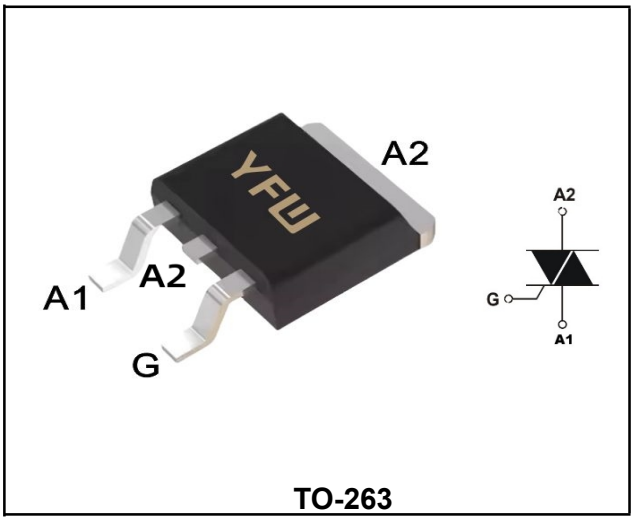
12A 3Quadrants TRIACs

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	12	A
V_{DRM} V_{RRM}	600/800	V
V_{TM}	1.55	V



TO-263

Features

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

Application

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

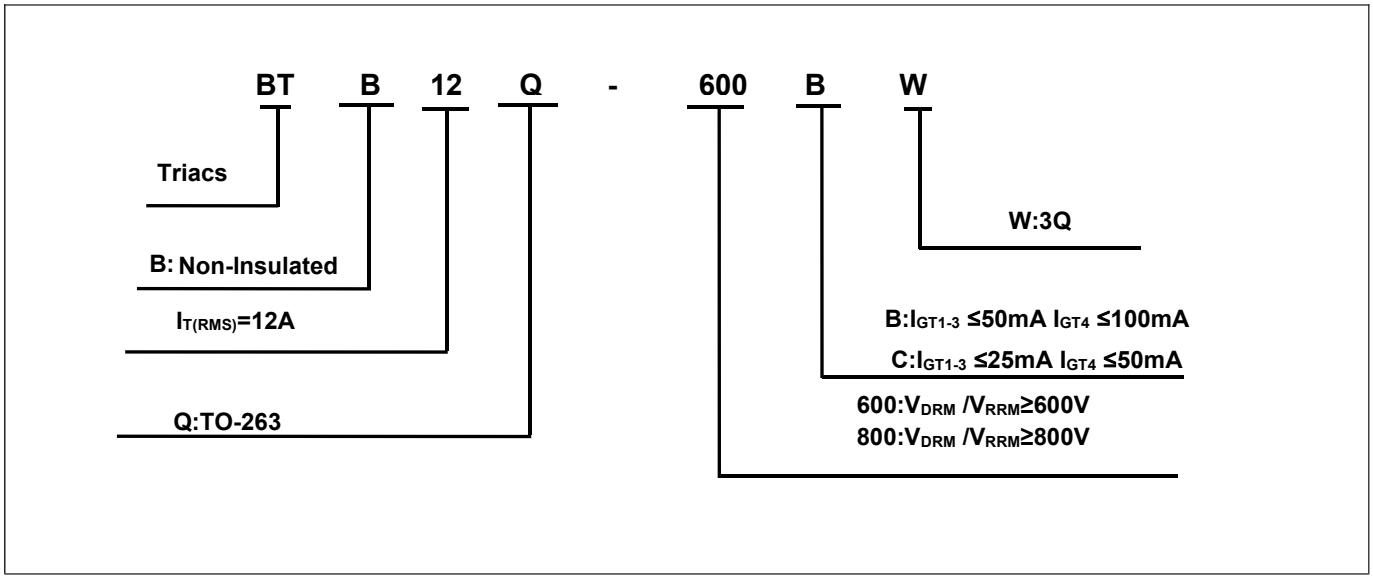
Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value		Unit
Repetitive peak off-state voltage	V_{DRM}	600/800		V
Repetitive peak reverse voltage	V_{RRM}	600/800		V
RMS on-state current	$I_{T(RMS)}$	12		A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	120		A
I^2t value for fusing (tp=10ms)	I^2t	78		A^2s
Critical rate of rise of on-state current (I_G =2 x I_{GT})	dI_T/dt	I - II -III	50	A/us
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 (T_A=25°C, unless otherwise noted)

Parameter	Symbol	Test Condition		Value		Unit
				CW	BW	
Gate trigger current	I_{GT}	V_D=12V R_L=33Ω Tj=25°C	I-II-III	≤25	≤50	mA
Gate trigger voltage	V_{GT}		I-II-III	≤1.3		V
Gate non-trigger voltage	V_{GD}	V_D =V_{DRM} Tj=125°C		≥0.2		V
latching current	I_L	I_G =1.2I_{GT}	I-III	≤40	≤50	mA
			II	≤80	≤100	
Holding current	I_H	I_T =500mA		≤25	≤50	mA
Critical-rate of rise of commutation voltage	dV_D/dt	V_D=2/3V_{DRM} Gate Open Tj=125°C		≥200	≥400	V/us
STATIC CHARACTERISTICS						
Forward "on" voltage	V_{TM}	I_{TM} =17A tp=380us		≤1.55		V
Repetitive Peak Off-State Current	I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	Tj=25°C	≤10		UA
Repetitive Peak Reverse Current	I_{RRM}		Tj=125°C	≤1		mA
THERMAL RESISTANCES						
Thermal resistance	Rth(j-c)	Junction to case(AC)		1.4		°C/W
	Rth(j-a)	Junction to ambient		45		°C/W

Ordering Information



Typical Characteristics

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

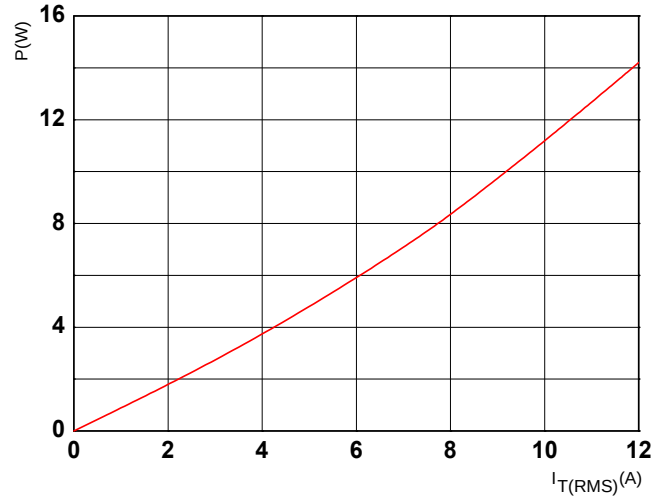


FIG.2: RMS on-state current versus case temperature (full cycle)

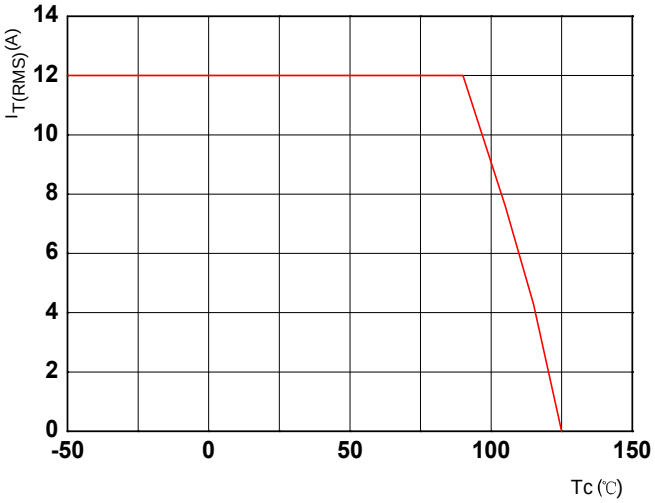


FIG.3: Surge peak on-state current versus number of cycles

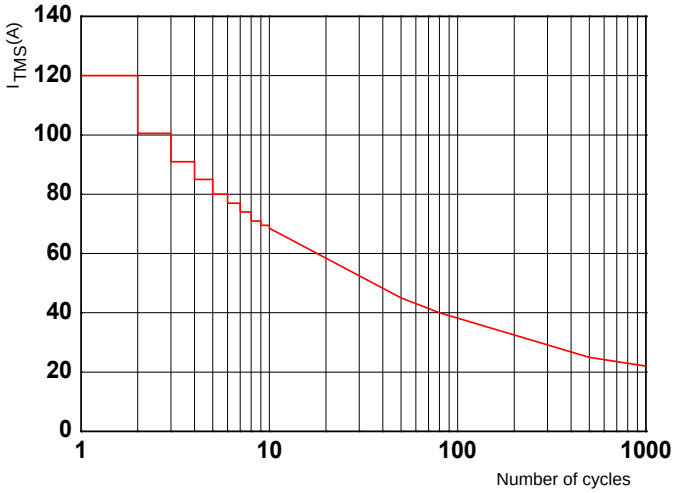


FIG.4: On-state characteristics (maximum values)

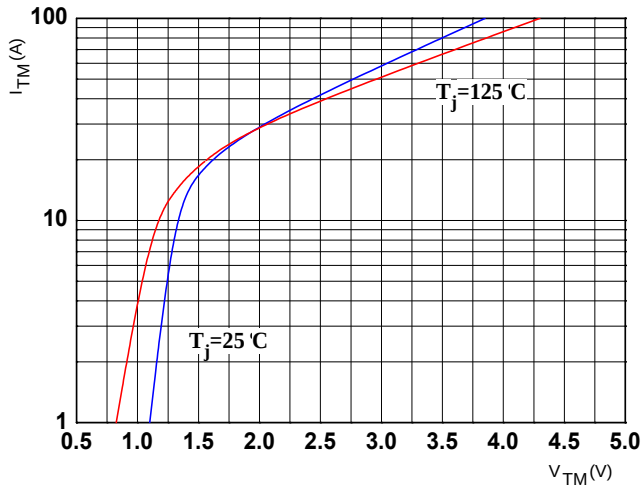


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms

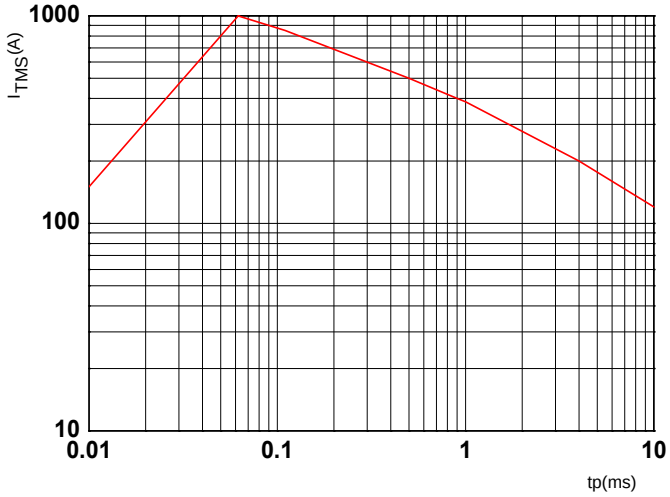
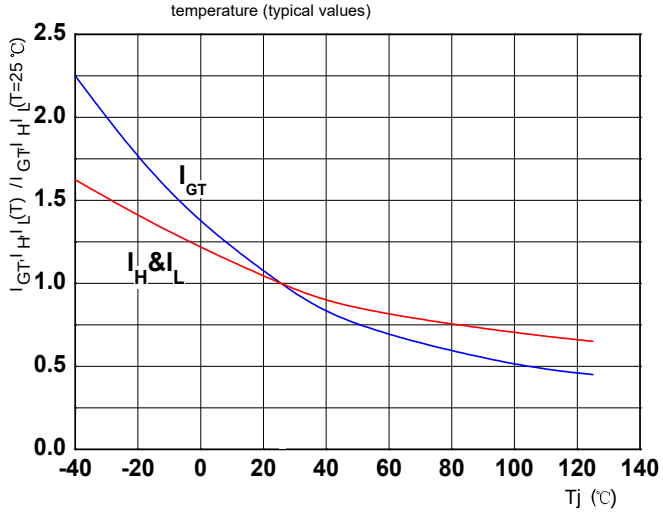
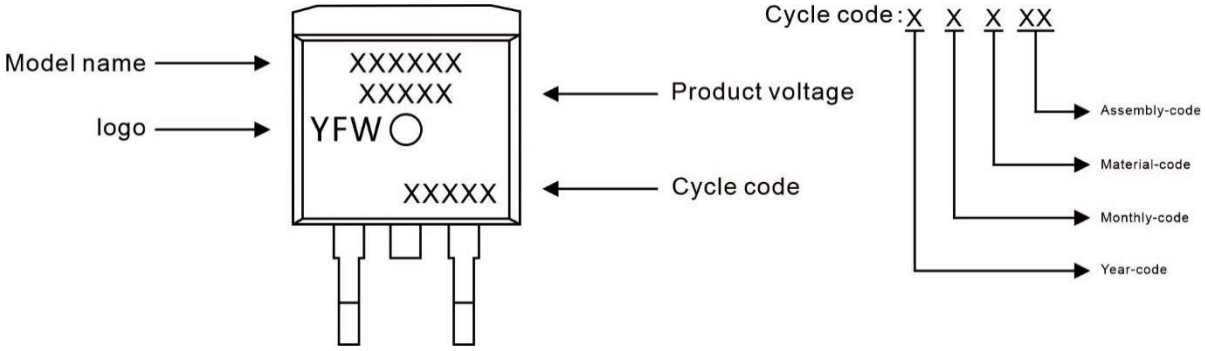


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Marking Diagram

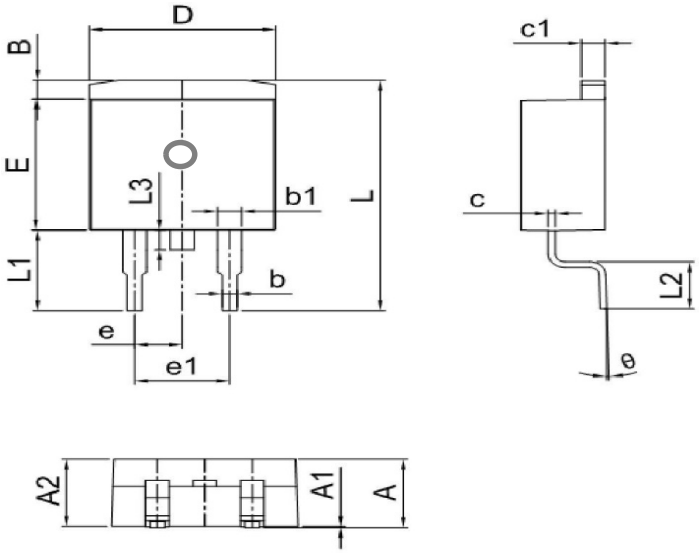


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
BTB12Q	TO-263	0.04oz(1.16g)	800pcs/reel	1600pcs/box 8000pcs/Carton

Package Dimensions

TO-263



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A1	0.00	0.15	0.000	0.006
A2	4.30	4.55	0.169	0.179
B	1.10	1.50	0.043	0.059
b	0.70	0.90	0.028	0.035
b1	1.20	1.50	0.047	0.059
c	0.30	0.60	0.012	0.024
c1	1.17	1.37	0.046	0.054
D	9.90	10.40	0.390	0.409
E	8.50	8.90	0.335	0.350
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
L	15.00	15.30	0.591	0.602
L1	5.20	5.40	0.205	0.213
L2	2.40	2.60	0.094	0.102
L3	1.60	1.80	0.063	0.071

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