

## TRIAC series

### 1 Description

BTA24series triacs with low holding and latchingcurrent are especially recommended for use onmiddle and small resistance type power load.

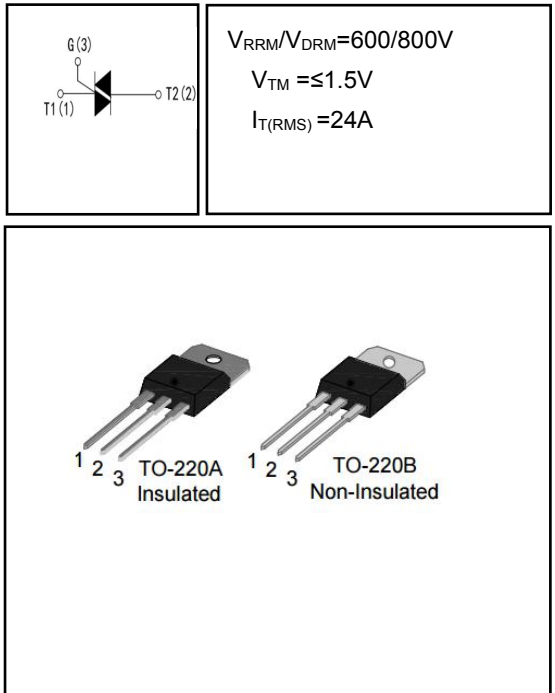
BTA series provide insulation voltage rated at 2500V RMS from all three terminals to external heatsink complying with UL standards (File ref: E252906).

### 2 Features

- High current output up to 24A
- Low Peak on-state voltage drop
- High voltage
- High reliability

### 3 Applications

- jet pumps of dishwashers
- fans of air-conditioner
- power charger
- AC Motor control



### 4 Electrical Characteristics

#### 4.1 Absolute Maximum Ratings (T<sub>c</sub>=25°C, unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Repetitive peak off-state voltage (T <sub>j</sub> =25°C)	V <sub>DRM</sub>	600/800	V
Repetitive peak reverse voltage (T <sub>j</sub> =25°C)	V <sub>RRM</sub>	600/800	V
Non repetitive surge peak Off-state voltage	V <sub>DSM</sub>	+ 100	V
Non repetitive peak reverse voltage	V <sub>RSM</sub>	+ 100	V
RMS on-state current	I <sub>T(RMS)</sub>	24	A
Non repetitive surge peak on-state current	I <sub>TSM</sub>	250	A
		240	
I <sup>2</sup> t value for fusing (tp=10ms)	I <sup>2</sup> t	340	A
Repetitive rate of rise of on-state current (I <sub>TM</sub> =20A I <sub>G</sub> =50mA dI <sub>G</sub> /dt 50mA/ms)	dI <sub>T</sub> /dt	50	A/us
Peak gate current	I <sub>GM</sub>	4	A
Peak gate power	P <sub>GM</sub>	10	W
Average gate power dissipation	P <sub>G(AV)</sub>	1	W
Operating junction temperature range	T <sub>J</sub>	- 40 ~ 150	°C
Storage junction temperature range	T <sub>STG</sub>	- 40 ~ 125	°C

#### 4.2 Thermal Characteristics

PARAMETER	SYMBOL	VALUE		UNIT
		TO-220(Non)	To-220(Ins)	
Thermal Resistance, Junction to Case-sink	R <sub>thJC</sub>	1.2	3.9	°C/W

**4.3 Electrical Characteristics** (Tc=25°C, unless otherwise noted)

SYMBOL	PARAMETER	Test Conditions	Min	Typ	Max	Unit	
I <sub>GT</sub>	Triggering gate current	V <sub>D</sub> =12V R <sub>L</sub> =33Ω	I - II - III	-	-	35	mA
			IV	-	-	-	
			ALL	-	-	1.3	
V <sub>GT</sub>	Triggering gate voltage		-	-	1.3	V	
V <sub>GD</sub>	Non-triggering gate voltage	V <sub>D</sub> =V <sub>DRM</sub> T <sub>J</sub> =125°C R <sub>L</sub> =3.3KΩ	0.2	-	-	V	
I <sub>L</sub>	Latching Current	I <sub>G</sub> =1.2I <sub>GT</sub>	I - III	-	-	70	mA
			II	-	-	80	
I <sub>H</sub>	Holding Current	I <sub>T</sub> =100mA	-	-	50	mA	
dV/dt	Critical Rate of Rise of Off-state Voltage	V <sub>D</sub> =2/3V <sub>DRM</sub> Gate Open T <sub>J</sub> =125°C	500	-	-	V/us	
V <sub>TM</sub>	Peak Forward On-State Voltage	I <sub>TM</sub> =35A tp=380us	-	-	1.5	V	
I <sub>DRM</sub>	Maximum forward or reverse leakage current	V <sub>D</sub> =V <sub>DRM</sub> V <sub>R</sub> =V <sub>RRM</sub>	T <sub>J</sub> =25°C	-	-	5	uA
I <sub>RRM</sub>	Maximum reverse leakage current		T <sub>J</sub> =125°C	-	-	2	mA

**5 Typical characteristics diagrams**

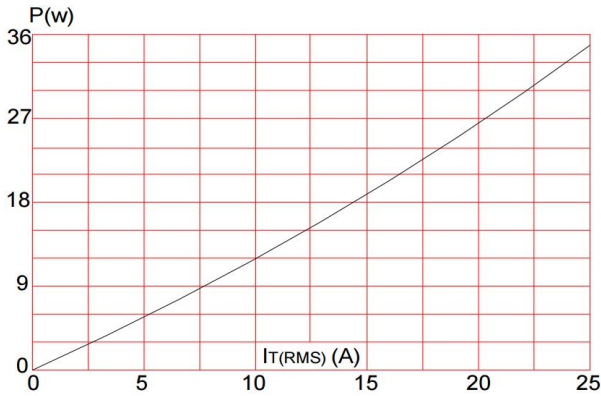


FIG.1: Maximum power dissipation versus RMS on-state current

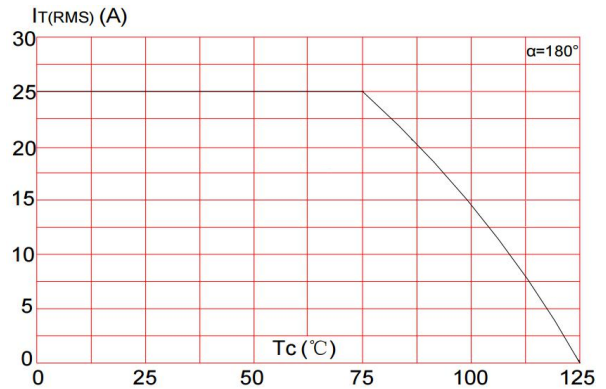


FIG.2: RMS on-state current versus case temperature

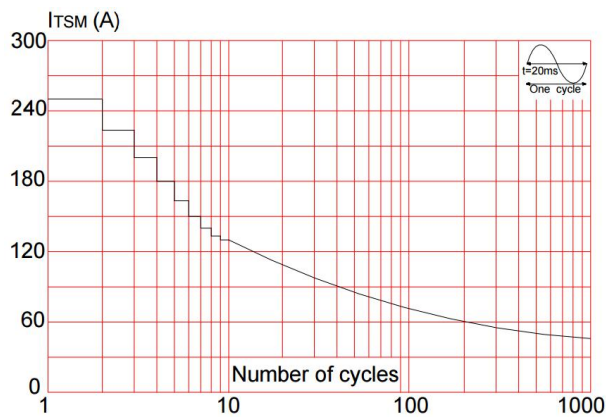


FIG.3: Surge peak on-state current versus number of cycles

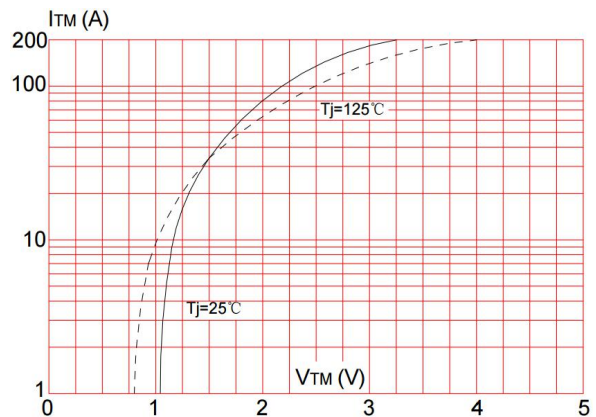


FIG.4: On-state characteristics (maximum values)

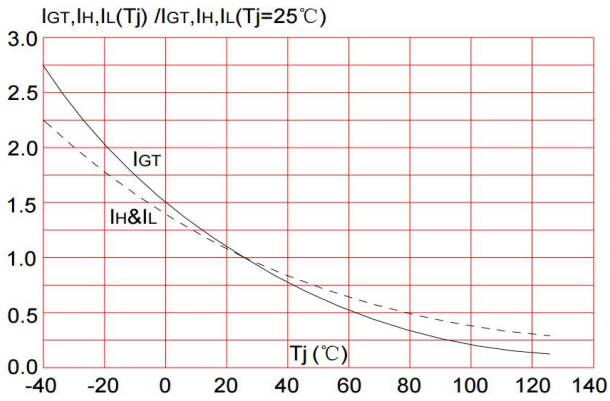
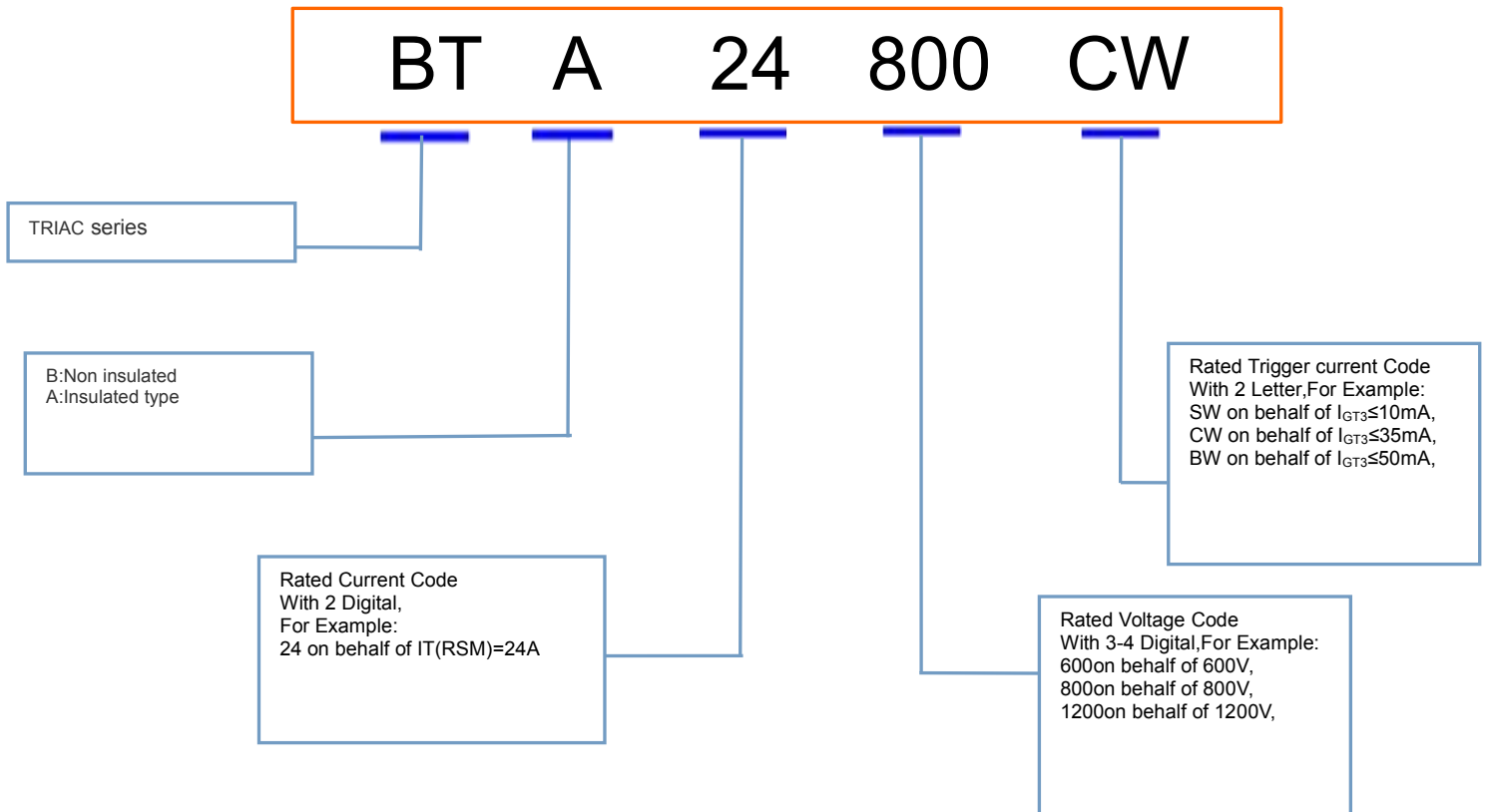
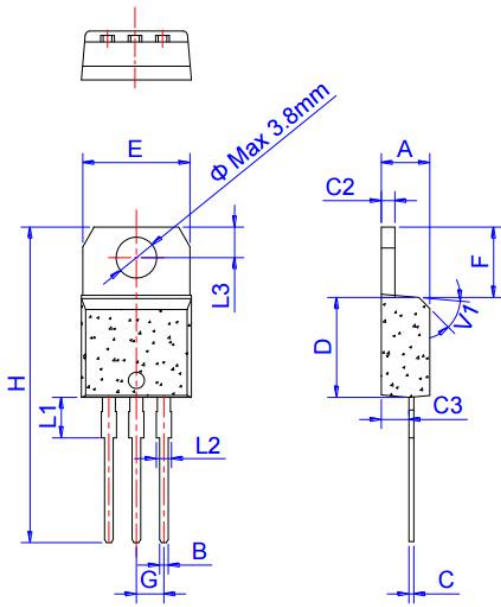


FIG.5: Relative variations of gate trigger current, holding current and latching current versus junction temperature

## 6 Product Names Rules

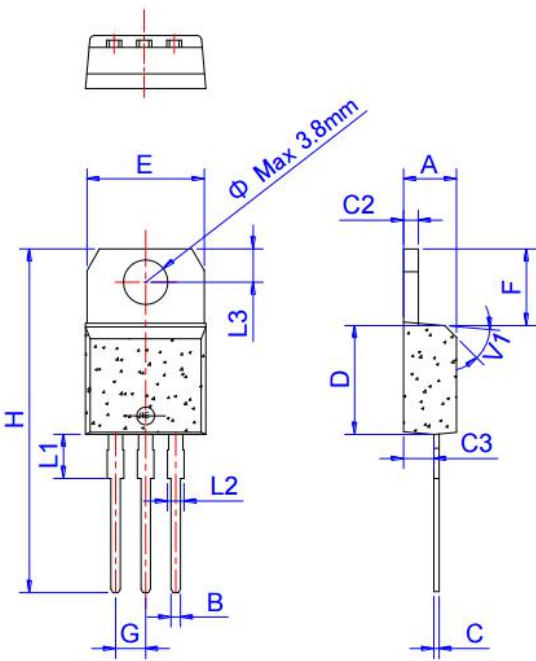


**7 Dimensions**



TO-220A Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	



TO-220B Non-Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

## 8 Attentions

- ROUM Semiconductor Technology CO.,LTD. reserves the right to change the specification without prior notice! The customer should obtain the latest version of the information before making the order and verify that the information is complete and up to date.
- It is the responsibility of the purchaser for any failure or failure of any semiconductor product under certain conditions. It is the responsibility of the purchaser to comply with safety standards and to take safety measures in the system design and machine manufacturing of Roma products in order to avoid potential risk of failure. Injury or property damage.
- Product promotion is endless, our company will be dedicated to provide customers with better products.

## 10 Appendix

Revision history:

Date	REV.	Description	Page
2017.09.22	1.0	Original	