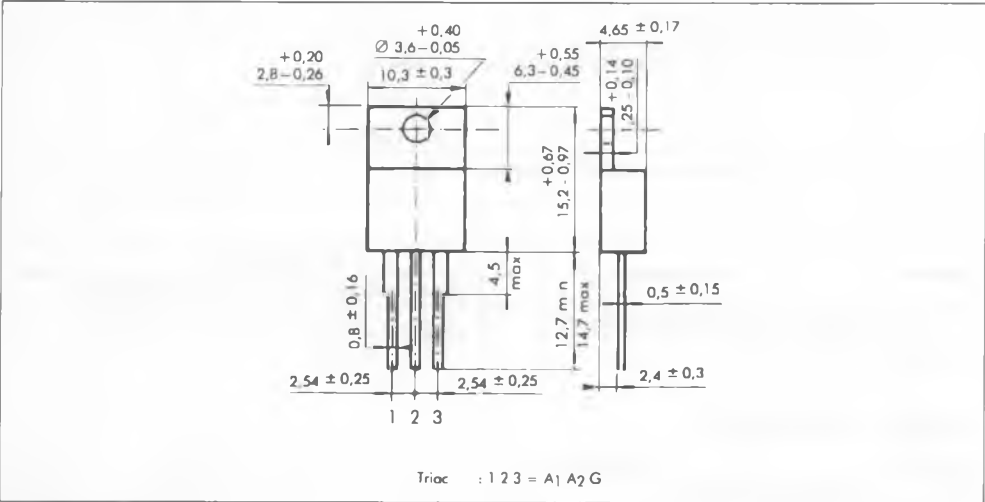
ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions			Quadrants	Min.	Typ.	Max.	Unit
I_{GT}	$T_j = 25\text{ }^\circ\text{C}$ Pulse Duration $> 20\text{ }\mu\text{s}$	$V_D = 12\text{ V}$	$R_L = 33\text{ }\Omega$	I-II-III			10	mA
				IV			25	
V_{GT}	$T_j = 25\text{ }^\circ\text{C}$ Pulse Duration $> 20\text{ }\mu\text{s}$	$V_D = 12\text{ V}$	$R_L = 33\text{ }\Omega$	I-II-III-IV			1.5	V
V_{GD}	$T_j = 110\text{ }^\circ\text{C}$	$V_D = V_{DRM}$	$R_L = 3.3\text{ k}\Omega$	I-II-III-IV	0.2			V
I_H^*	$T_j = 25\text{ }^\circ\text{C}$	$I_T = 100\text{ mA}$	Gate Open				25	mA
I_L	$T_j = 25\text{ }^\circ\text{C}$ Pulse Duration $> 20\text{ }\mu\text{s}$	$V_D = 12\text{ V}$	$I_G = 50\text{ mA}$	I-III-IV		25		mA
				II		50		
V_{TM}^*	$T_j = 25\text{ }^\circ\text{C}$	$I_{TM} = 5.5\text{ A}$	$t_p = 10\text{ ms}$				1.65	V
I_{DRM}^*	V_{DRM} Specified	$T_j = 25\text{ }^\circ\text{C}$					0.01	mA
		$T_j = 110\text{ }^\circ\text{C}$					0.75	
dv/dt^*	$T_j = 110\text{ }^\circ\text{C}$ Linear Slope up to $V_D = 67\text{ }\%$ V_{DRM}	Gate Open			10			V/ μs
$(dv/dt)_c^*$	$T_c = 75\text{ }^\circ\text{C}$ $(di/dt)_c = 1.8\text{ A/ms}$	$V_D = V_{DRM}$	$I_T = 5.5\text{ A}$			5		V/ μs
t_{gt}	$T_j = 25\text{ }^\circ\text{C}$ $I_G = 40\text{ mA}$	$V_D = V_{DRM}$ $di_G/dt = 0.45\text{ A}/\mu\text{s}$	$I_T = 5.5\text{ A}$	I-II-III-IV		2		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.

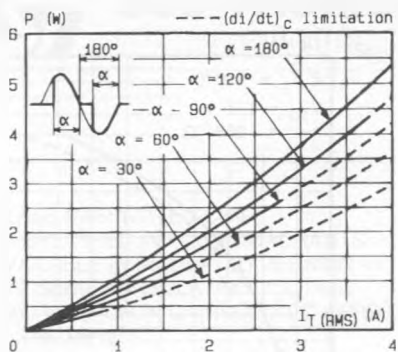


Fig. 1 - Maximum mean power dissipation versus RMS on-state current ($F = 60$ Hz).

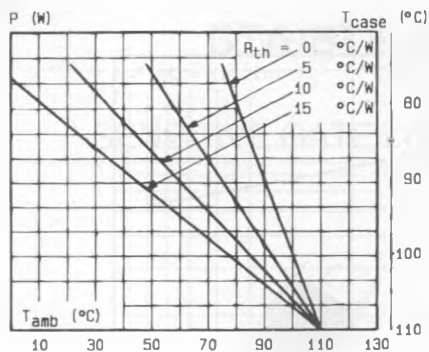


Fig. 2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

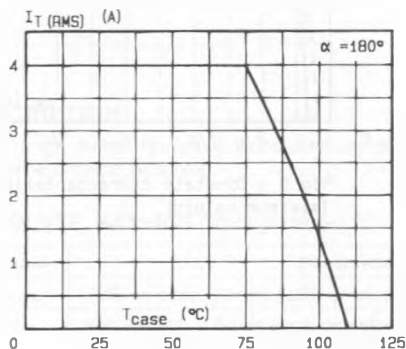


Fig. 3 - RMS on-state current versus case temperature.

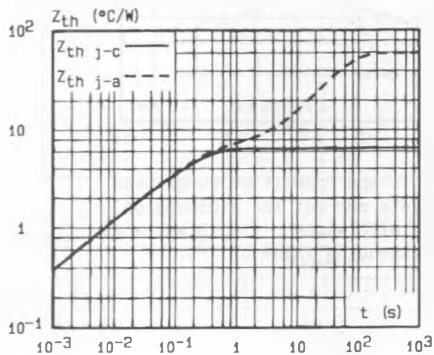


Fig. 4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

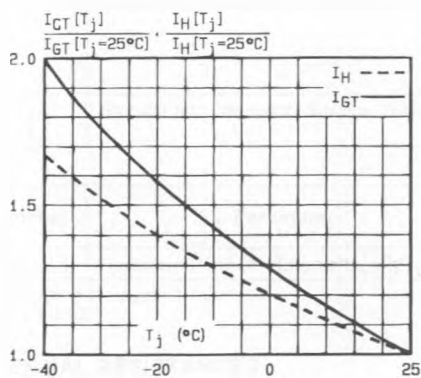


Fig. 5 - Relative variation of gate trigger current and holding current versus junction temperature.

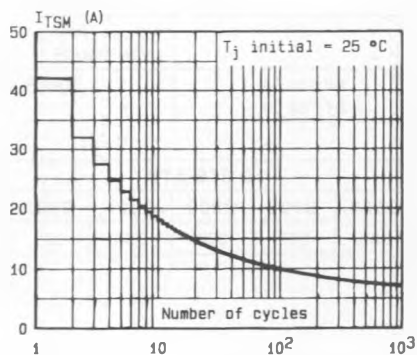


Fig. 6 - Non repetitive surge peak on-state current versus number of cycles.

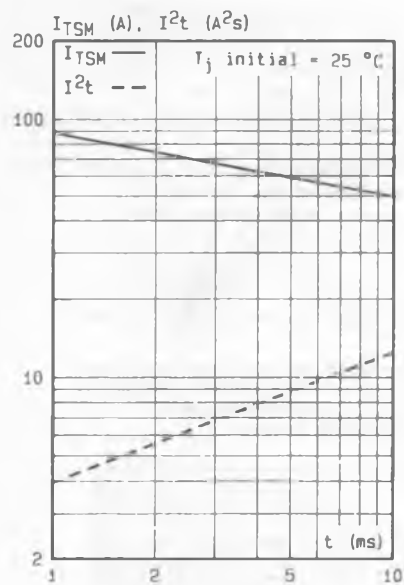


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

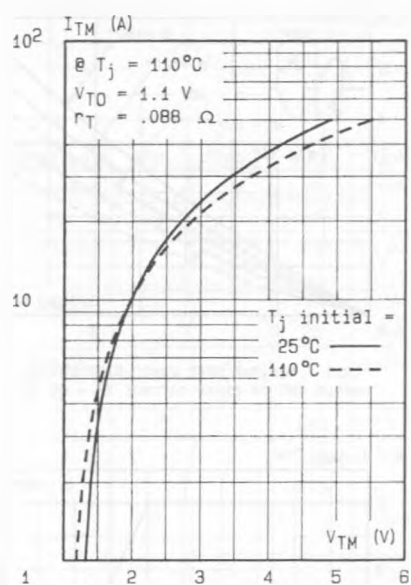


Fig.8 - On-state characteristics (maximum values).