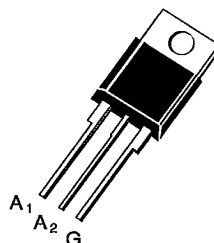


S G S-THOMSON

SNUBBERLESS TRIACS

- $I_{TRMS} = 12\text{ A}$ at $T_c = 95^\circ\text{C}$.
- $V_{DRM} : 200\text{ V to } 800\text{ V}$.
- $I_{GT} = 75\text{ mA}$ (QI-II-III).
- GLASS PASSIVATED CHIP.
- HIGH SURGE CURRENT : $I_{TSM} = 120\text{ A}$.
- HIGH COMMUTATION CAPABILITY :
 $(di/dt)_c > 16\text{ A/ms}$ 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)	$T_c = 95^\circ\text{C}$	12	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = 25°C)	$t = 8.3\text{ ms}$	126	A
		$t = 10\text{ ms}$	120	
I^2t	I^2t value	$t = 10\text{ ms}$	72	A^2s
di/dt	Critical rate of rise of on-state current (1)	Repetitive $F = 50\text{ Hz}$	20	A / μs
		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 12-					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) $T_j = 125^\circ\text{C}$.

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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	2.7	$^{\circ}\text{C/W}$
$R_{th(j-c)}\text{AC}$	Junction to case for 360° conduction angle (F = 50 Hz)	2	$^{\circ}\text{C/W}$

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 Pulse duration > 20 μs			I-II-III	2		75	mA
V _{GT}	T _j = 25 °C V _D = 12 V R _L = 33 Ω Pulse duration > 20 μs			I-II-III			1.5	V
V _{GD}	T _j = 125 °C V _D = V _{DRM} Pulse duration > 20 μs			I-II-III	0.2			V
I _H *	T _j = 25 °C I _T = 100 mA Gate open R _L = 140 Ω						75	mA
I _L	T _j = 25 °C V _D = 12 V I _G = 500 mA Pulse duration > 20 μs			I-III		75		mA
				II		150		
V _{TM} *	T _j = 25 °C I _{TM} = 17 A t _p = 10 ms						1.6	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 Linear slope up to 0.67 V _{DRM}				750	1000		V/μs
(di/dt) _o *	T _j = 125 °C V _{DRM} rated Without snubber				16	32		A/ms
t _{gt}	T _j = 25 °C I _T = 17 A	di _G /dt = 3.5 A/μs V _D = V _{DRM}	I _G = 500 mA	I-II-III		2		μs

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

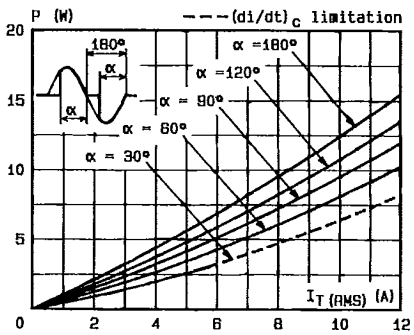


Fig. 1 - Maximum mean power dissipation versus RMS on-state current ($F = 60$ Hz).

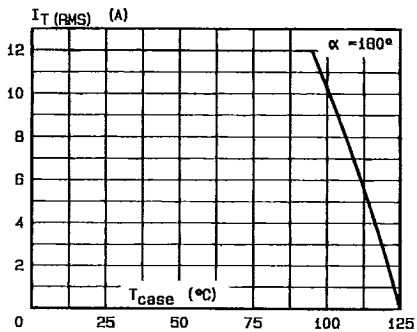


Fig. 3 - RMS on-state current versus case temperature.

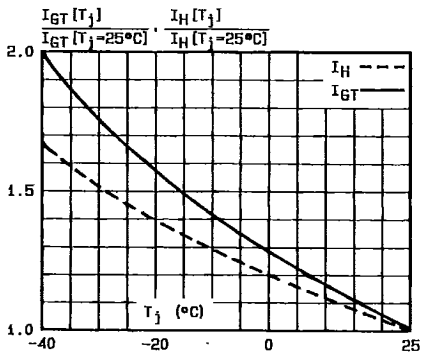


Fig. 5 - Relative variation of gate trigger current and holding current versus junction temperature.

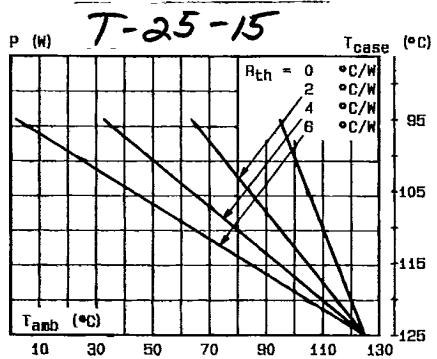


Fig. 2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

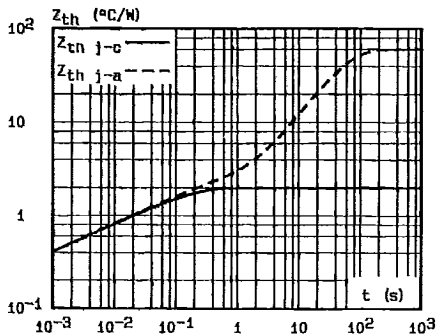


Fig. 4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

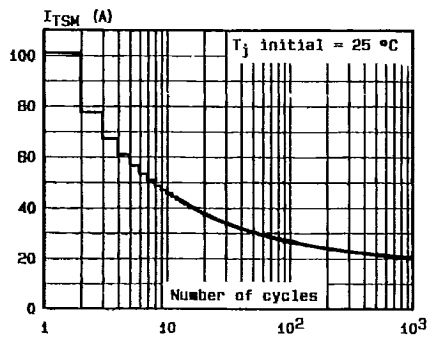


Fig. 6 - Non repetitive surge peak on-state current versus number of cycles.

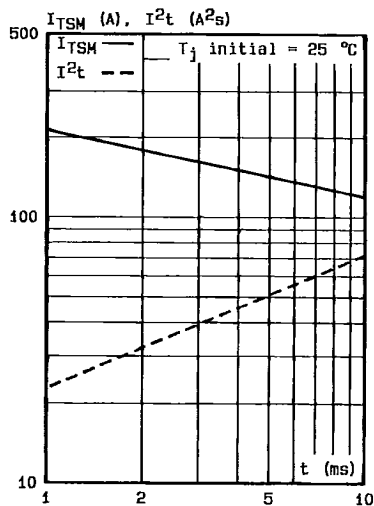


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

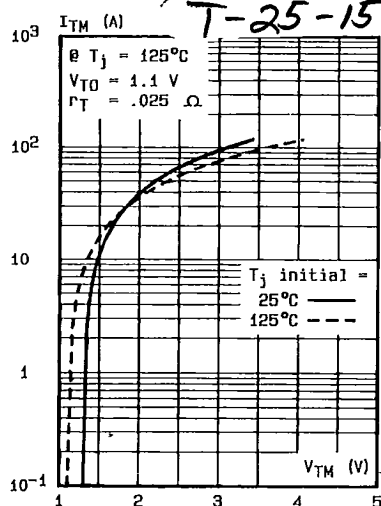
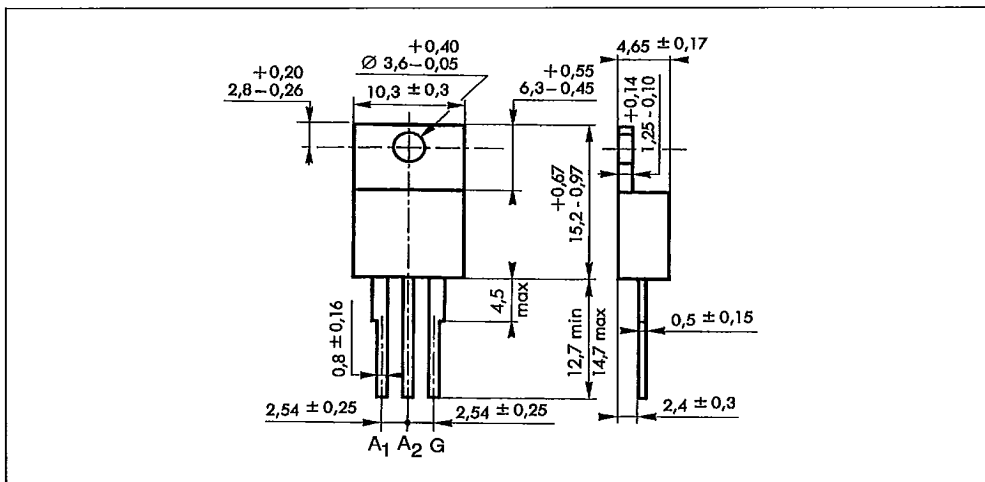


Fig.8 - On-state characteristics (maximum values).

PACKAGE MECHANICAL DATA

TO 220 AB (CB-415) Plastic



Cooling method : by conduction (method C)

Marking : type number

Weight : 2 g