

12A 4Quadrants TRIACs

Product Summary

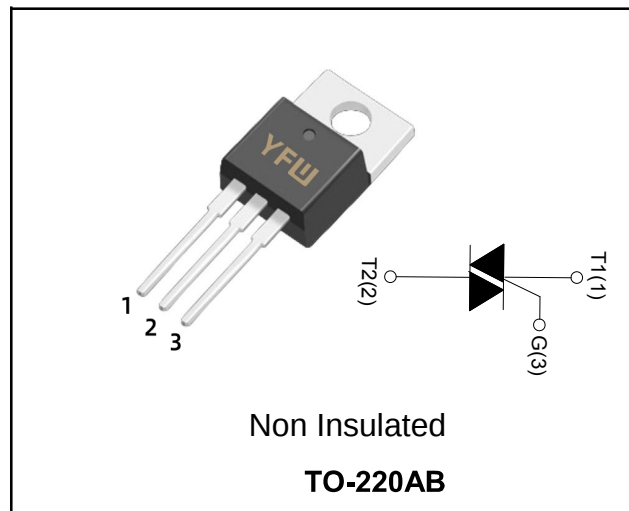
Symbol	Value	Unit
$I_{T(RMS)}$	12	A
$V_{DRM} V_{RRM}$	800	V
V_{TM}	1.50	V

Features

With high ability to withstand the shock loading of large current, Provide high dv/dt rate with strong resistance to electromagnetic interference.

Application

Power charger, T-tools, 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	V
Repetitive peak reverse voltage	V_{RRM}	800	V
RMS on-state current	$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current	I_{TSM}	120	A
I^2t value for fusing (tp=10ms)	I^2t	72	A ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di/dt	I - II - III 50	A/ μ s
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_G (AV)$	10	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
				C	
Gate trigger current	I _{GT}	V _D =12V, R _L =100Ω	I - II -III	25	mA
			IV	50	mA
			ALL	1	V
Gate trigger voltage	V _{GT}				
Non-triggering gate voltage	V _{GD}	V _D =V _{DRM} T _j =125℃ R _L =100 Ω		0.2	V
Holding current	I _H	I _T =500mA		60	mA
Latching current	I _L	I _G =1.2I _{GT}	I -III-IV	60	mA
			II	100	
Critical-rate of rise of commutation voltage	dV/dt	V _D =2/3%V _{DRM} , T _j =125℃		500	V/μs

STATIC CHARACTERISTICS

On-state Voltage	V_{TM}	$I_T=32A$		1.5	V
Repetitive Peak Off-State Current	I_{DRM}	$V_D=V_{DRM}=V_{RRM}$	$T_j=25^\circ C$	5	μA
Repetitive Peak Reverse Current	I_{RRM}		$T_j=125^\circ C$	1	mA

THERMAL RESISTANCES

Thermal resistance	$R_{th(j-c)}$	Junction to case	TYP.	1.25	$^\circ C/W$
	$R_{th(j-a)}$	Junction to ambient	TYP.	60	$^\circ C/W$

Ordering Information

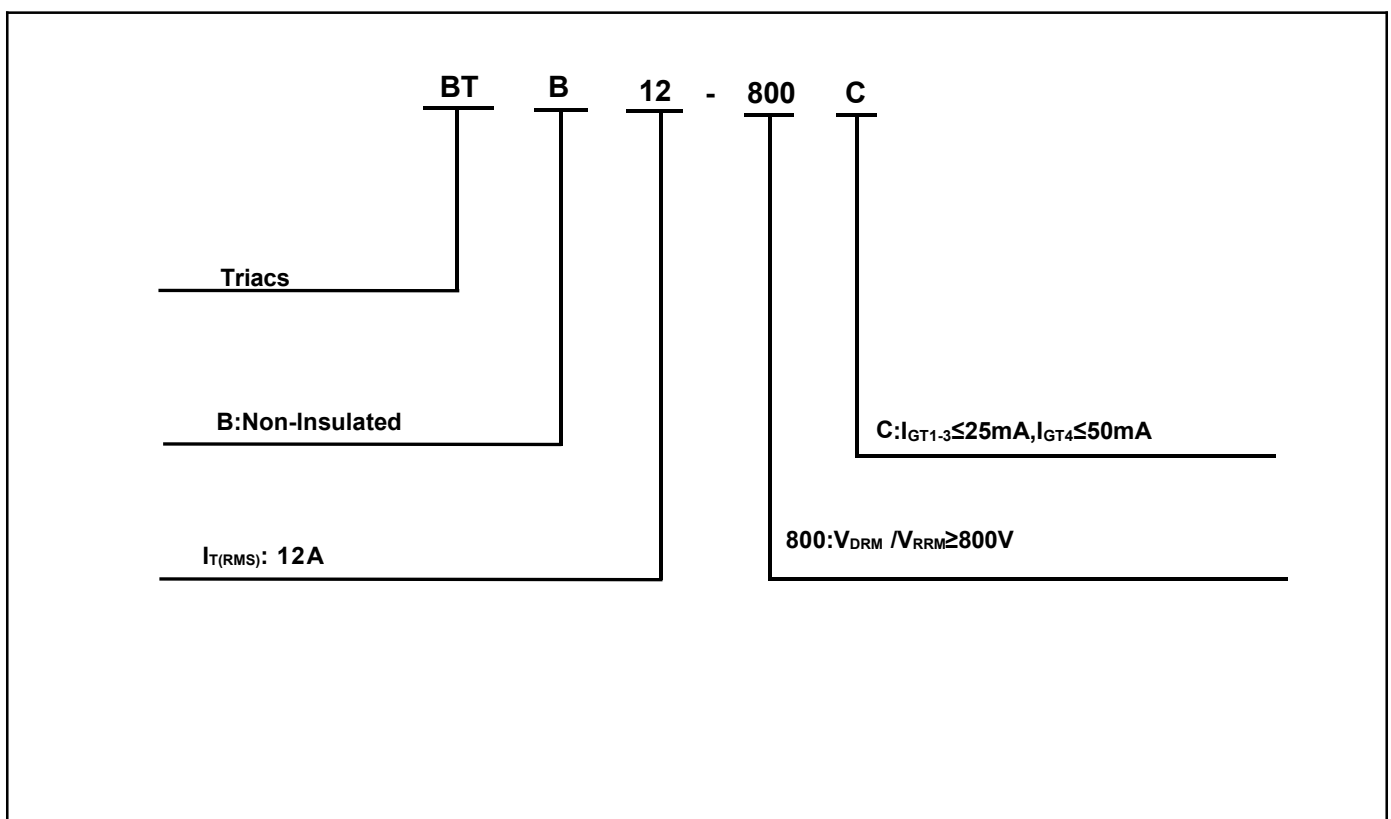


FIG.1 Maximum power dissipation versus RMS on-state current

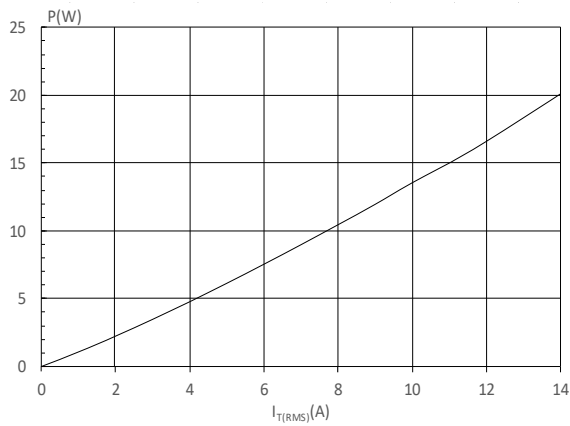


FIG.3: Surge peak on-state current versus number of cycles

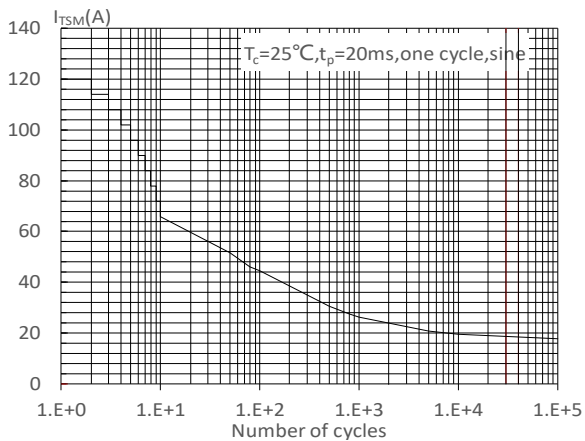


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t (I - II : $dl/dt < 80A/\mu s$; III-IV : $dl/dt < 40A/\mu s$)

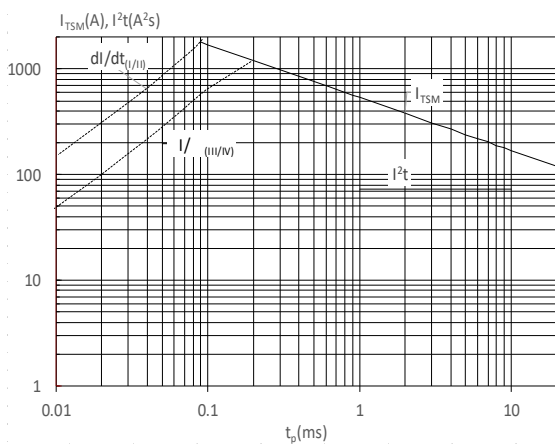


FIG.2: RMS on-state current versus case temperature

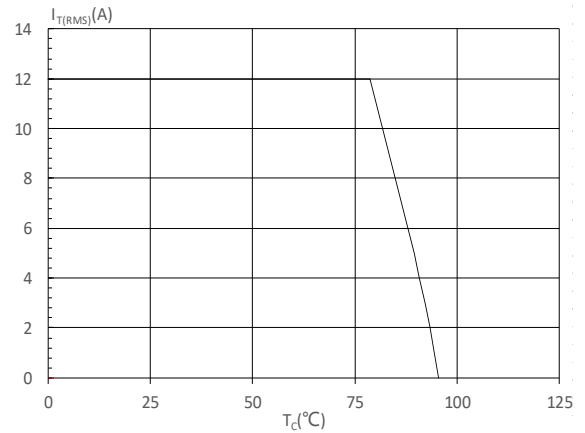


FIG.4: On-state characteristics

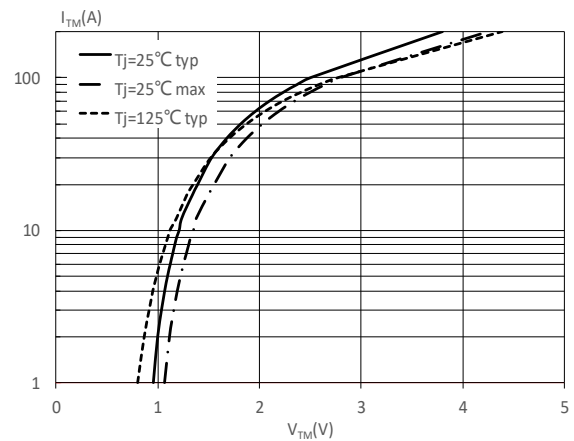
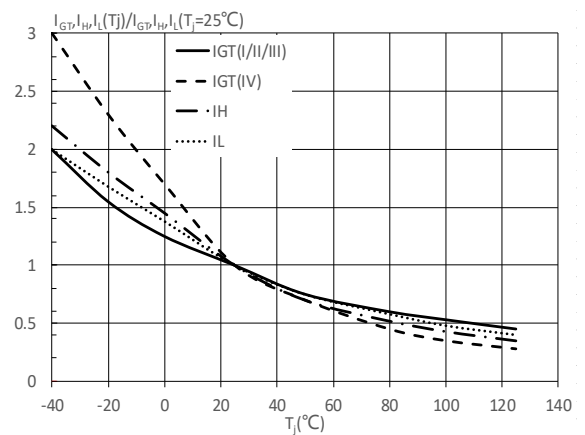
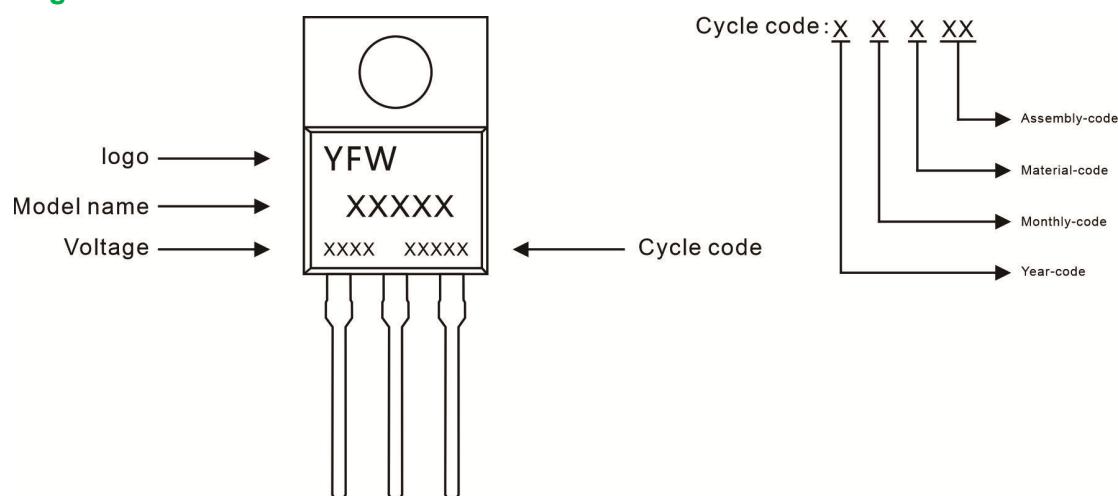


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
BTB12	TO-220AB	0.07oz(1.96g)	50pcs/tube	1000PCS/Box 5000PCS/Carton

Package Dimensions

TO-220AB

Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A1	2.52	2.82	0.099	0.111
b	0.71	0.91	0.028	0.036
b1	1.17	1.37	0.046	0.054
c	0.30	0.50	0.012	0.020
c1	1.17	1.37	0.046	0.054
D	9.90	10.20	0.390	0.402
E	8.50	8.90	0.335	0.350
E1	12.00	12.50	0.472	0.492
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
F	2.60	2.80	0.102	0.110
L	13.20	13.80	0.520	0.543
L1	3.80	4.20	0.150	0.165
Φ	3.60	3.96	0.142	0.156

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