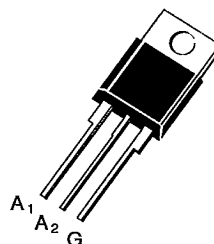


- GLASS PASSIVATED CHIP
- I_{GT} SPECIFIED IN FOUR QUADRANTS
- AVAILABLE IN INSULATED VERSION → BTA SERIES (INSULATING VOLTAGE 2500 V_{RMS}) OR IN UNINSULATED VERSION → BTB SERIES
- UL RECOGNIZED FOR BTA SERIES (E81734)



TO 220 AB
(Plastic)

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)	$t = 8.3\text{ ms}$	52	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}	Storage and Operating Junction Temperature Range		- 40 to 150	°C
T_J			- 40 to 110	°C

Symbol	Parameter	BTA/BTB 04-					Unit
		200S	400S	600S	700S	800S	
V_{ORM}	Repetitive Peak off-state Voltage (2)	200	400	600	700	800	V

(1) $I_G = 100\text{ mA}$ $di/dt = 1\text{ A/μs}$

(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)

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

T-25-13

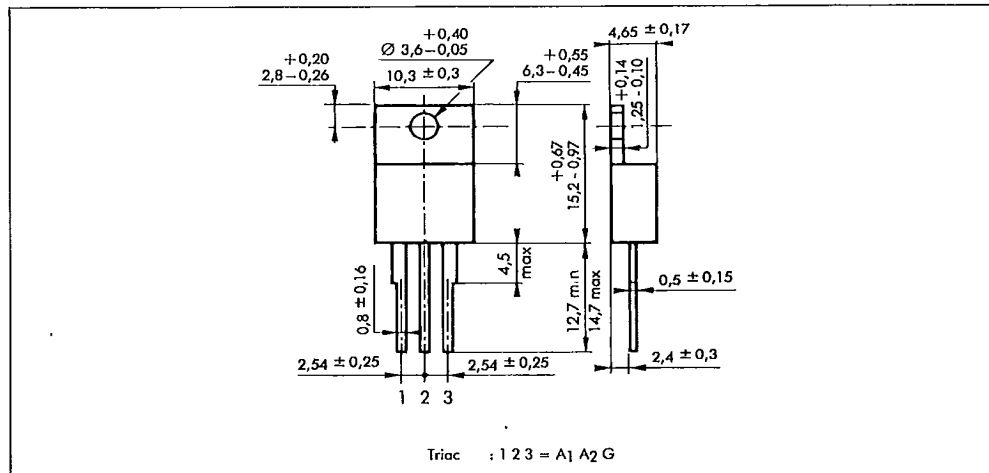
ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions			Quadrants	Min.	Typ.	Max.	Unit
I _{GT}	T _J = 25 °C	V _D = 12 V	R _L = 33 Ω	I-II-III-IV			10	mA
	Pulse Duration > 20 μs							
V _{GT}	T _J = 25 °C	V _D = 12 V	R _L = 33 Ω	I-II-III-IV			1.5	V
	Pulse Duration > 20 μs							
V _{GD}	T _J = 110 °C	V _D = V _{DRM}	R _L = 3.3 kΩ	I-II-III-IV	0.2			V
I _H *	T _J = 25 °C	I _T = 100 mA	Gate Open				25	mA
I _L	T _J = 25 °C	V _D = 12 V	I _G = 20 mA	I-III-IV		25		mA
				II		50		
V _{TM} *	T _J = 25 °C	I _{TM} = 5.5 A	t _p = 10 ms				1.65	V
I _{DRM} *	V _{DRM} Specified		T _J = 25 °C				0.01	mA
			T _J = 110 °C				0.75	
dv/dt*	T _J = 110 °C	Gate Open			10			V/μs
	Linear Slope up to V _D = 67 % V _{DRM}							
(dv/dt) _c *	T _C = 75 °C	V _D = V _{DRM}	I _T = 5.5 A			5		V/μs
	(di/dt) _c = 1.8 A/ms							
t _{gt}	T _J = 25 °C	V _D = V _{DRM}	I _T = 5.5 A	I-II-III-IV		2		μs
	I _G = 40 mA	di _G /dt = 0.45 A/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.

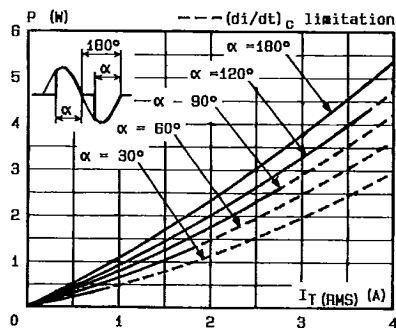
S G S-THOMSON *T-25-13*

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

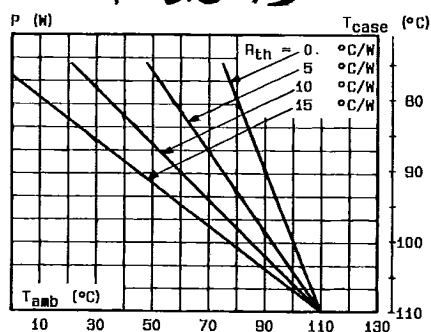


Fig. 2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

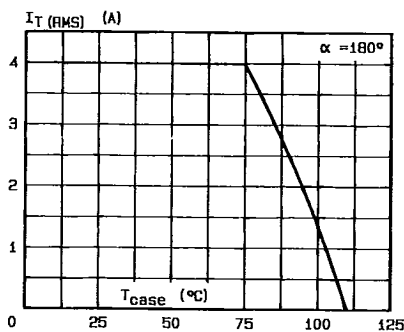


Fig. 3 - RMS on-state current versus case temperature.

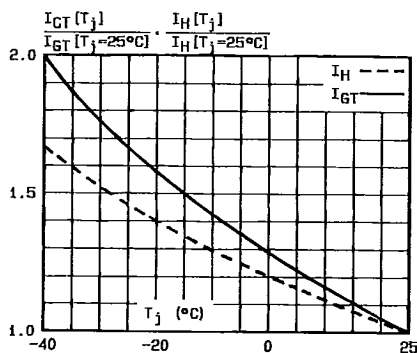


Fig. 5 - Relative variation of gate trigger current and holding current versus junction temperature.

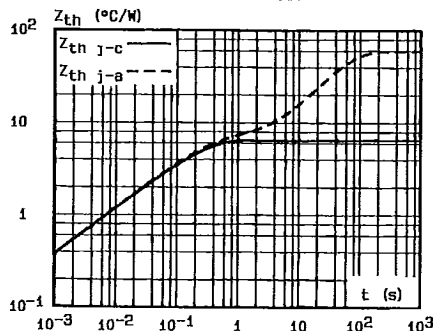


Fig. 4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

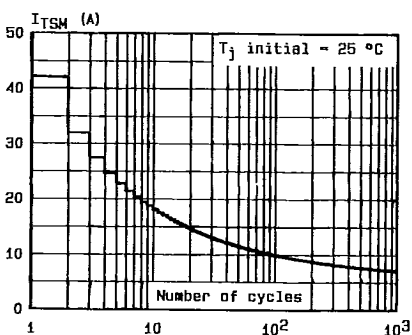


Fig. 6 - Non repetitive surge peak on-state current versus number of cycles.

T-25-13

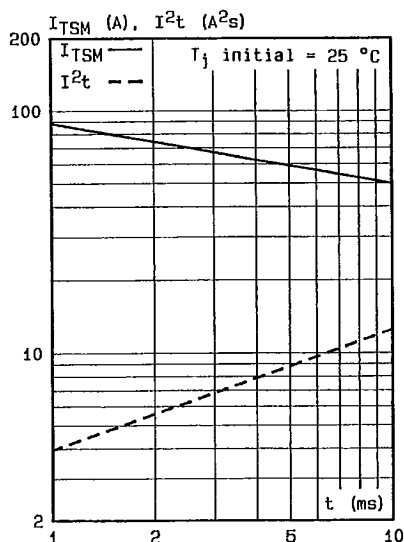


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

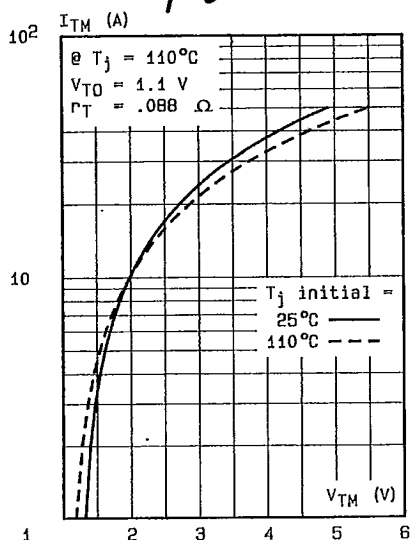


Fig.8 - On-state characteristics (maximum values).