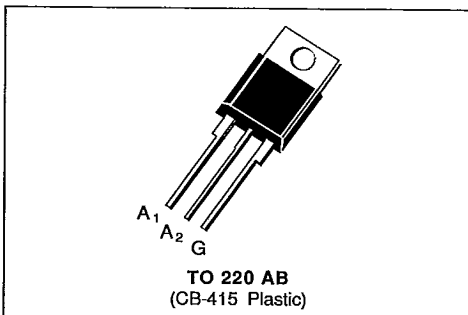


- $I_{TRMS} = 8\text{ A}$ at $T_c = 80\text{ }^\circ\text{C}$.
- $V_{DRM} : 200\text{ V}$ to 800 V .
- $I_{GT} = 10\text{ mA}$ (QI-II-III).
- $(di/dt)_c = 4.5\text{ A/ms}$ @ $(dv/dt)_c = 50\text{ V}/\mu\text{s}$.
- SUITED FOR LOW POWER TRIGGER CIRCUITS (INTEGRATED CIRCUITS AND MICROPROCESSORS).
- GLASS PASSIVATED CHIP.
- HIGH EFFICIENCY SWITCHING.
- AVAILABLE IN INSULATED VERSION → BTA SERIES (INSULATING VOLTAGE : 2500 V_{RMS}) 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 on inductive or resistive load.

**ABSOLUTE RATINGS** (limiting values)

Symbol	Parameter		Value	Unit
I_{TRMS}	RMS on-state current (360 ° conduction angle)	$T_c = 80\text{ }^\circ\text{C}$	8	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = $25\text{ }^\circ\text{C}$)	$t = 8.3\text{ ms}$	95	A
		$t = 10\text{ ms}$	85	
I^2t	I^2t value	$t = 10\text{ ms}$	36	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, + 110	$^\circ\text{C}$ $^\circ\text{C}$

Symbol	Parameter	BTA/BTB 08-					Unit
		200 SW	400 SW	600 SW	700 SW	800 SW	
V_{DRM}	Repetitive peak off-state voltage (2)	± 200	± 400	± 600	± 700	± 800	V

(1) Gate supply : $I_G = 100\text{ mA}$ - $dI_G/dt = 1\text{ A}/\mu\text{s}$.

(2) $T_j = 110\text{ }^\circ\text{C}$.

February 1989

1/5

375

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction to ambient	60	°C/W
$R_{th(j-c)} DC$	Junction to case for DC	3.5	°C/W
$R_{th(j-c)} AC$	Junction to case for 360 ° conduction angle (F = 50 Hz)	2.6	°C/W

GATE CHARACTERISTICS (maximum values)

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

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			10	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 = 110 °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						25	mA
I _L	T _j = 25 °C V _D = 12 V R _L = 33 Ω Pulse duration > 20 μs I _G = 50 mA			I-III		25		mA
				II		50		
V _{TM} *	T _j = 25 °C I _{TM} = 11 A t _p = 10 ms						1.75	V
I _{DRM} *	T _j = 25 °C	V _{DRM} rated	Gate open				10	μA
	T _j = 110 °C					500		
dv/dt*	T _j = 110 °C Gate open Linear slope up to 0.67 V _{DRM}				50			V/μs
(di/dt) _o *	T _j = 110 °C (dv/dt) _o = 0.1 V/μs				4.5	7		A/ms
	T _j = 110 °C (dv/dt) _o = 50 V/μs				3.5	4.5		
t _{gt}	T _j = 25 °C di _G /dt = 1 A/μs I _G = 50 mA I _T = 11 A V _D = V _{DRM}			I-II-III		2		μs

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

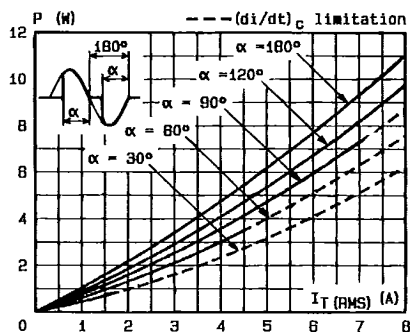


Fig.1 - Maximum mean power dissipation versus RMS on-state current ($f = 60$ Hz).

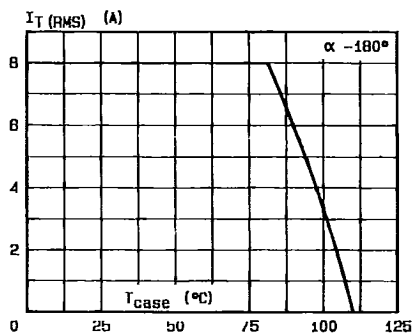


Fig.3 - RMS on-state current versus case temperature.

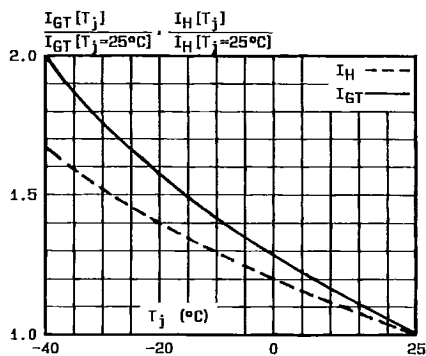


Fig.5 - Relative variation of gate trigger current and holding current versus junction temperature.

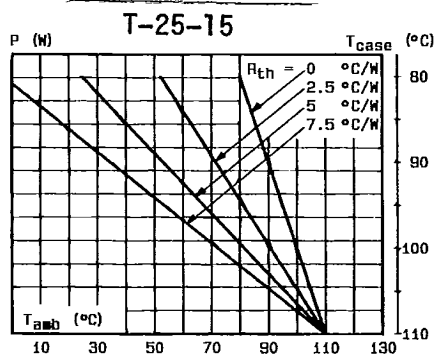


Fig.2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

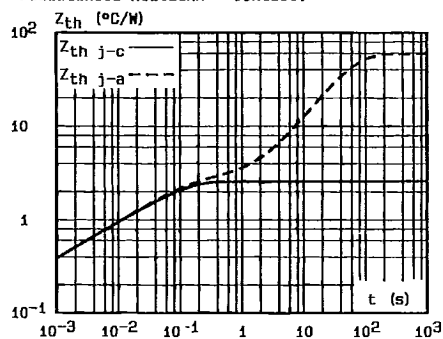


Fig.4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

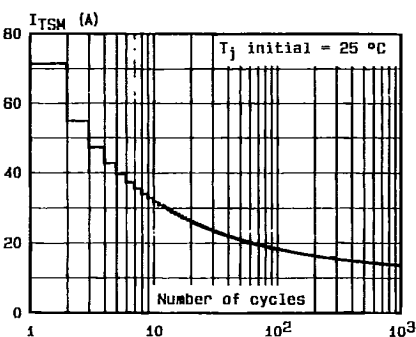


Fig.6 - Non repetitive surge peak on-state current versus number of cycles.

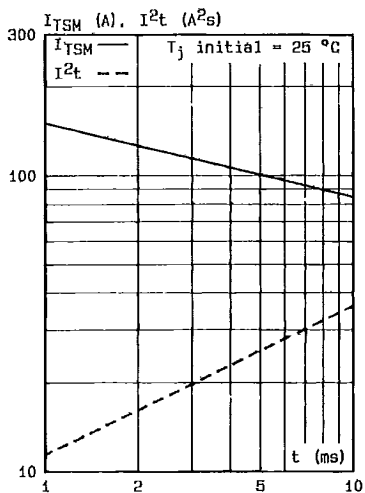


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

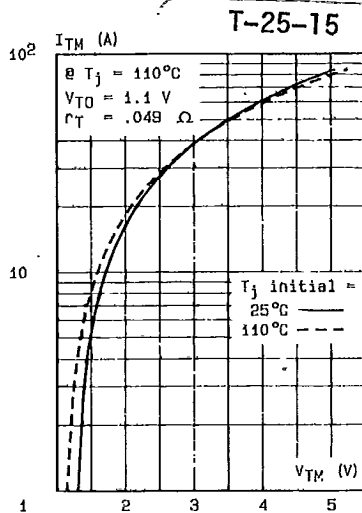


Fig.8 - On-state characteristics (maximum values).

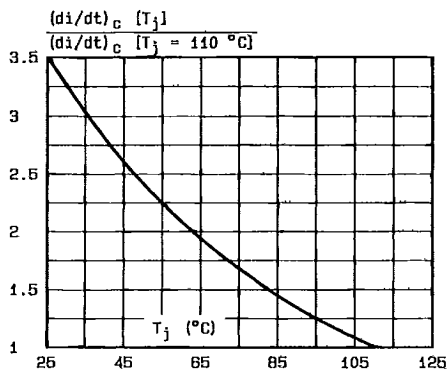


Fig.9 - Relative variation of $(di/dt)_c$ versus junction temperature.

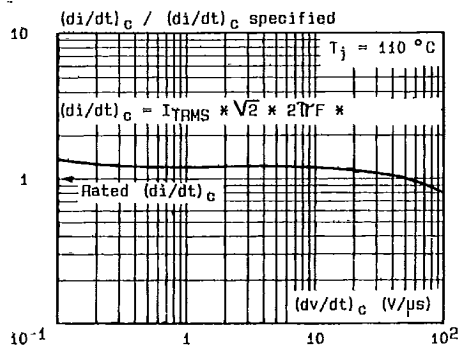


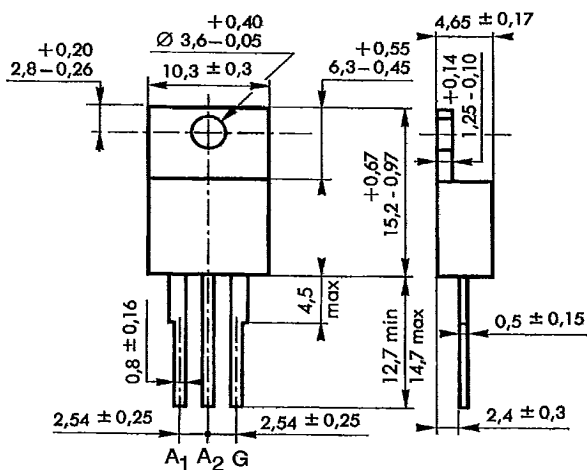
Fig.10 - Relative variation of $(di/dt)_c$ versus $(dv/dt)_c$ (inductive load) (typical values).

PACKAGE MECHANICAL DATA

S G S-THOMSON

TO 220 AB (CB-415) Plastic

T-25-15



Cooling method : by conduction (method C)

Marking : type number

Weight : 2 g