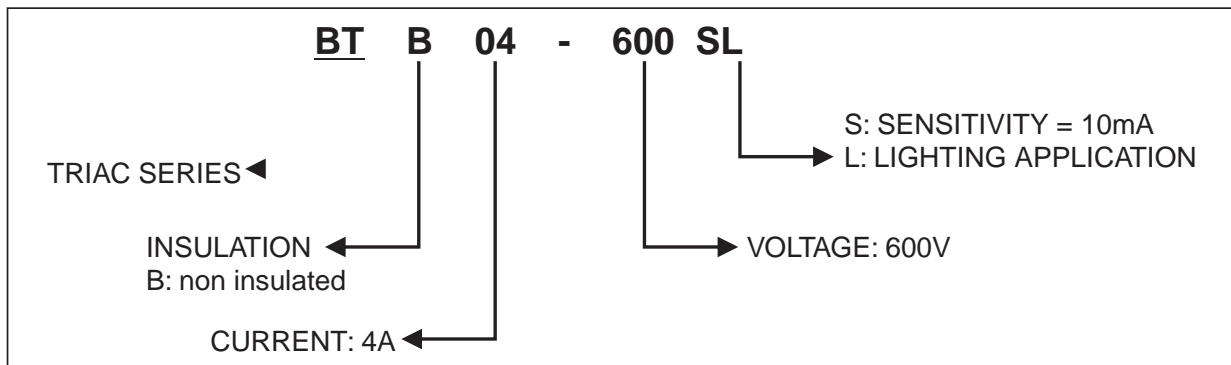
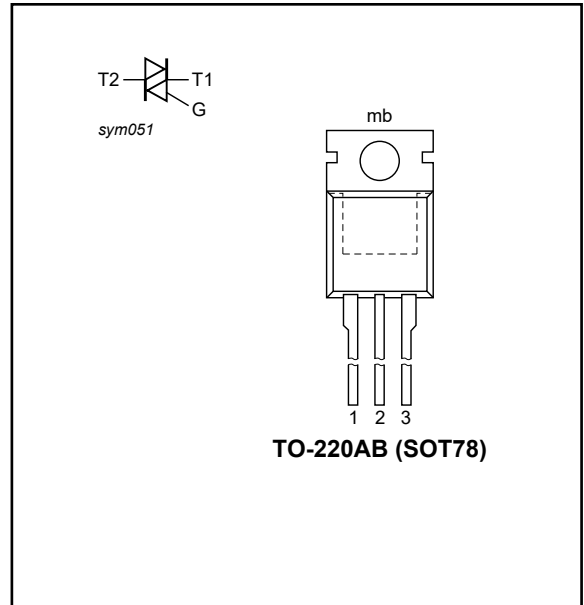


**MAIN FEATURES**

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
$V_{DRM} / V_{RRM}$	600	V
$I_{GT(Q1)}$	5	mA

**DESCRIPTION**

The BTB04-600SL 4 quadrants TRIAC is intended for general purpose applications where high surge current capability is required, such as lighting, corded power tools, industrial. This TRIAC features a gate current capability sensitivity of 10mA.



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (full sine wave)	TO-220AB Tc = 105°C	4	A
$I_{TSM}$	Non repetitive surge peak on-state current (full cycle, Tj initial = 25°C)	F = 50 Hz t = 20 ms	35	A
		F = 60 Hz t = 16.7 ms	38	
$I^2t$	$I^2t$ value for fusing	tp = 10ms	6	A <sup>2</sup> s
dI/dt	Critical rate of rise of on-state current IG = 2 x IGT, tr ≤ 100 ns	Repetitive F = 100Hz	50	A/μs
IGM	Peak gate	tp = 20μs Tj = 125°C	4	A
PG(AV)	Average gate power dissipation	Tj = 125°C	0.5	W
Tstg	Storage junction temperature range		-40 to +150	°C
Tj	Operating junction temperature range		-40 to +125	

**ELECTRICAL CHARACTERISTICS (Tj = 25°C, unless otherwise specified)**

Symbol	Test conditions	Quadrant		Value	Unit
$I_{GT}^{(1)}$	VD = 12V RL = 30Ω	I - II - III	MAX.	<5	mA
		IV	MAX.	5	
VGT	VD = 12V RL = 30Ω	ALL	MAX.	1.3	V
VGD	VD = VDRM RL = 3.3kΩ Tj = 125°C	ALL	MIN.	0.2	V
$I_H^{(2)}$	IT = 100mA		MAX.	15	mA
dV/dt <sup>(2)</sup>	VD = 67% VDRM gate open Tj = 125°C		MIN.	75	V/μs
(dV/dt)c <sup>(2)</sup>	(dI/dt)c = 1.8A/ms Tj = 125°C		MIN.	10	V/μs

**STATIC CHARACTERISTICS**

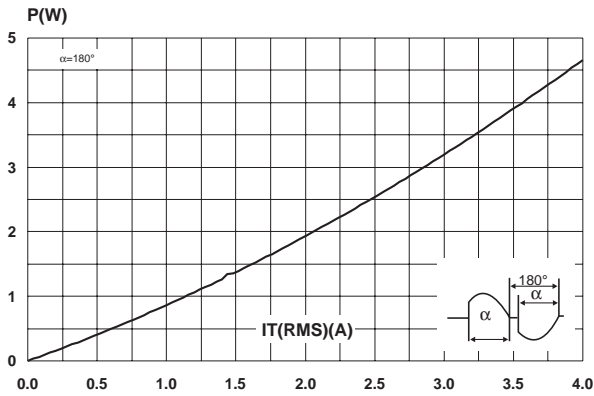
Symbol	Test Conditions		Value	Unit	
$V_{TM}^{(2)}$	ITM = 5A tp = 380μs	Tj = 25°C	MAX.	1.5	V
$V_{TO}^{(2)}$	Threshold voltage	Tj = 125°C	MAX.	0.85	V
Rd <sup>(2)</sup>	Dynamic resistance	Tj = 125°C	MAX.	100	mΩ
IDRM IRRM	VDRM = VRRM	Tj = 25°C	MAX.	5	μA
		Tj = 125°C		1	mA

**Note 1:** minimum IGT is guaranteed at 5% of IGT max.

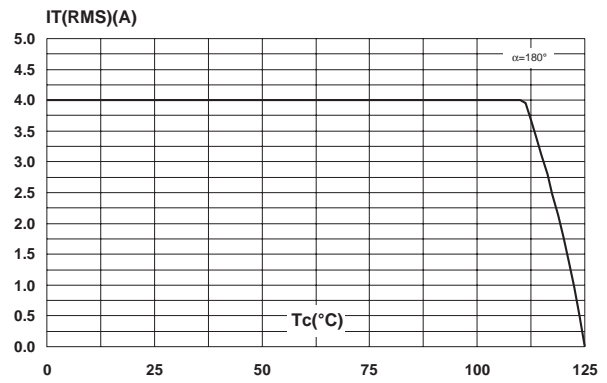
**Note 2:** for both polarities of A2 referenced to A1.

**THERMAL RESISTANCE**

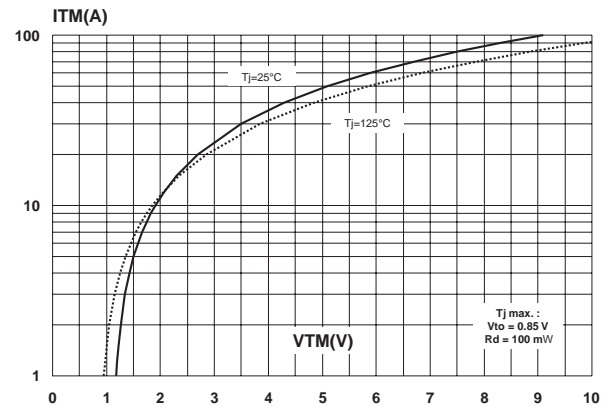
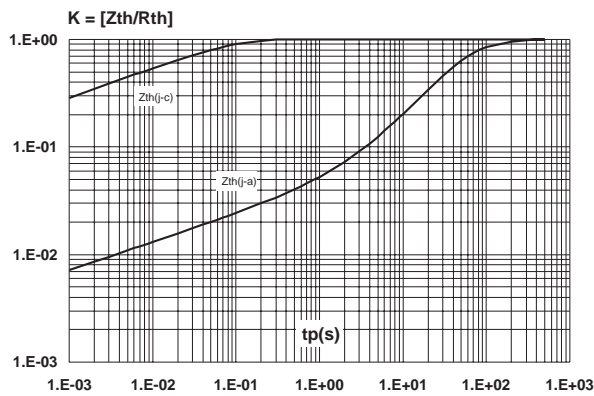
Symbol	Parameter	Value	Unit
Rth (j-c)	Junction to case (AC)	3	°C/W
Rth (j-a)	Junction to ambient	60	°C/W



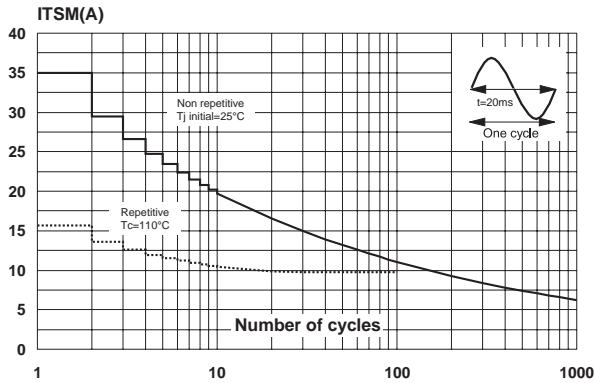
**Fig.1:** Relative variation of thermal impedance versus pulse duration.



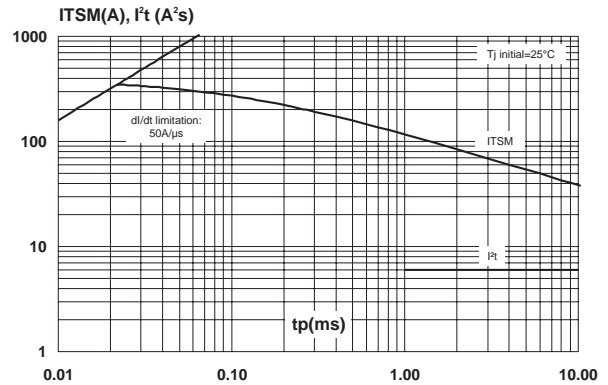
**Fig.2:** On-state characteristics (maximum values)



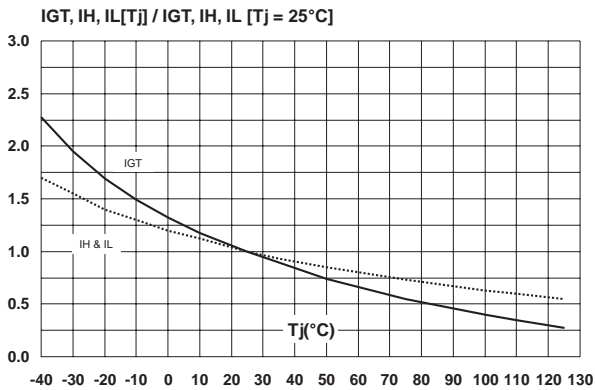
**Fig. 3:** Surge peak on-state current versus number of cycles.



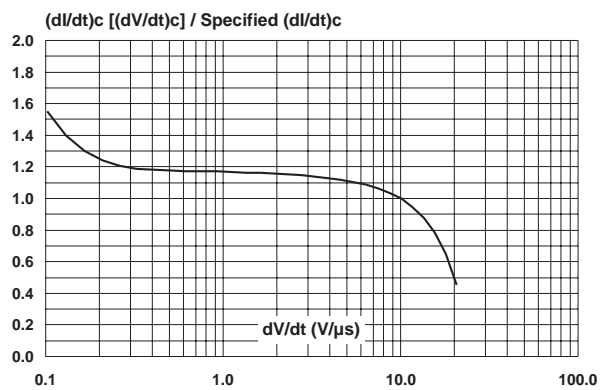
**Fig. 4:** Non repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$ .



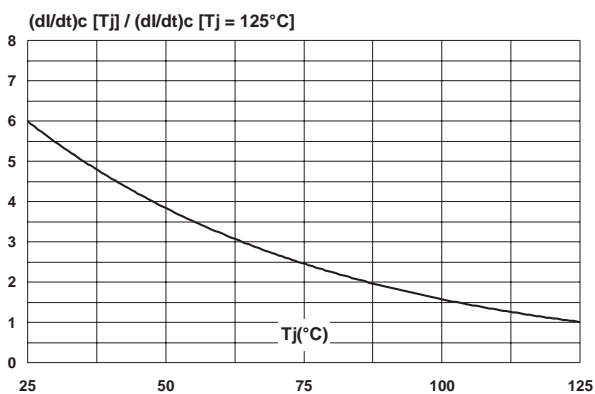
**Fig. 5:** Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).



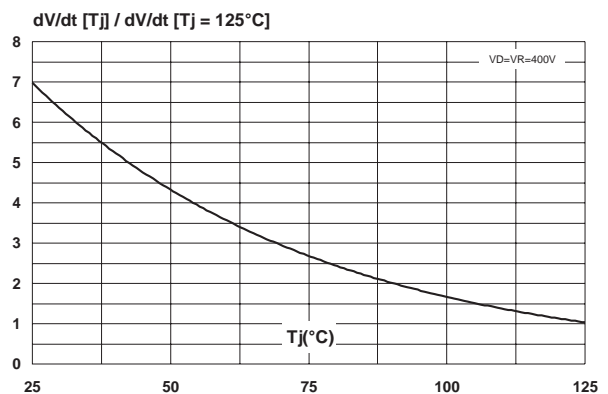
**Fig. 6:** Relative variation of critical rate of decrease of main current versus reapplied  $dV/dt$  (typical values).



**Fig. 7:** Relative variation of critical rate of decrease of main current versus junction temperature.



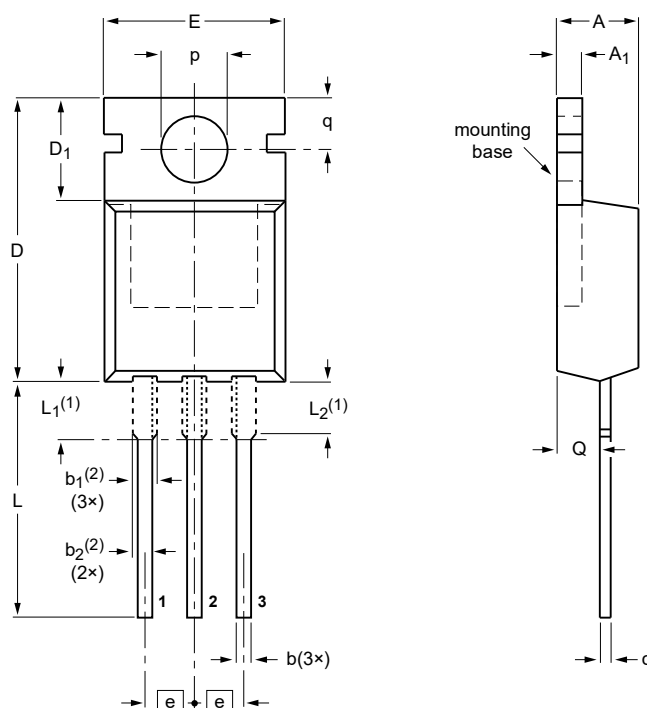
**Fig. 8:** Relative variation of static  $dV/dt$  immunity versus junction temperature.



**PACKAGE MECHANICAL DATA**

Plastic single-ended package; heatsink mounted; 1 mounting hole; 3-lead TO-220AB

SOT78



**DIMENSIONS (mm are the original dimensions)**

UNIT	A	A <sub>1</sub>	b	b <sub>1</sub> (2)	b <sub>2</sub> (2)	c	D	D <sub>1</sub>	E	e	L	L <sub>1</sub> (1)	L <sub>2</sub> (1) max.	p	q	Q
mm	4.7 4.1	1.40 1.25	0.9 0.6	1.6 1.0	1.3 1.0	0.7 0.4	16.0 15.2	6.6 5.9	10.3 9.7	2.54	15.0 12.8	3.30 2.79	3.0	3.8 3.5	3.0 2.7	2.6 2.2

**Notes**

1. Lead shoulder designs may vary.
2. Dimension includes excess dambar.

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA		
SOT78		3-lead TO-220AB	SC-46		08-04-23 08-06-13

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