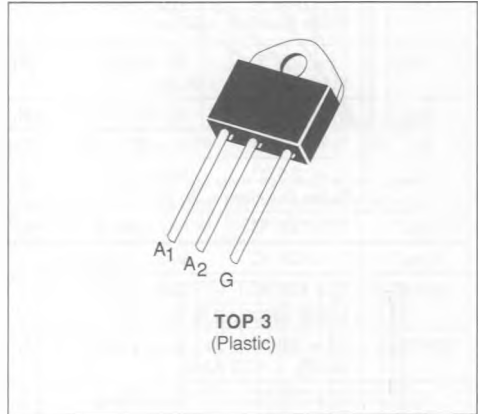# SGS-THOMSON
MICROELECTRONICS

BTB 26 B

TRIACS

- GLASS PASSIVATED CHIP
- I_{GT} SPECIFIED IN FOUR QUADRANTS

DESCRIPTION

This new design of plastic uninsulated power triacs offers maximum efficiency with maximum ease of mounting.

ADVANTAGES

- NO TAPPING REQUIRED FOR FIXING
- EXCELLENT THERMAL IMPEDANCE AND HIGH RELIABILITY CONSTRUCTION

A1 A2 G

TOP 3
(Plastic)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state Current (360° conduction angle)	$T_C = 90\ °C$	30	A
I_{TSM}	Non Repetitive Surge Peak on-state Current (T_j initial = 25 °C - Half sine wave)	t = 8.3 ms	260	A
		t = 10 ms	250	
I^2t	I^2t Value for Fusing	t = 10 ms	312.5	A^2s
di/dt	Critical Rate of Rise of on-state Current (1)	Repetitive F = 50 Hz	10	A/µs
		Non Repetitive	50	
T_{stg} T_j	Storage and Operating Junction Temperature Range		− 40 to 125 − 40 to 125	°C °C

Symbol	Parameter	BTB 26−					Unit
		200B	400B	600B	700B	800B	
V_{DRM}	Repetitive Peak off-state Voltage (2)	200	400	600	700	800	V

(1) $I_G = 1\ A$ $di_G/dt = 1\ A/µs$
(2) $T_j = 125\ °C$.

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction to Ambient	50	°C/W
$R_{th\ (c-h)}$	Contact (case-heatsink) with Grease	0.2	°C/W
$R_{th\ (j-c)}$ DC	Junction to Case for DC	1.2	°C/W
$R_{th\ (j-c)}$ AC	Junction to Case for 360 ° Conduction Angle (F = 50 Hz)	0.9	°C/W

GATE CHARACTERISTICS (maximum values)

$P_{GM} = 40$ W ($t_p = 10$ µs) $I_{GM} = 6$ A ($t_p = 10$ µs)

$P_{G (AV)} = 1$ W $V_{GM} = 16$ V ($t_p = 10$ µs)

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions			Quadrants	Min.	Typ.	Max.	Unit
I_{GT}	$T_j = 25$ °C $V_D = 12$ V Pulse Duration > 20 µs		$R_L = 33$ Ω	I-II-III	1		50	mA
				IV	1		100	
V_{GT}	$T_j = 25$ °C $V_D = 12$ V Pulse Duration > 20 µs		$R_L = 33$ Ω	I-II-III-IV			1.5	V
V_{GD}	$T_j = 125$ °C	$V_D = V_{DRM}$	$R_L = 3.3$ kΩ	I-II-III-IV	0.2			V
I_H^*	$T_j = 25$ °C	$I_T = 500$ mA	Gate Open			30	80	mA
I_L	$T_j = 25$ °C $V_D = 12$ V Pulse Duration > 20 µs		$I_G = 200$ mA	I-II-III-IV			100	mA
V_{TM}^*	$T_j = 25$ °C	$I_{TM} = 35$ A	$t_p = 10$ ms				1.7	V
I_{DRM}^*	$T_j = 125$ °C	V_{DRM} Specified				1.5	6	mA
dv/dt*	$T_j = 125$ °C Linear Slope up to $V_D = 67$ % V_{DRM}		Gate Open		250			V/µs
$(dv/dt)_c^*$	$T_C = 90$ °C $(di/dt)_c = 13.3$ A/ms		$V_D = V_{DRM}$ $I_T = 35$ A		5			V/µs
t_{gt}	$T_j = 25$ °C $I_G = 1$ A	$V_D = V_{DRM}$ $di_G/dt = 10$ A/µs	$I_T = 35$ A	I-II-III-IV		2.5		µs

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

PACKAGE MECHANICAL DATA

TOP 3 Plastic
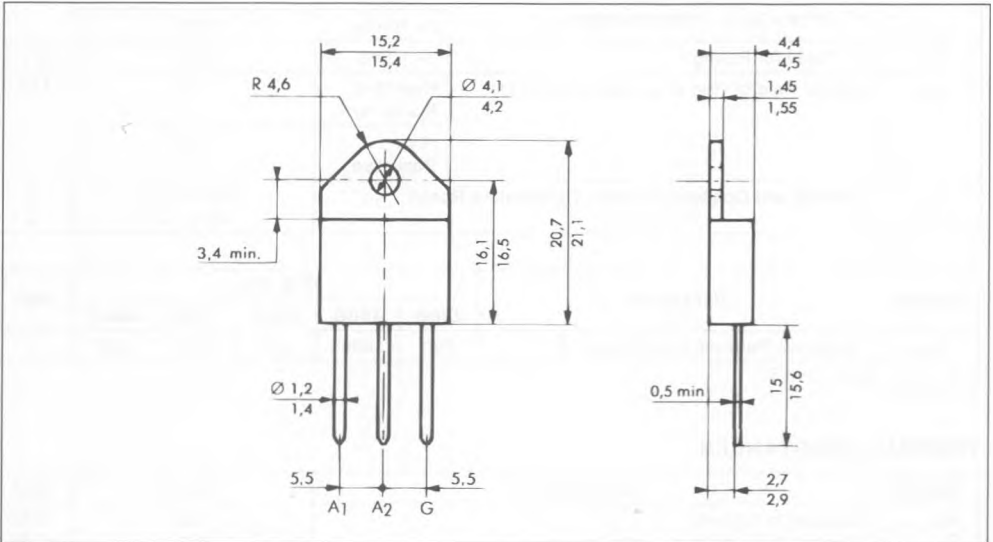
Cooling method : by conduction (method C)
Marking : type number
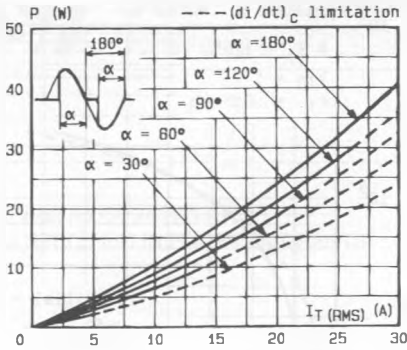Weight : 5 g

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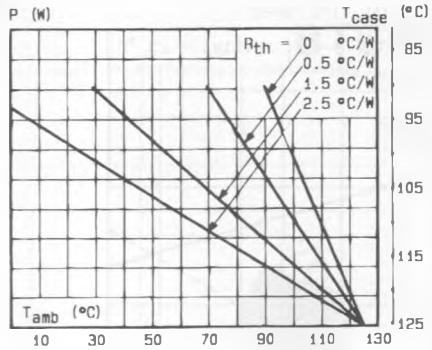Fig.1 - Maximum mean power dissipation versus RMS on-state current (F = 60 Hz).

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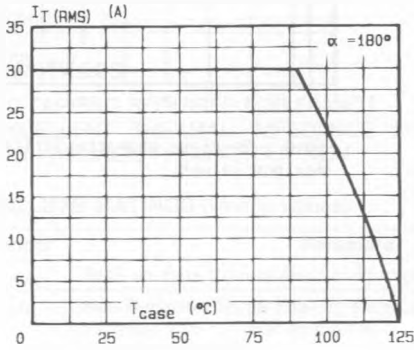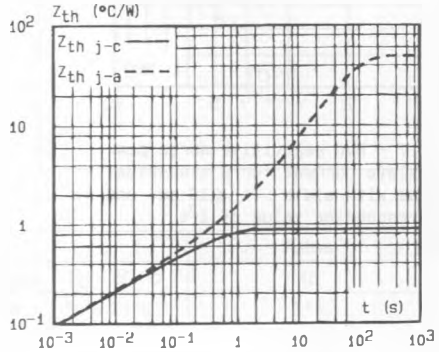

Fig.3 - RMS on-state current versus case temperature.

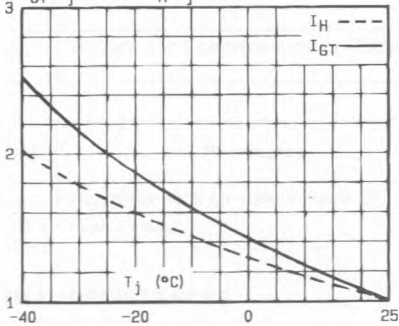Fig.4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

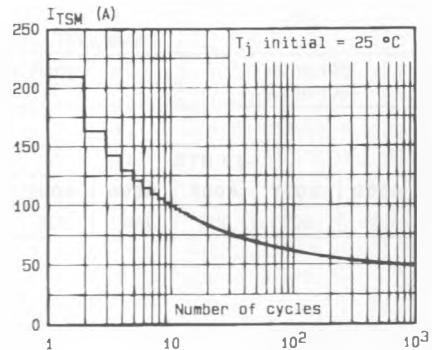Fig.5 - Relative variation of gate trigger current and holding current versus junction temperature.

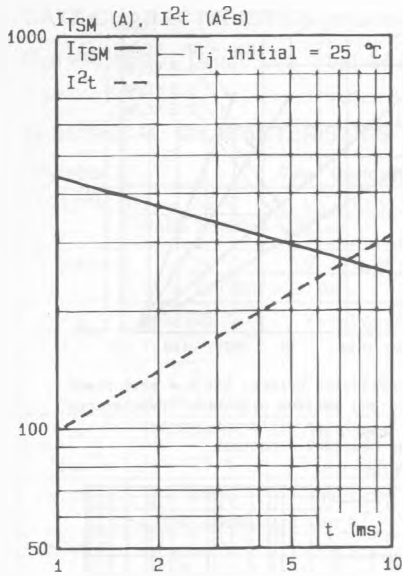Fig.6 - Non repetitive surge peak on-state current versus number of cycles.

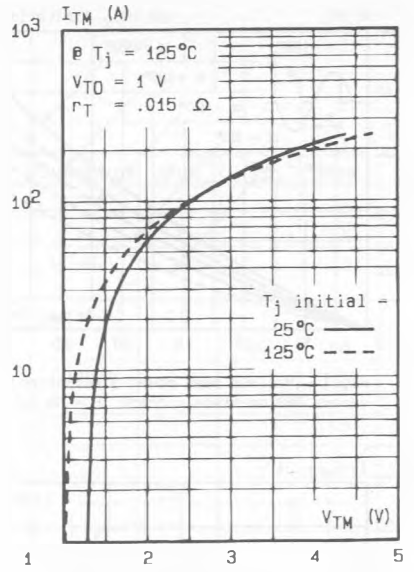Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : t ⩽ 10 ms, and corresponding value of I^2t.

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

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