

40A 3Quadrants TRIACs

Product Summary

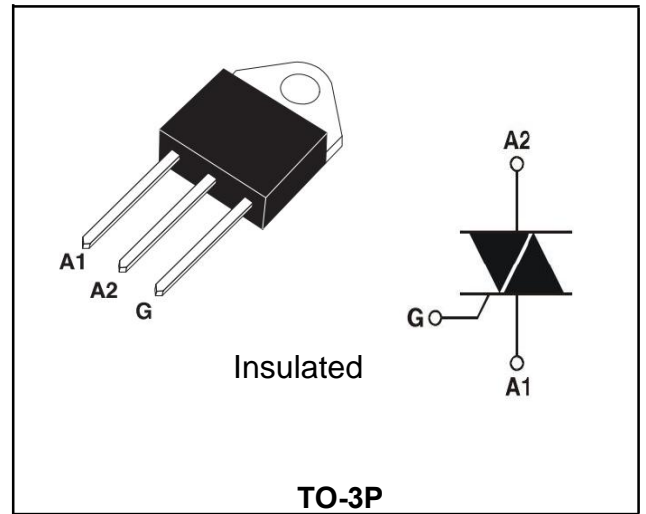
Symbol	Value	Unit
$I_{T(RMS)}$	40	A
$V_{DRM} V_{RRM}$	800/1200/1600	V
V_{TM}	1.55	V

Features

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.



Absolute maximum ratings (Ta=25°C 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 ² S
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di/dt	50	A/ μ s
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_G (AV)$	1	W
Junction Temperature	T_J	-40-+125	°C
Storage Temperature	T_{STG}	-40 ~+150	°C

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

Parameter	Symbol	Test Condition		Value		Unit
Gate trigger current	I_{GT}	$V_D=12V R=33\Omega$	I - II - III	MAX.	50	mA
Gate trigger voltage	V_{GT}			MAX.	1.3	V
Gate non-trigger voltage	V_{GD}	$V_D=V_{DRM} T_j=125^\circ C$	I - II - III	MIN.	0.2	V
latching current	I_L	$I_G=1.2I_{GT}$	I - III	MAX.	80	mA
Holding current	I_H	$I_T=100mA$	II	MAX.	100	mA
Critical-rate of rise of commutation voltage	dV_D/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ C$		MIN.	1000	V/μs

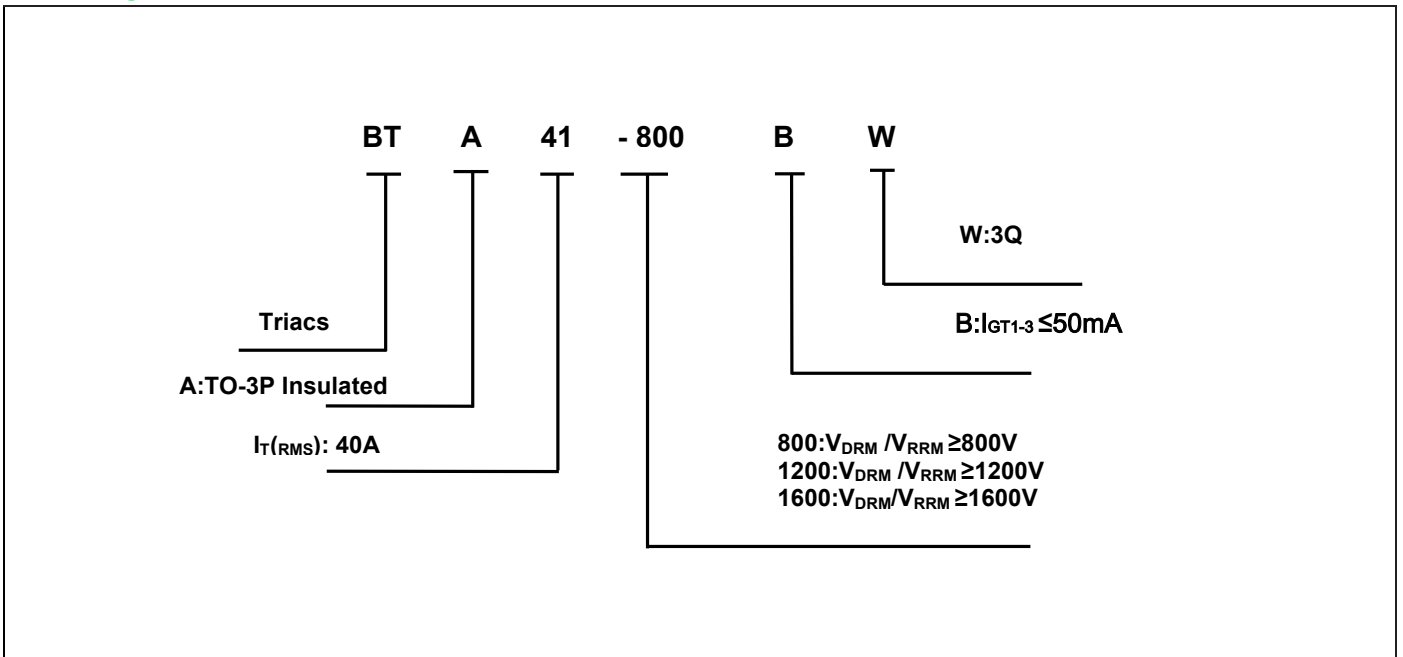
STATIC CHARACTERISTICS

Forward "on" voltage	V_{TM}	$I_{TM}=60A t_p=380\mu s$		MAX.	1.55	V
Repetitive Peak Off-State Current	I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ C$	MAX.	10	μA
Repetitive Peak Reverse Current	I_{RRM}		$T_j=125^\circ C$	MAX.	5	mA

THERMAL RESISTANCES

Thermal resistance	$R_{th(j-c)}$	Junction to case	TYP.	0.9	$^\circ C/W$
	$R_{th(j-a)}$	Junction to ambient	TYP.	50	$^\circ C/W$

Ordering Information



Typical Characteristics

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

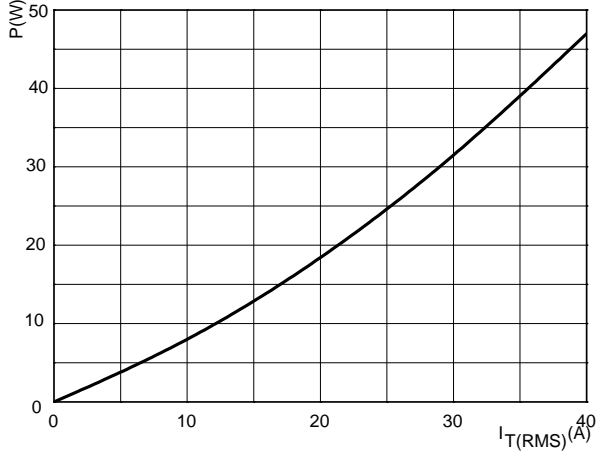


FIG.2: RMS on-state current versus case temperature (full cycle)

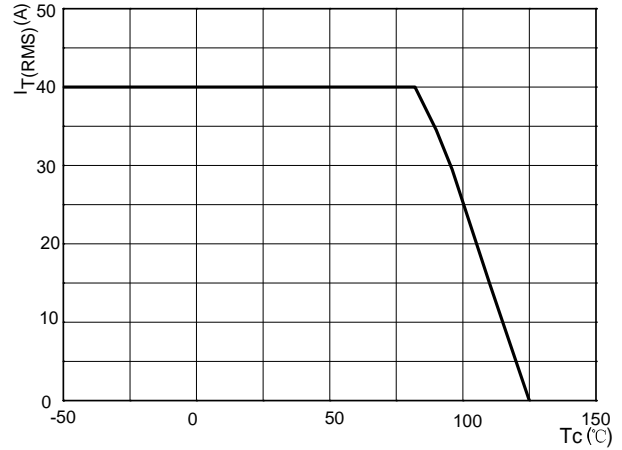


FIG.3: Surge peak on-state current versus number of cycles

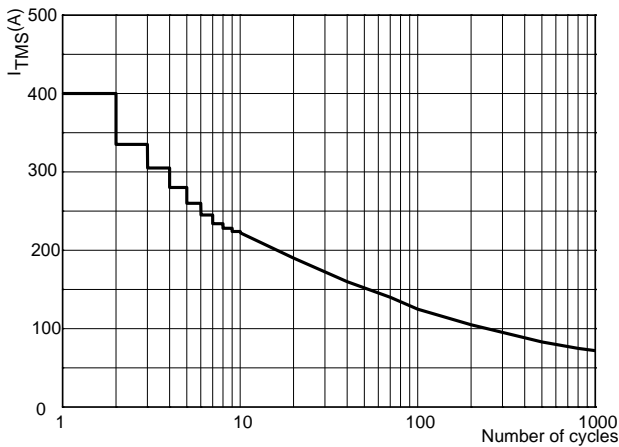


FIG.4: On-state characteristics (maximum values)

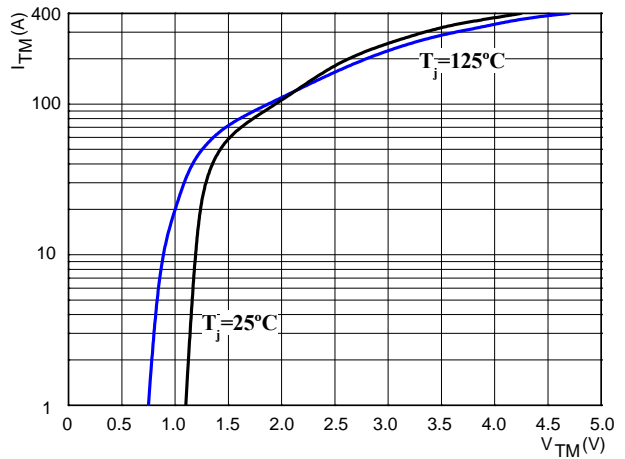


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$

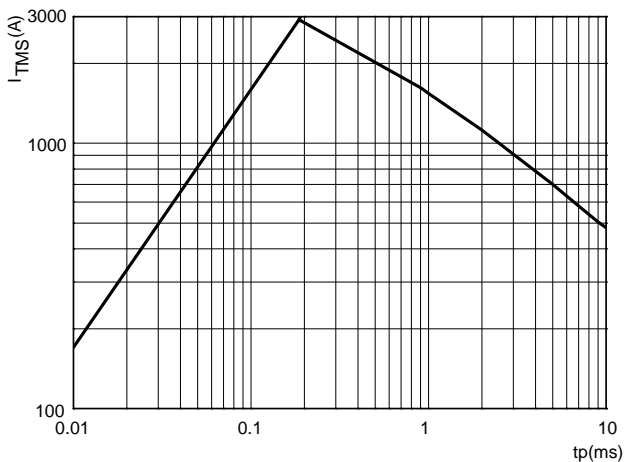
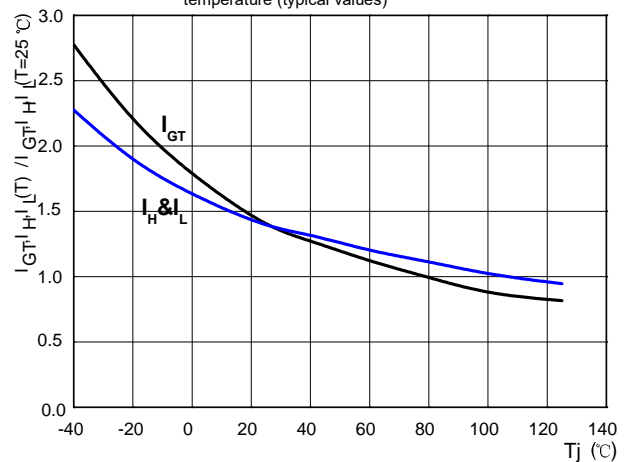
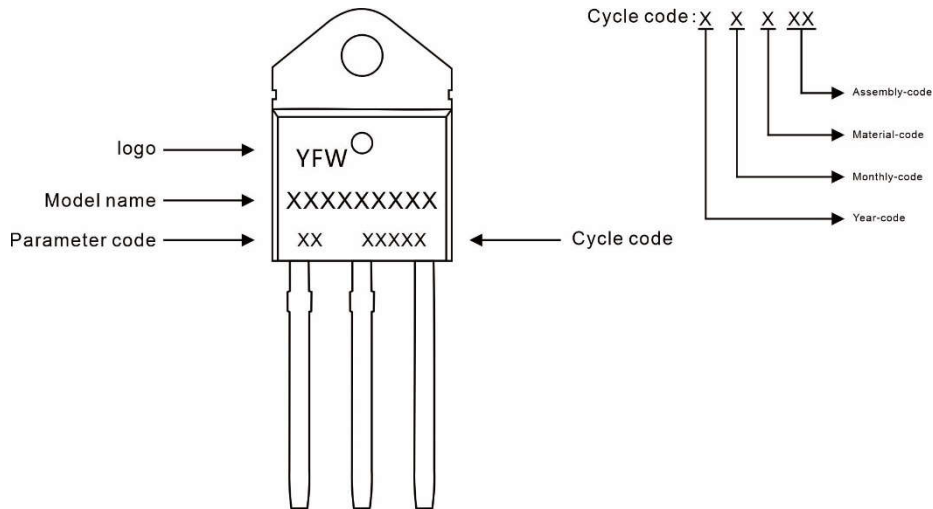


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Marking Diagram



Ordering information

Model name	Package	Base Quantity	Packing Quantity
BTA41-XXXXBW	TO-3P	30pcs/tube	600PCS/Box 2400PCS/Carton

Package Dimensions

TO-3P(Insulated)

Symbol	Dimensions in mm		Dimensions in Inch	
	Min.	Max.	Min.	Max.
A	14.9	15.35	0.587	0.604
B	4.1	4.65	0.161	0.183
C	20.21	20.75	0.796	0.798
D	1.12	1.32	0.044	0.052
E	5.35	5.62	0.211	0.221
H	7.85	8.22	0.309	0.324
K	2.71	2.92	0.107	0.115
L	2.5	3.2	0.098	0.126
L1	15.02	15.55	0.591	0.612
T	4.38	4.65	0.172	0.183
T1	1.42	1.62	0.056	0.064
T2	0.52	0.68	0.021	0.027
ΦR	4.12	4.31	0.162	0.170

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