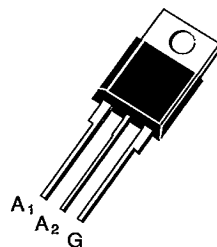


SNUBBERLESS TRIACS

- $I_{T_{RMS}} = 10\text{ A}$ at $T_c = 100\text{ }^{\circ}\text{C}$.
- $V_{DRM} : 200\text{ V to } 800\text{ V}$.
- $I_{GT} = 75\text{ mA}$ (QI-II-III).
- GLASS PASSIVATED CHIP.
- HIGH SURGE CURRENT : $I_{TSM} = 100\text{ A}$.
- HIGH COMMUTATION CAPABILITY :
 $(di/dt)_c > 12\text{ A/ms}$ 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
$I_{T_{RMS}}$	RMS on-state current (360 ° conduction angle)	$T_c = 100\text{ }^{\circ}\text{C}$	10	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = 25 °C)	$t = 8.3\text{ ms}$	105	A
		$t = 10\text{ ms}$	100	
I^2t	I^2t value	$t = 10\text{ ms}$	50	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 10-					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) $T_j = 125\text{ }^{\circ}\text{C}$.

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 ($F = 50 \text{ Hz}$)	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}	$T_J = 25\text{ }^{\circ}\text{C}$ Pulse duration $> 20\text{ }\mu\text{s}$	$V_D = 12\text{ V}$	$R_L = 33\text{ }\Omega$	I-II-III	2		75	mA
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			1.5	V
V_{GD}	$T_J = 125\text{ }^{\circ}\text{C}$ Pulse duration $> 20\text{ }\mu\text{s}$	$V_D = V_{DRM}$	$R_L = 3.3\text{ k}\Omega$	I-II-III	0.2			V
I_H^*	$T_J = 25\text{ }^{\circ}\text{C}$ Gate open	$I_T = 100\text{ mA}$ $R_L = 140\text{ }\Omega$					75	mA
I_L	$T_J = 25\text{ }^{\circ}\text{C}$ Pulse duration $> 20\text{ }\mu\text{s}$	$V_D = 12\text{ V}$	$I_G = 500\text{ mA}$	I-III		75		mA
				II		150		
V_{TM}^*	$T_J = 25\text{ }^{\circ}\text{C}$	$I_{TM} = 14\text{ A}$	$t_p = 10\text{ ms}$				1.65	V
I_{DRM}^*	$T_J = 25\text{ }^{\circ}\text{C}$	V_{DRM} rated	Gate open				0.01	mA
	$T_J = 125\text{ }^{\circ}\text{C}$					2		
dv/dt^*	$T_J = 125\text{ }^{\circ}\text{C}$ Linear slope up to $0.67\text{ }V_{DRM}$	Gate open			750	1000		V/ μs
$(di/dt)_c^*$	$T_J = 125\text{ }^{\circ}\text{C}$ Without snubber	V_{DRM} rated			12	24		A/ms
t_{gt}	$T_J = 25\text{ }^{\circ}\text{C}$ $I_T = 14\text{ A}$	$di_G/dt = 3.5\text{ A}/\mu\text{s}$ $V_D = V_{DRM}$	$I_G = 500\text{ mA}$	I-II-III		2		μs

* For either polarity of electrode A₂ voltage with reference to electrode A₁.

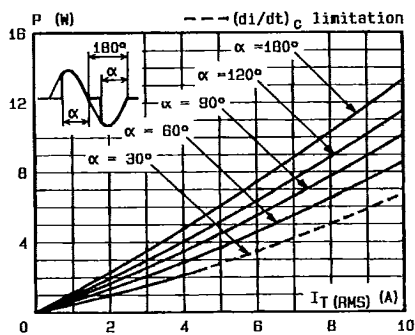


Fig.1 - Maximum mean power dissipation versus RMS on-state current ($f = 60$ Hz).

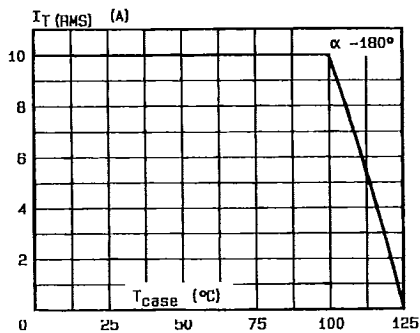


Fig.3 - RMS on-state current versus case temperature.

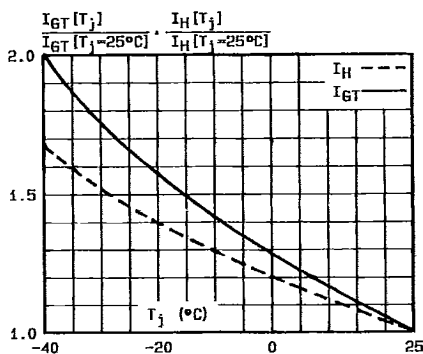


Fig.5 - Relative variation of gate trigger current and holding current versus junction temperature.

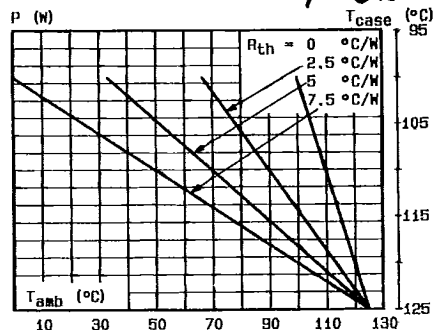


Fig.2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

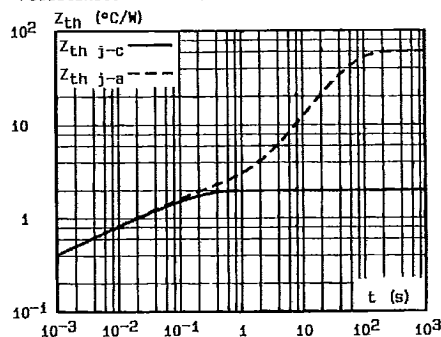


Fig.4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

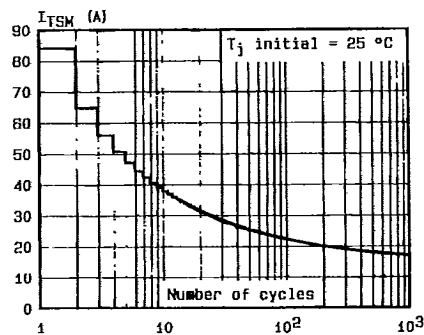


Fig.6 - Non repetitive surge peak on-state current versus number of cycles.

S G S-THOMSON

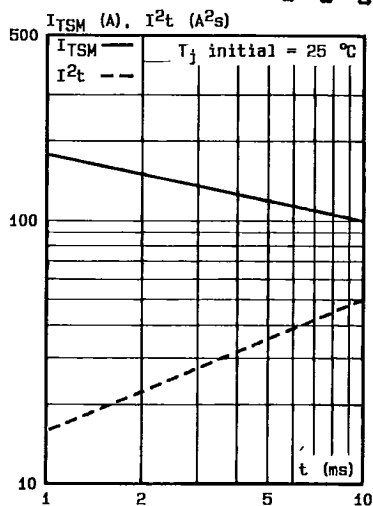


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

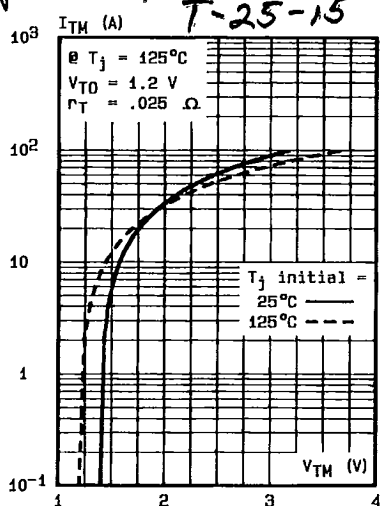
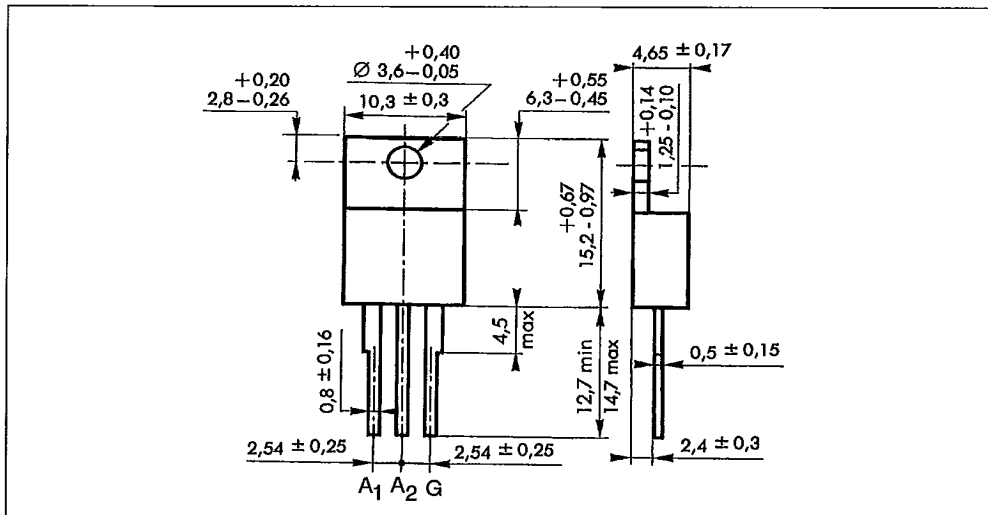


Fig.8 - On-state characteristics (maximum values).

PACKAGE MECHANICAL DATA

TO 220 AB (CB-415) Plastic



Cooling method : by conduction (method C)

Marking : type number

Weight : 2 g