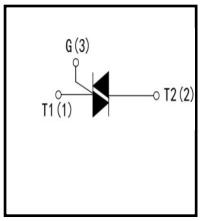
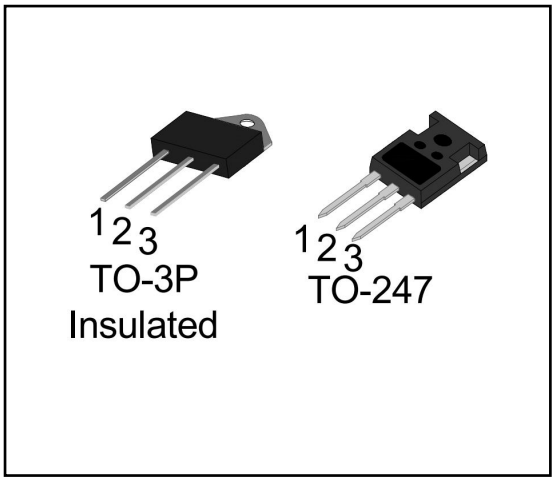
TRIAC series

1 Description

With high ability to withstand the shock loading of large current, BTA41 series triacs provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products especially recommended for use on inductive load. From all three terminals to external heatsink BTA series provides a rated insulation voltage of 2500 VRMS,complying with UL standards (File ref: E252906).



V_{RRM}/V_{DRM}=600/800/1200V
V_{TM} =≤1.5V
$I_{T(RMS)}$ =40A



2 Features

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

3 Applications

- jet pumps of dishwashers
- fans of air-conditioner
- power charger

4 Electrical Characteristics

4.1 Absolute Maximum Ratings （Tc=25℃,unless otherwise noted）

PARAMETER		SYMBOL	VALUE	UNIT
Repetitive peak off-state voltage (Tj=25℃)		V_{DRM}	600/800/1200	V
Repetitive peak reverse voltage (Tj=25℃)		V_{RRM}	600/800/1200	V
Non repetitive surge peak Off-state voltage		V_{DSM}	V_{DRM}+ 100	V
Non repetitive peak reverse voltage		V_{RSM}	V_{RRM}+ 100	V
RMS on-state current	TO-3P(Ins) (TC=80℃)	$I_{T(RMS)}$	40	A
	TO-247 (TC=90℃)			
Non repetitive surge peak on-state current	tp=8.3ms	I_{TSM}	420	A
	tp=10ms		400	
I^2t value for fusing (tp=10ms)		I^2t	880	A
Repetitive rate of rise of on-state current (G=2*I_{GT})		$d_{IT/dt}$	50	A/us
Peak gate current		I_{GM}	4	A
Peak gate power		P_{GM}	10	W
Average gate power dissipation		$P_{G(AV)}$	1	W
Operating junction temperature range		T_J	- 40 ~ 125	℃
Storage junction temperature range		T_{STG}	- 40 ~ 150	℃

4.2 Thermal Characteristics

PARAMETER	SYMBOL	VALUE		UNIT
		TO-3P(Ins)	TO-247	
Thermal Resistance, Junction to Case-sink	R_{thJC}	1.05	0.85	℃/W

4.3 Electrical Characteristics (Tc=25℃,unless otherwise noted)

SYMBOL	PARAMETER	Test Conditions		Min	Typ	Max	Unit
I_{GT}	Triggering gate current	V_D=12V R_L=33Ω	Ⅰ-Ⅱ-Ⅲ	-	-	50	mA
			Ⅳ	-	-	-	
V_{GT}	Triggering gate voltage		ALL	-	-	1.3	V
V_{GD}	Non-triggering gate voltage	V_D=V_{DRM} T_j=125℃ R_L=3.3KΩ		0.2	-	-	V
I_L	Latching Current	I_G=1.2I_{GT}	Ⅰ-Ⅲ	-	-	80	mA
			Ⅱ	-	-	100	
I_H	Holding Current	I_T=100mA		-	-	70	mA
dv/dt	Critical Rate of Rise of Off-state Voltage	V_D=2/3V_{DRM} Gate Open T_j=125℃		1500	-	-	V/us
V_{TM}	Peak Forward On-State Voltage	I_{TM}=60A tp=380us		-	1.25	1.5	V
I_{DRM}	Maximum forward or reverse leakage current	V_D=V_{DRM} V_R=V_{RRM}	Tj=25℃	-	-	10	uA
I_{RRM}	Maximum reverse leakage current		Tj=125℃	-	-	5	mA

5 Typical characteristics diagrams

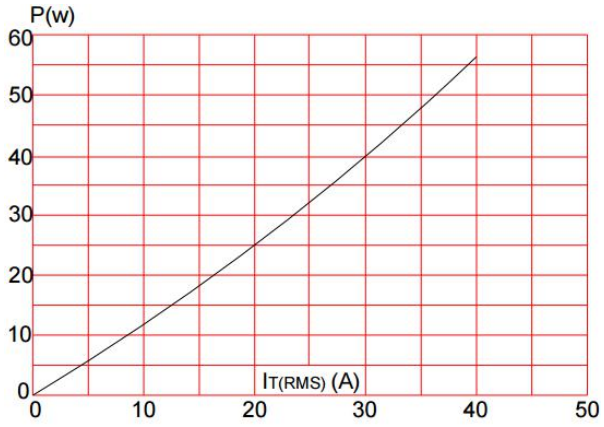


FIG.1: Maximum power dissipation versus RMS on-state current

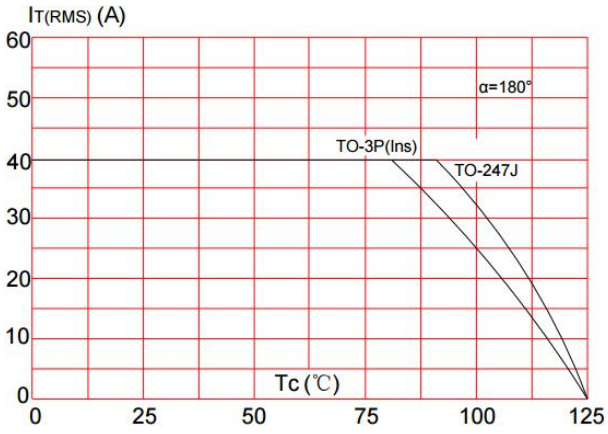


FIG.2: RMS on-state current versus case temperature

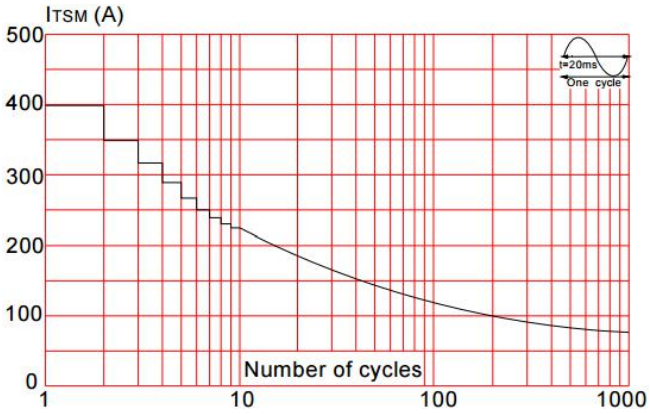


FIG.3: Surge peak on-state current versus number of cycles

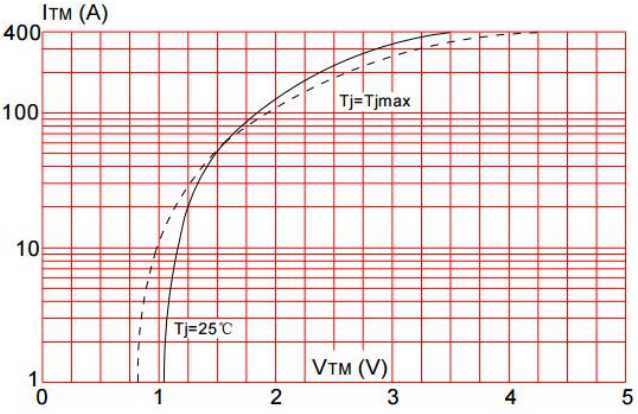


FIG.4: On-state characteristics (maximum values)

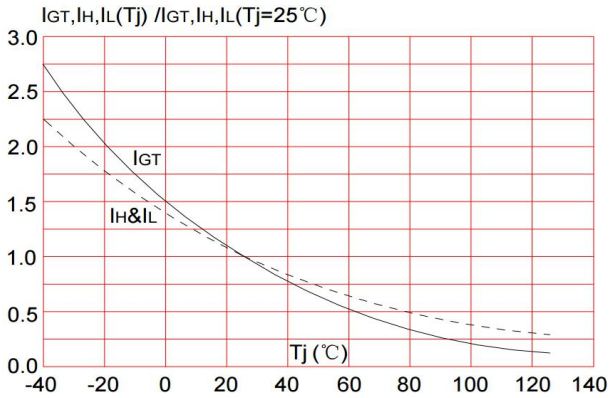
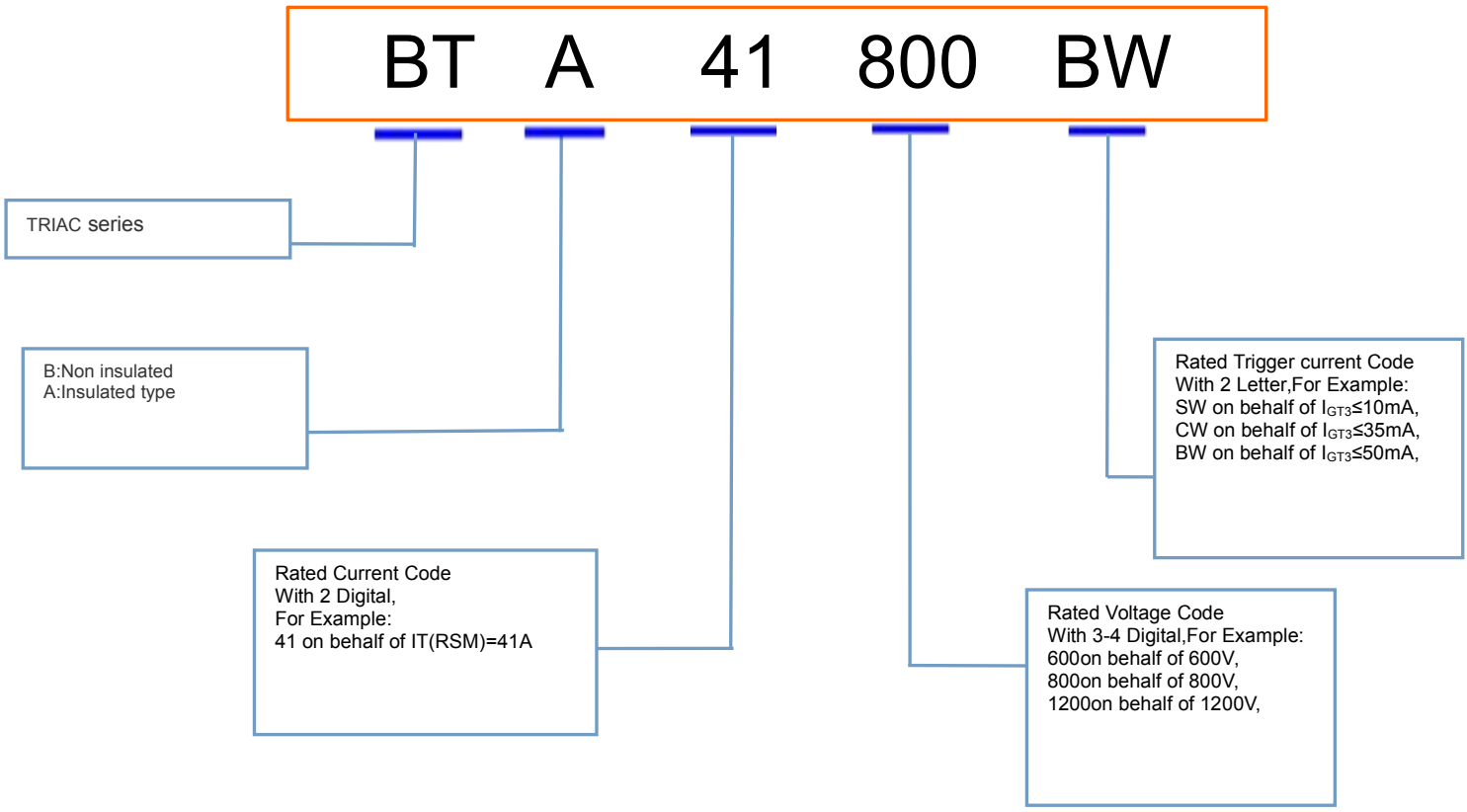
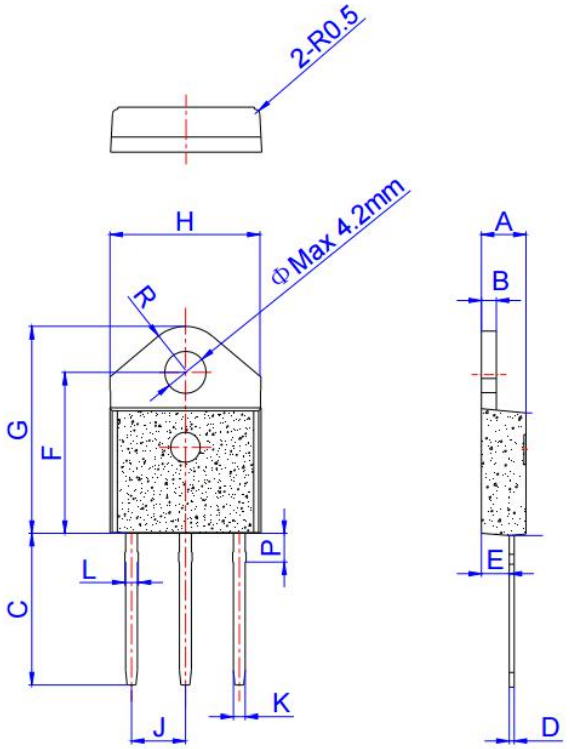


FIG.5: Relative variations of gate trigger current, holding current and latching current versus junction temperature

6 Product Names Rules

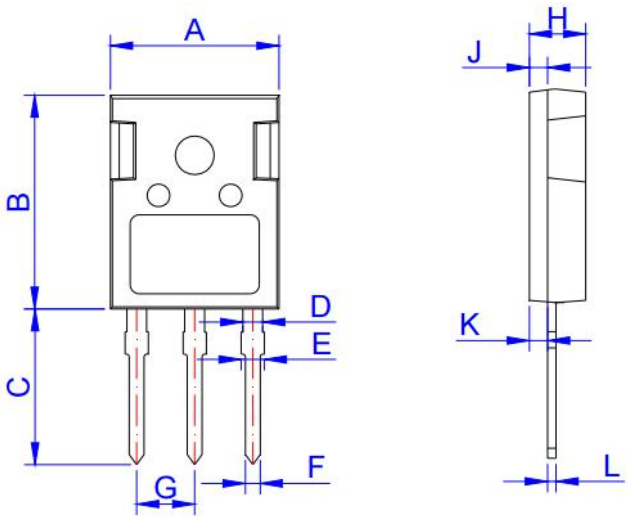


7 Dimensions



TO-3P Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	0.213		0.222
K	1.10		1.40	0.043		0.055
L	1.35		1.50	0.053		0.059
P	2.80		3.00	0.110		0.118
R		4.35			0.171	



TO-247

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.50	15.80	16.10	0.610	0.622	0.634
B	20.80	21.00	22.20	0.819	0.828	0.874
C	19.70	20.00	20.30	0.776	0.787	0.799
D	1.80	2.00	2.20	0.071	0.079	0.087
E	1.90	2.10	2.30	0.075	0.083	0.091
F	1.00	1.20	1.40	0.039	0.047	0.055
G		5.44			0.214	
H	4.80	5.00	5.20	0.189	0.197	0.205
J	1.90	2.00	2.10	0.075	0.079	0.083
K	2.20	2.35	2.50	0.087	0.093	0.098
L	0.41	0.60	0.79	0.016	0.024	0.031

8 Attentions

- Jiangsu Donghai 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 WXDH 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
2018.10.22	1.0	Original	