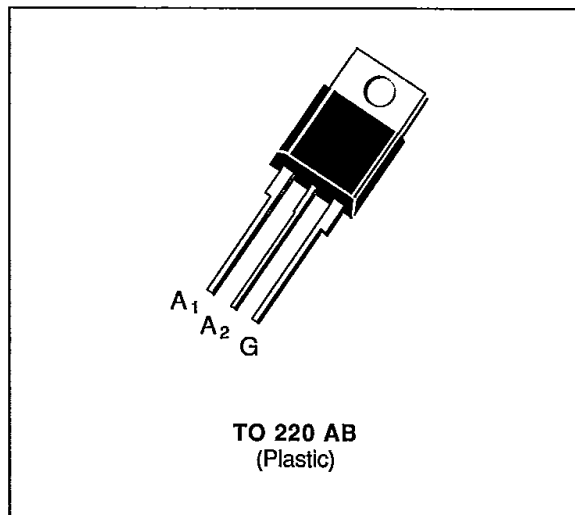


- GLASS PASSIVATED CHIP
- I<sub>GT</sub> SPECIFIED IN FOUR QUADRANTS
- AVAILABLE IN INSULATED VERSION → BTA SERIES (INSULATING VOLTAGE 2500 V<sub>RMS</sub>) OR IN UNINSULATED VERSION → BTB SERIES
- UL RECOGNIZED FOR BTA SERIES (E81734)



**DESCRIPTION**

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

**ABSOLUTE RATINGS** (limiting values)

Symbol	Parameter	Value	Unit
I <sub>T(RMS)</sub>	RMS on-state Current (360° conduction angle) T <sub>C</sub> = 75 °C	8	A
I <sub>TSM</sub>	Non Repetitive Surge Peak on-state Current (T <sub>J</sub> initial = 25 °C - Half sine wave)	t = 8.3 ms	84
		t = 10 ms	80
I <sup>2</sup> t	I <sup>2</sup> t Value for Fusing t = 10 ms	32	A <sup>2</sup> s
di/dt	Critical Rate of Rise of on-state Current (1)	Repetitive F = 50 Hz	10
		Non Repetitive	50
T <sub>stg</sub> T <sub>j</sub>	Storage and Operating Junction Temperature Range	- 40 to 150	°C
		- 40 to 110	°C

Symbol	Parameter	BTA/BTB 08-					Unit
		200A	400A	600A	700A	800A	
V <sub>DRM</sub>	Repetitive Peak off-state Voltage (2)	200	400	600	700	800	V

(1) I<sub>G</sub> = 250 mA    di/dt = 1 A/μs  
(2) T<sub>J</sub> = 110 °C.

**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
R <sub>th(j-a)</sub>	Junction to Ambient	60	°C/W
R <sub>th(j-c) DC</sub>	Junction to Case for DC	5.1	°C/W
R <sub>th(j-c) AC</sub>	Junction to Case for 360 ° Conduction Angle (F = 50 Hz)	3.8	°C/W

## GATE CHARACTERISTICS (maximum values)

$P_{GM} = 40 \text{ W (} t_p = 10 \mu\text{s)}$

$I_{GM} = 4 \text{ A (} t_p = 10 \mu\text{s)}$

T-25-15

$P_{G(AV)} = 1 \text{ W}$

$V_{GM} = 16 \text{ V (} t_p = 10 \mu\text{s)}$

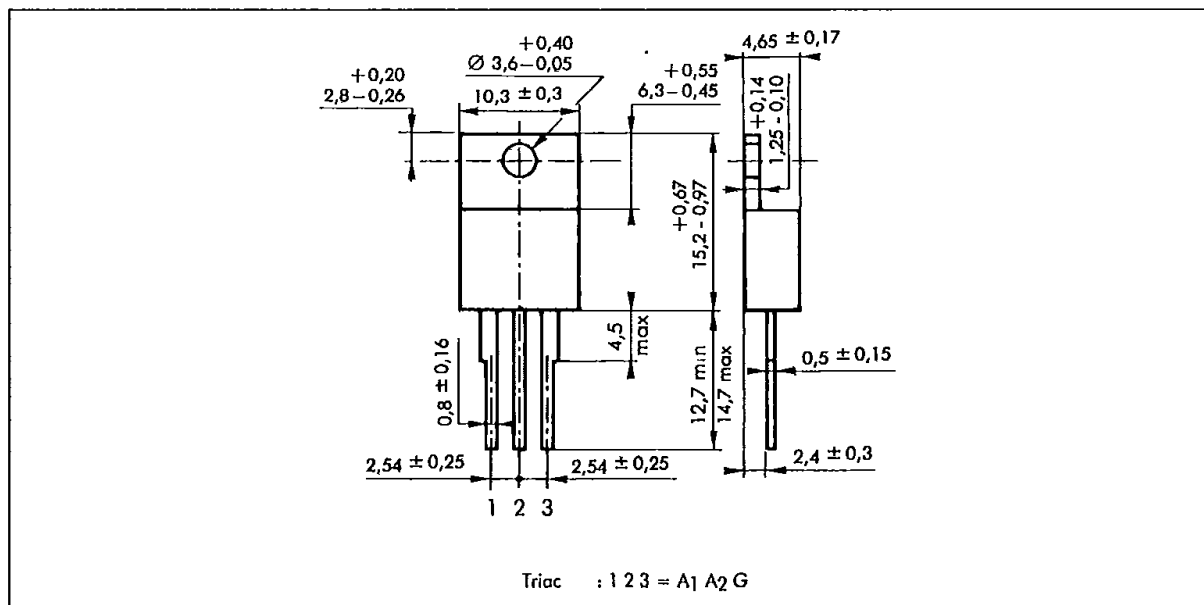
## ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions	Quadrants	Min.	Typ.	Max.	Unit
$I_{GT}$	$T_j = 25 \text{ }^\circ\text{C}$ $V_D = 12 \text{ V}$ $R_L = 33 \text{ } \Omega$ Pulse Duration > 20 $\mu\text{s}$	I-II-III IV			10 25	mA
$V_{GT}$	$T_j = 25 \text{ }^\circ\text{C}$ $V_D = 12 \text{ V}$ $R_L = 33 \text{ } \Omega$ Pulse Duration > 20 $\mu\text{s}$	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
$I_L$	$T_j = 25 \text{ }^\circ\text{C}$ $V_D = 12 \text{ V}$ $I_G = 50 \text{ mA}$ Pulse Duration > 20 $\mu\text{s}$	I-III-IV II		25 50		mA
$V_{TM}^*$	$T_j = 25 \text{ }^\circ\text{C}$ $I_{TM} = 11 \text{ A}$ $t_p = 10 \text{ ms}$				1.75	V
$I_{DRM}^*$	$V_{DRM}$ Specified				0.01 0.5	mA
$dv/dt^*$	$T_j = 110 \text{ }^\circ\text{C}$ Gate Open Linear Slope up to $V_D = 67 \% V_{DRM}$		10			V/ $\mu\text{s}$
$(dv/dt)_c^*$	$T_C = 75 \text{ }^\circ\text{C}$ $V_D = V_{DRM}$ $I_T = 11 \text{ A}$ $(di/dt)_c = 3.5 \text{ A/ms}$			5		V/ $\mu\text{s}$
$t_{gt}$	$T_j = 25 \text{ }^\circ\text{C}$ $V_D = V_{DRM}$ $I_T = 11 \text{ A}$ $I_G = 40 \text{ mA}$ $di_G/dt = 0.45 \text{ A}/\mu\text{s}$	I-II-III-IV		2		$\mu\text{s}$

\* 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

T-25-15

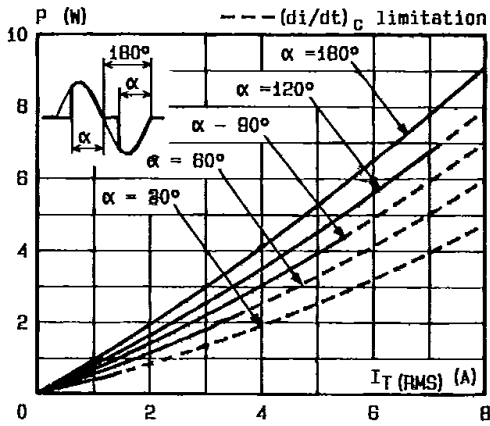


Fig.1 - Maximum mean power dissipation versus RMS on-state current (F = 60 Hz).

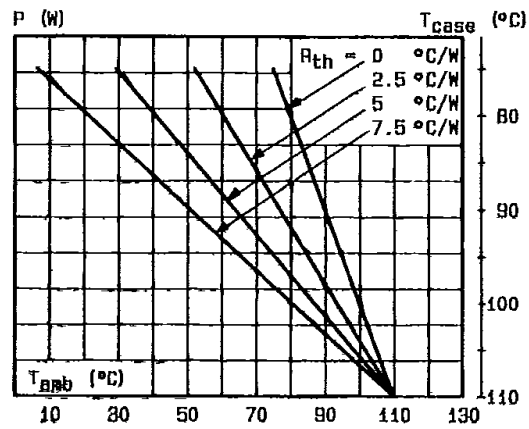


Fig.2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T<sub>amb</sub> and T<sub>case</sub>) for different thermal resistances heat sink + contact.

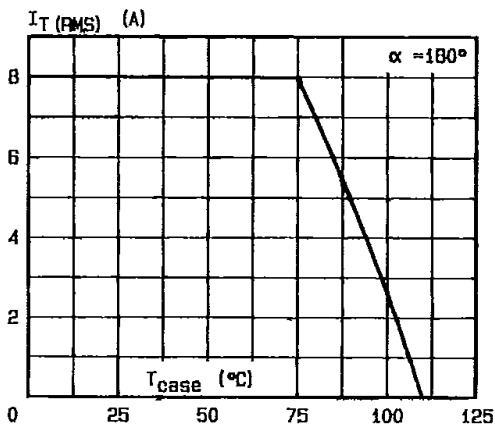


Fig.3 - RMS on-state current versus case temperature.

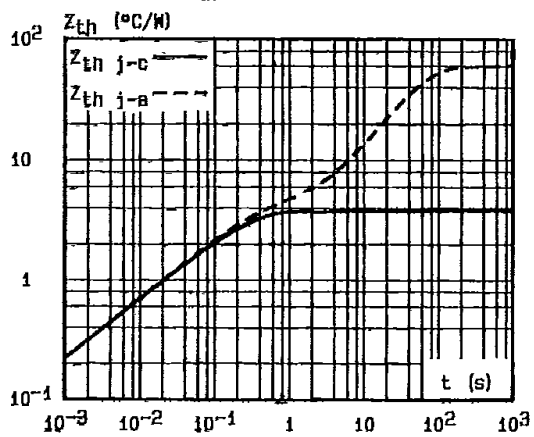


Fig.4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

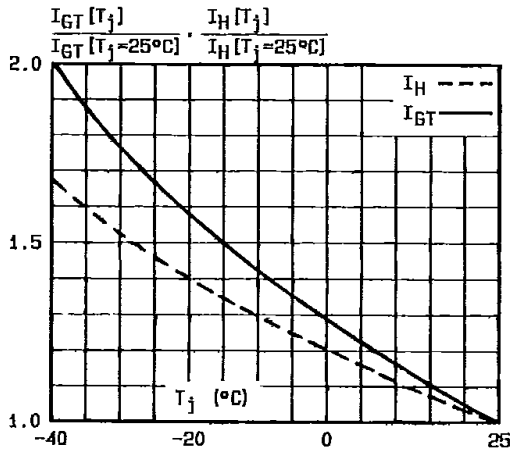


Fig.5 - Relative variation of gate trigger current and holding current versus junction temperature.

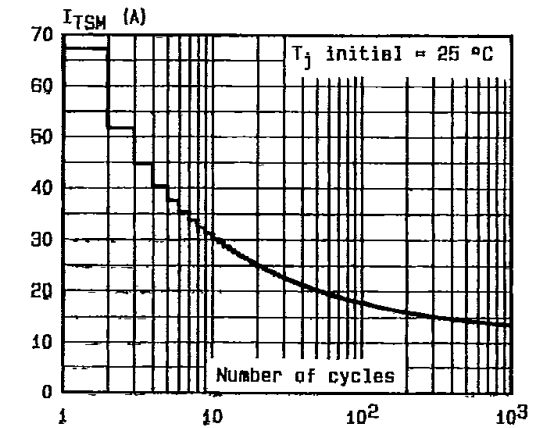


Fig.6 - Non repetitive surge peak on-state current versus number of cycles.

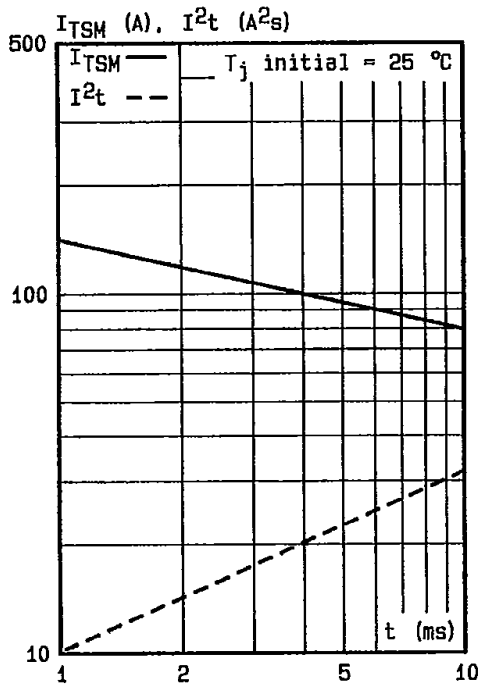


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width :  $t \leq 10$  ms, and corresponding value of  $I^2t$ .

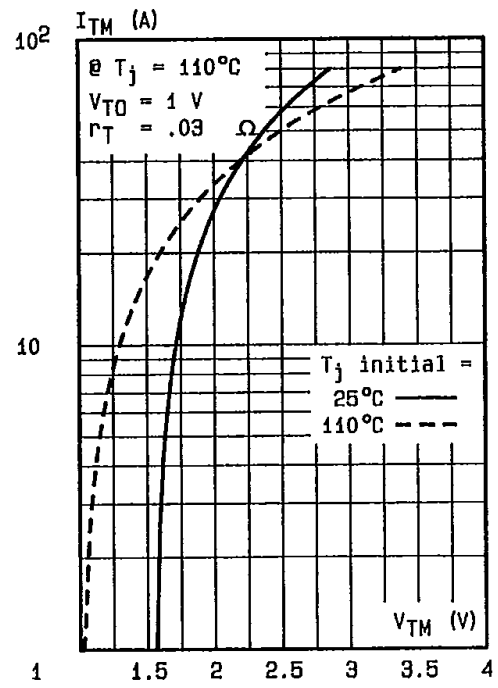


Fig.8 - On-state characteristics (maximum values).