BTA41 Series

40A 3Quadrants TRIACs

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	40	A
V_{DRM} / V_{RRM}	800/1200/1600	V
V_{TM}	1.55	V

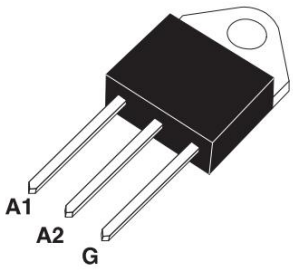
Feature

With high ability to withstand the shock loading of large current,With high commutation performances, 3 quadrants products especially recommended for use on inductive load.

Application

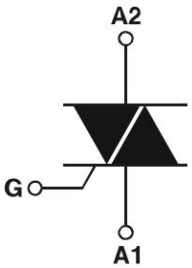
Washing machine, vacuums, massager, solid state relay, AC Motor speed regulation and so on.

Package

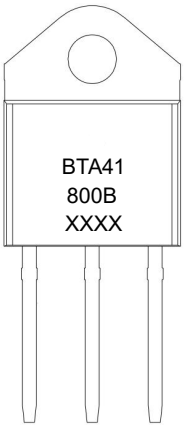


TO-3P Insulated

Circuit diagram



Marking



Absolute maximum ratings (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	V_{DRM}	800/1200/1600	V
Repetitive peak reverse voltage	V_{RRM}	800/1200/1600	V
RMS on-state current	$I_{T(RMS)}$	40	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	400	A
I^2t value for fusing (tp=10ms)	I^2t	880	A^2s
Critical rate of rise of on-state current (I_G =2×I_{GT})	dI/dt	50	A/μs
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Junction Temperature	T_J	-40 ~ +125	℃
Storage Temperature	T_{STG}	-40 ~ +150	℃

Electrical characteristics (T_A=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition		Value		Unit
Gate trigger current	I_{GT}	V_D =12V R_L = 33Ω	Ⅰ-Ⅱ-Ⅲ	MAX.	50	mA
Gate trigger voltage	V_{GT}		Ⅰ-Ⅱ-Ⅲ	MAX.	1.3	V
Gate non-trigger voltage	V_{GD}	V_D =V_{DRM} T_j =125 ℃ R_L =3.3KΩ	Ⅰ-Ⅱ-Ⅲ	MIN.	0.2	V
latching current	I_L	I_G =1.2I_{GT}	Ⅰ-Ⅲ	MAX.	80	mA
			Ⅱ		100	
Holding current	I_H	I_T =100mA		MAX.	60	mA
Critical-rate of rise of commutation voltage	dV/dt	V_D=2/3V_{DRM} Gate Open T_j =125℃		MIN.	1000	V/μs
STATIC CHARACTERISTICS						
Forward "on" voltage	V_{TM}	I_{TM} =60A tp=380μs		MAX.	1.55	V
Repetitive Peak Off-State Current	I_{DRM}	V_D =V_{DRM} V_R =V_{RRM}	T_j=25℃	MAX.	10	μA
Repetitive Peak Reverse Current	I_{RRM}		T_j=125℃	MAX.	5	mA
THERMAL RESISTANCES						
Thermal resistance	Rth(j-c)	Junction to case(AC)		TYP.	0.9	℃/W
	Rth(j-a)	Junction to ambient		TYP.	50	℃/W

Typical Characteristics

FIG.1: Maximum power dissipation versus RMS on-state current (full cycle)

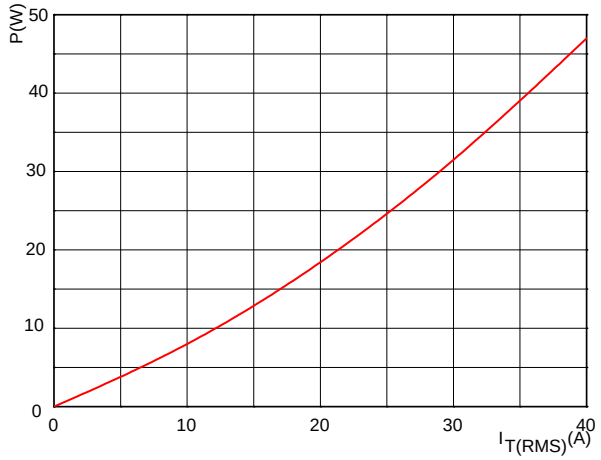


FIG.2: RMS on-state current versus case temperature (full cycle)

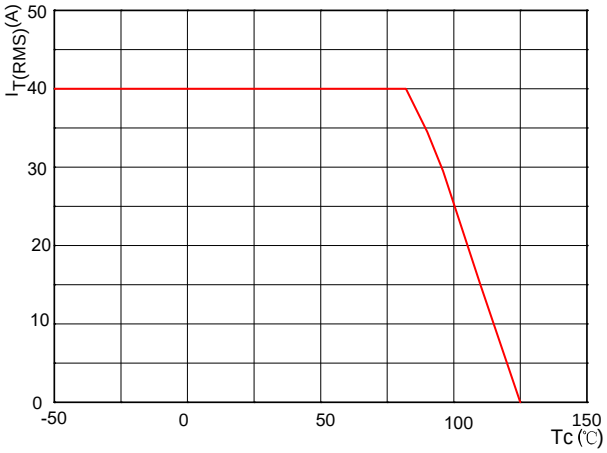


FIG.3: Surge peak on-state current versus number of cycles

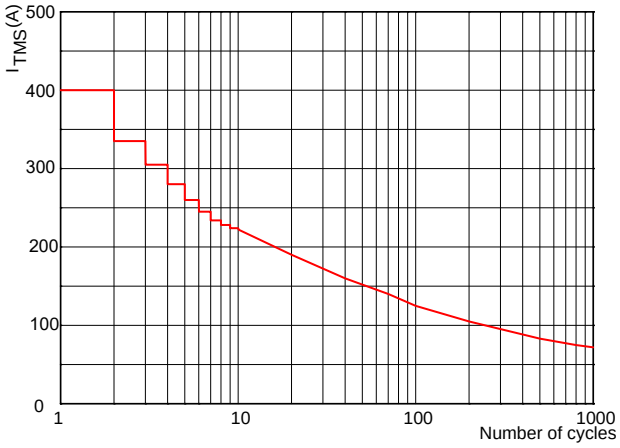


FIG.4: On-state characteristics (maximum values)

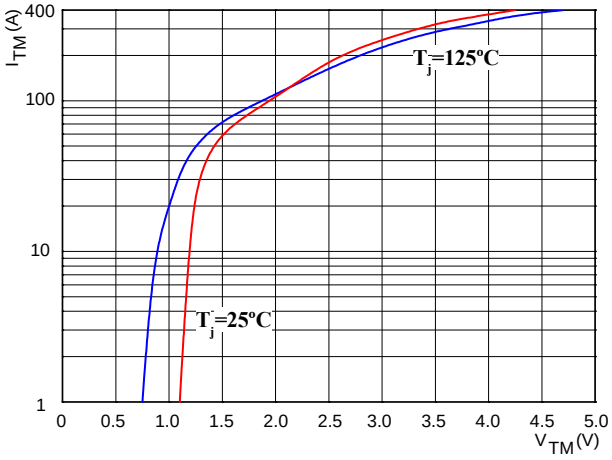


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms

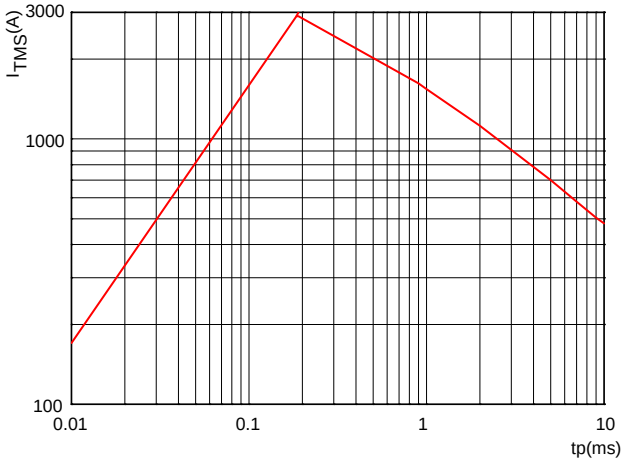
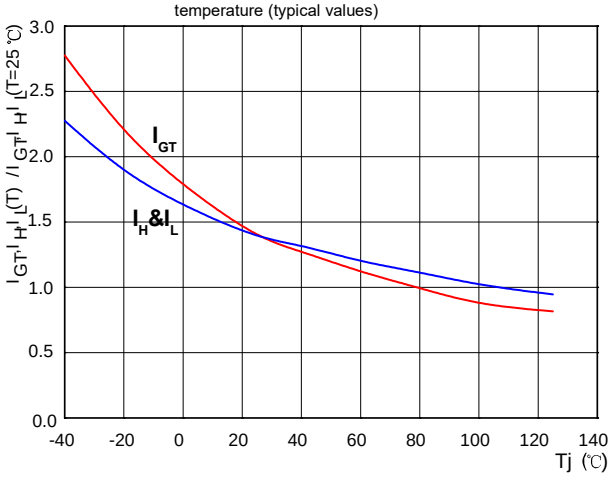


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)

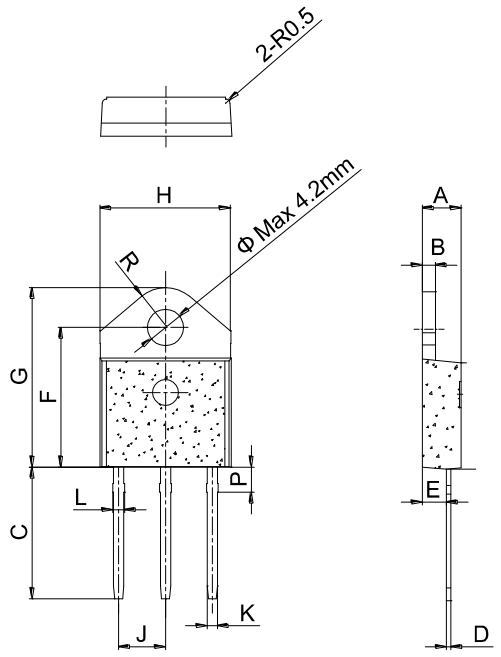


Ordering Information

BT A 41 – 800 B W

- BT: Triacs
- A: A: TO-3P Insulated
- 41: $I_{T(RMS)}$: 40A
- 800: 800:V_{DRM} /V_{RRM}≥800V; 1200:V_{DRM} /V_{RRM}≥1200V; 1600:V_{DRM} /V_{RRM}≥1600V
- B: B:I_{GT1-3} ≤50mA
- W: W: 3Q

TO-3P Insulated Package Information



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	