# SGS-THOMSON MICROELECTRONICS

BTA26 BW/CW

SNUBBERLESS TRIACS

FEATURES

- HIGH COMMUTATION : $(dI/dt)c > 22A/ms$ without snubber
- HIGH SURGE CURRENT : $I_{TSM} = 250A$
- V_{DRM} UP TO 800V
- BTA Family :
  INSULATING VOLTAGE = 2500V(RMS)
  (UL RECOGNIZED : E81734)

DESCRIPTION

The BTA26 BW/CW triac family are high performance glass passivated chips technology.
The SNUBBERLESS™ concept offer suppression of RC network and it is suitable for application such as phase control and static switching on inductive or resistive load.

TOP 3
(Plastic)
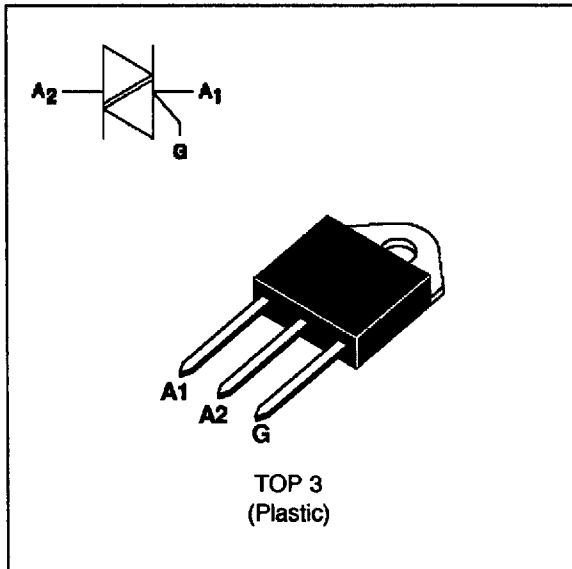
ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (360° conduction angle)	$T_c = 85 °C$	25	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = 25°C)	$t_p = 8.3 ms$	262	A
		$t_p = 10 ms$	250	
I^2t	I^2t value	$t_p = 10 ms$	312.5	A^2s
dI/dt	Critical rate of rise of on-state current Gate supply : $I_G = 500mA$ $diG/dt = 1A/\mu s$	Repetitive F = 50 Hz	20	A/μs
		Non Repetitive	100	
Tstg Tj	Storage and operating junction temperature range		- 40 to + 150 \n - 40 to + 125	°C \n °C
Tl	Maximum lead temperature for soldering during 10 s at 4.5 mm from case		260	°C

Symbol	Parameter	BTA26-... BW/CW				Unit
		400	600	700	800	
V_{DRM} V_{RRM}	Repetitive peak off-state voltage $T_j = 125 °C$	400	600	700	800	V

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
Rth (j-a)	Junction to ambient	50	°C/W
Rth (j-c) DC	Junction to case for DC	1.5	°C/W
Rth (j-c) AC	Junction to case for 360° conduction angle (F= 50 Hz)	1.1	°C/W

GATE CHARACTERISTICS (maximum values)

P_G (AV) = 1W P_{GM} = 40W (t_p = 20 μs) I_{GM} = 8A (t_p = 20 μs) V_{GM} = 16V (t_p = 20 μs).

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Quadrant		Suffix		Unit
					BW	CW	
I_{GT}	V_D=12V (DC) R_L=33Ω	Tj=25°C	I-II-III	MIN	2	2	mA
				MAX	50	35	
V_{GT}	V_D=12V (DC) R_L=33Ω	Tj=25°C	I-II-III	MAX	1.5		V
V_{GD}	V_D=V_{DRM} R_L=3.3kΩ	Tj=125°C	I-II-III	MIN	0.2		V
tgt	V_D=V_{DRM} I_G = 500mA dI_G/dt = 3A/μs	Tj=25°C	I-II-III	TYP	2		μs
I_L	I_G=1.2 I_{GT}	Tj=25°C	I-III	TYP	50	-	mA
			II	TYP	90	-	
			I-II-III	MAX	-	80	
I_H *	I_T= 500mA gate open	Tj=25°C		MAX	75	50	mA
V_{TM} *	I_{TM}= 35A t_p= 380μs	Tj=25°C		MAX	1.80		V
I_{DRM} I_{RRM}	V_{DRM} Rated V_{RRM} Rated	Tj=25°C		MAX	0.01		mA
		Tj=125°C		MAX	3		
dV/dt *	Linear slope up to V_D=67%V_{DRM} gate open	Tj=125°C		MIN	500	250	V/μs
				TYP	750	500	
(dI/dt)c *	Without snubber	Tj=125°C		MIN	22	13	A/ms
				TYP	44	26	

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

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ORDERING INFORMATION

Package	I$_{T(RMS)}$	V$_{DRM}$ / V$_{RRM}$	Sensitivity Specification	
	A	**V**	**BW**	**CW**
BTA (Insulated)	25	400	X	X
		600	X	X
		700	X	X
		800	X	X

Fig.1 : Maximum RMS power dissipation versus RMS on-state current (F=50Hz).
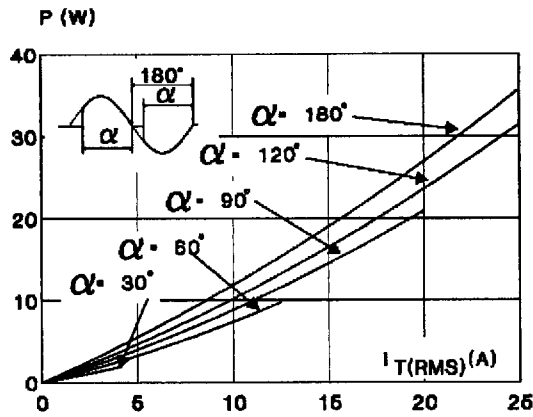(Curves are cut off by (dI/dt)c limitation)

Fig.2 : Correlation between maximum RMS 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.
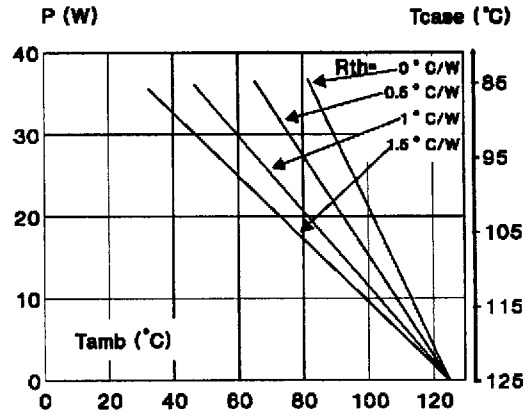
Fig.4 : Relative variation of thermal impedance versus pulse duration.

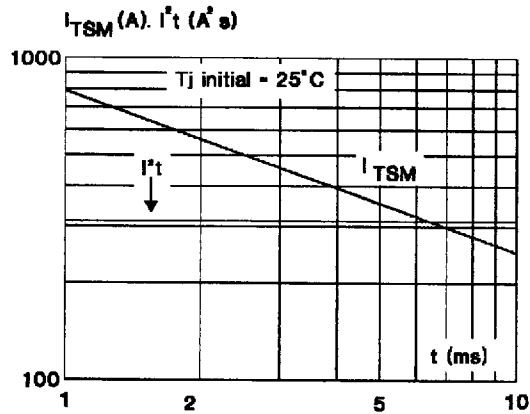**SGS-THOMSON**
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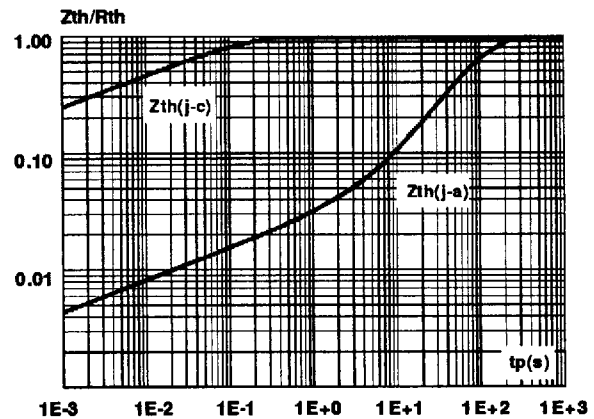
Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.
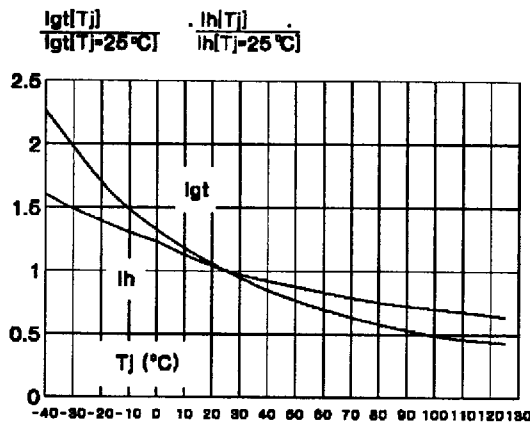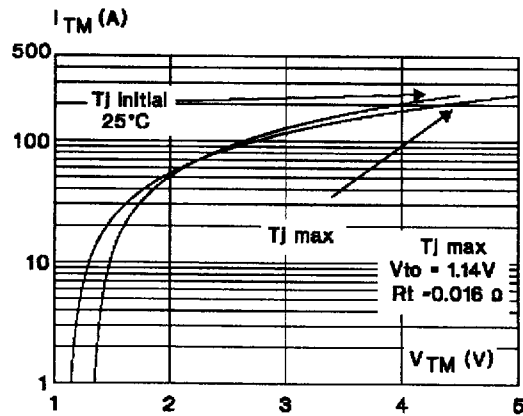

Fig.6 : Non Repetitive surge peak on-state current versus number of cycles.
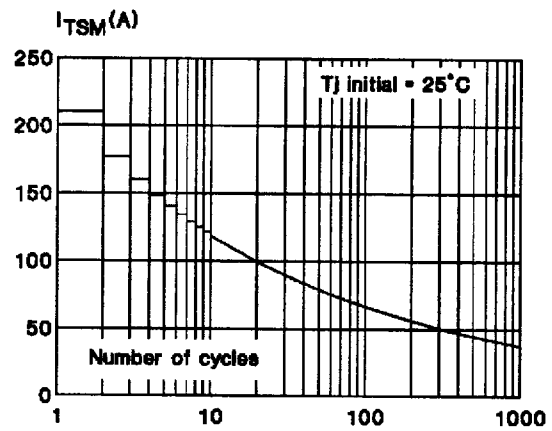
Fig.7 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : t ≤ 10ms, and corresponding value of I^{2}t.

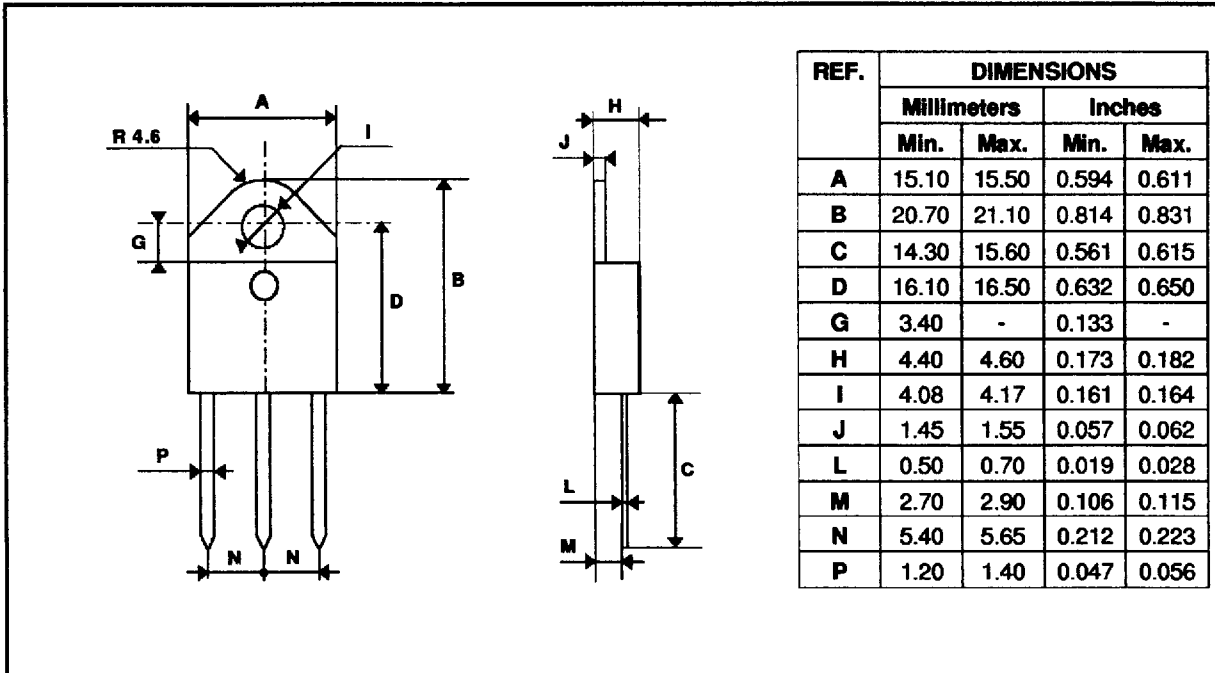**Fig.8** : On-state characteristics (maximum values).

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PACKAGE MECHANICAL DATA

TOP 3   Plastic

REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	15.10	15.50	0.594	0.611
B	20.70	21.10	0.814	0.831
C	14.30	15.60	0.561	0.615
D	16.10	16.50	0.632	0.650
G	3.40	-	0.133	-
H	4.40	4.60	0.173	0.182
I	4.08	4.17	0.161	0.164
J	1.45	1.55	0.057	0.062
L	0.50	0.70	0.019	0.028
M	2.70	2.90	0.106	0.115
N	5.40	5.65	0.212	0.223
P	1.20	1.40	0.047	0.056

Cooling method : C
Marking : type number
Weight : 4.7 g
Recommended torque value : 0.8 m.N.
Maximum torqur value : 1 m.N.

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