

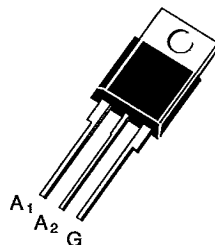

SGS-THOMSON
 MICROELECTRONICS

BTB 06 AW

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SNUBBERLESS TRIACS

- $I_{TRMS} = 6\text{ A}$ at $T_c = 100\text{ }^\circ\text{C}$.
- $V_{DRM} : 200\text{ V}$ to 800 V .
- $I_{GT} = 75\text{ mA}$ (QI-II-III).
- GLASS PASSIVATED CHIP.
- HIGH SURGE CURRENT : $I_{TSM} = 60\text{ A}$.
- HIGH COMMUTATION CAPABILITY :
 $(di/dt)_c > 8\text{ A/ms}$ without snubber.



TO 220 AB
 (CB-415 Plastic)

DESCRIPTION

New range suited for applications such as phase control and static switching on inductive or resistive load.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{TRMS}	RMS on-state current (360 ° conduction angle)	$T_c = 100\text{ }^\circ\text{C}$	6	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = $25\text{ }^\circ\text{C}$)	$t = 8.3\text{ ms}$	63	A
		$t = 10\text{ ms}$	60	
$I^2 t$	$I^2 t$ value	$t = 10\text{ ms}$	18	$\text{A}^2\text{ s}$
di/dt	Critical rate of rise of on-state current (1)	Repetitive $F = 50\text{ Hz}$	20	$\text{A}/\mu\text{s}$
		Non Repetitive	100	
T_{stg} T_j	Storage and operating junction temperature range		- 40, + 150 - 40, + 125	$^\circ\text{C}$ $^\circ\text{C}$

Symbol	Parameter	BTB 06-					Unit
		200 AW	400 AW	600 AW	700 AW	800 AW	
V_{DRM}	Repetitive peak off-state voltage (2)	± 200	± 400	± 600	± 700	± 800	V

(1) Gate supply : $I_G = 750\text{ mA}$ - $di_G / dt = 1\text{ A}/\mu\text{s}$.

(2) $T_j = 125\text{ }^\circ\text{C}$.

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1/4

403

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	3.5	$^{\circ}\text{C/W}$
$R_{th(j-c)} \text{ AC}$	Junction to case for 360 ° conduction angle (F = 50 Hz)	2.7	$^{\circ}\text{C/W}$

GATE CHARACTERISTICS (maximum values)

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

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	2		75	mA
	Pulse duration > 20 μs							
V _{GT}	T _J = 25 °C V _D = 12 V		R _L = 33 Ω	I-II-III			1.5	V
	Pulse duration > 20 μs							
V _{GD}	T _J = 125 °C V _D = V _{DRM}		R _L = 3.3 kΩ	I-II-III	0.2			V
	Pulse duration > 20 μs							
I _H *	T _J = 25 °C	I _T = 100 mA	R _L = 140 Ω				75	mA
	Gate open							
I _L	T _J = 25 °C V _D = 12 V		I _G = 500 mA	I-III		75		mA
	Pulse duration > 20 μs			II		150		
V _{TM} *	T _J = 25 °C	I _{TM} = 8.5 A	t _p = 10 ms				1.75	V
I _{DRM} *	T _J = 25 °C	V _{DRM} rated	Gate open				0.01	mA
	T _J = 125 °C						2	
dv/dt*	T _J = 125 °C Gate open				750	1000		V/μs
	Linear slope up to 0.67 V _{DRM}							
(di/dt) _c *	T _J = 125 °C	V _{DRM} rated			8	16		A/ms
	Without snubber							
t _{gt}	T _J = 25 °C	di _G /dt = 3.5 A/μs	I _G = 500 mA	I-II-III		2		μs
	I _T = 8.5 A	V _D = V _{DRM}						

* For either polarity of electrode A_2 voltage with reference to electrode A_1 .

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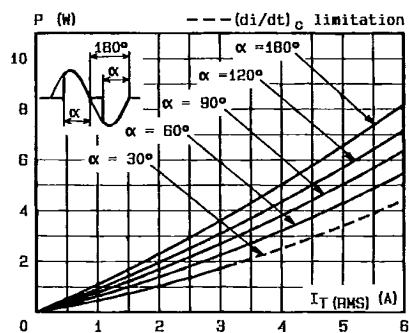


Fig. 1 - Maximum mean power dissipation versus RMS on-state current ($F = 60$ Hz).

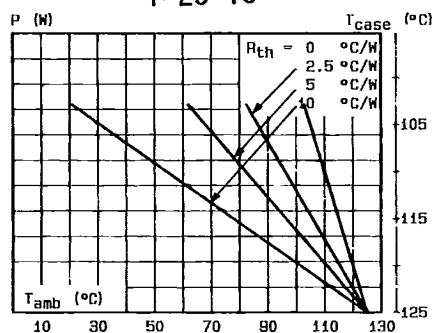


Fig. 2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

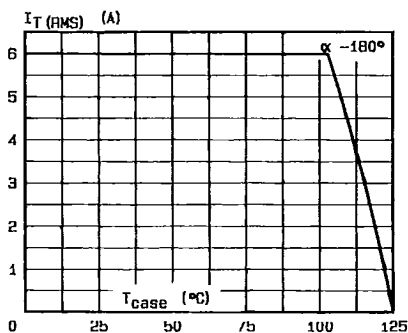


Fig. 3 - RMS on-state current versus case temperature.

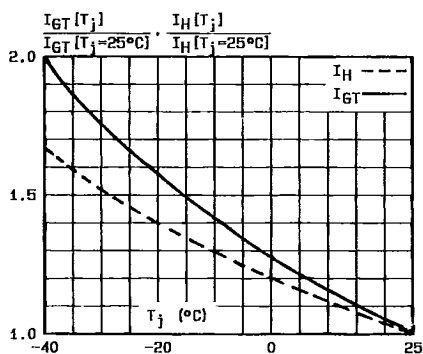


Fig. 5 - Relative variation of gate trigger current and holding current versus junction temperature.

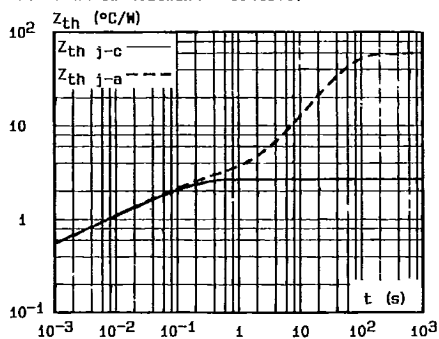


Fig. 4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

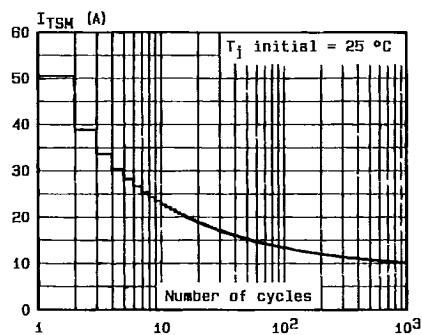


Fig. 6 - Non repetitive surge peak on-state current versus number of cycles.

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T-25-15

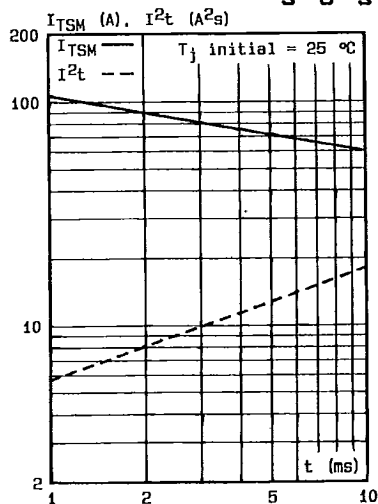


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms. and corresponding value of I^2t .

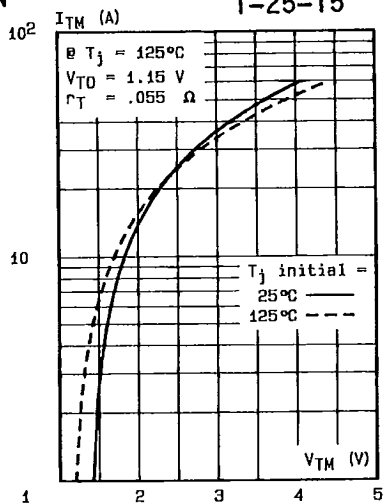
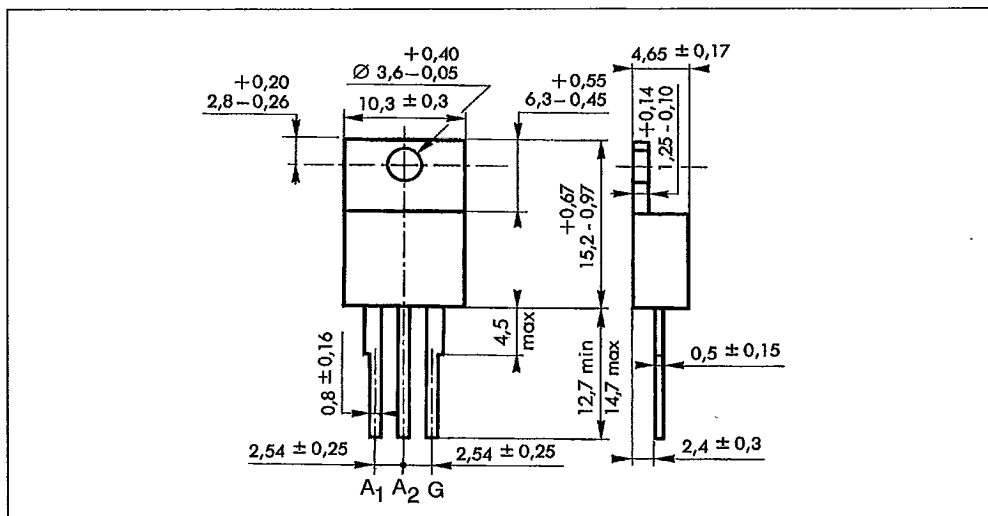


Fig.8 - On-state characteristics (maximum values).

PACKAGE MECHANICAL DATA

TO 220 AB (CB-415) Plastic



Cooling method : by conduction (method C)

Marking : type number

Weight : 2 g