

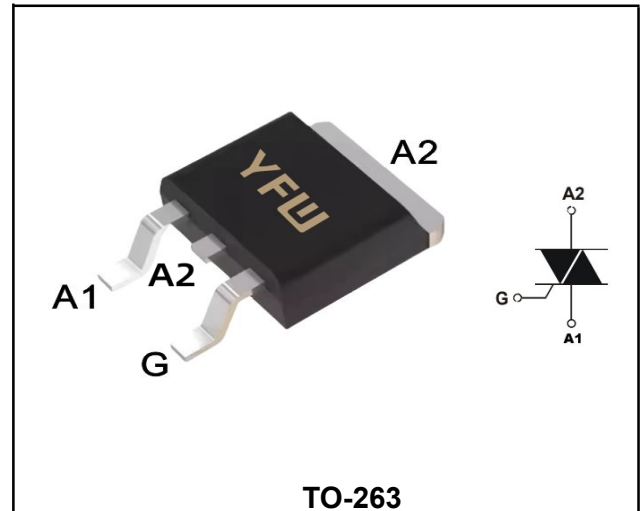
20A 3Quadrants TRIACs

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	20	A
$V_{DRM} V_{RRM}$	800	V
V_{TM}	1.55	V

DESCRIPTION:

The BTB20Q-800BW triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. BTB20Q-800BW snubberless triac is especially recommended for use on inductive loads. Package TO-263 is RoHS compliant.



Absolute Maximum Ratings

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($T_c \leq 90^\circ\text{C}$)	$I_{T(RMS)}$	20	A
Non repetitive surge peak on-state current(full cycle , $t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	200	A
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	200	A^2S
Critical rate of rise of on-state current ($T_j=125^\circ\text{C}$)	di_T/dt	50	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Operating junction temperature range	T_J	-40~+125	$^\circ\text{C}$
Storage junction temperature range	T_{STG}	-40 ~+150	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition		Value			Unit
				B			
				min	typ	max	
Gate trigger current	I _{GT}	V _D =12V R _L =100Ω	I - II -III	-	-	50	mA
Gate trigger voltage	V _{GT}		I - II -III	-	-	1	V
Non-triggering gate voltage	V _{GD}	V _D =V _{DRM} , R _L =100Ω T _J =125°C	I - II -III	0.2	-	-	V
Latching current	I _L	I _G =1.2I _{GT}	I -III	-	-	60	mA
			II	-	-	100	mA
Holding current	I _H	I _T =500mA		-	-	60	mA
Critical-rate of rise of commutation voltage	dV _D /dt	V _D =2/3 V _{DRM} T _J =125°C		500	-	-	V/μs

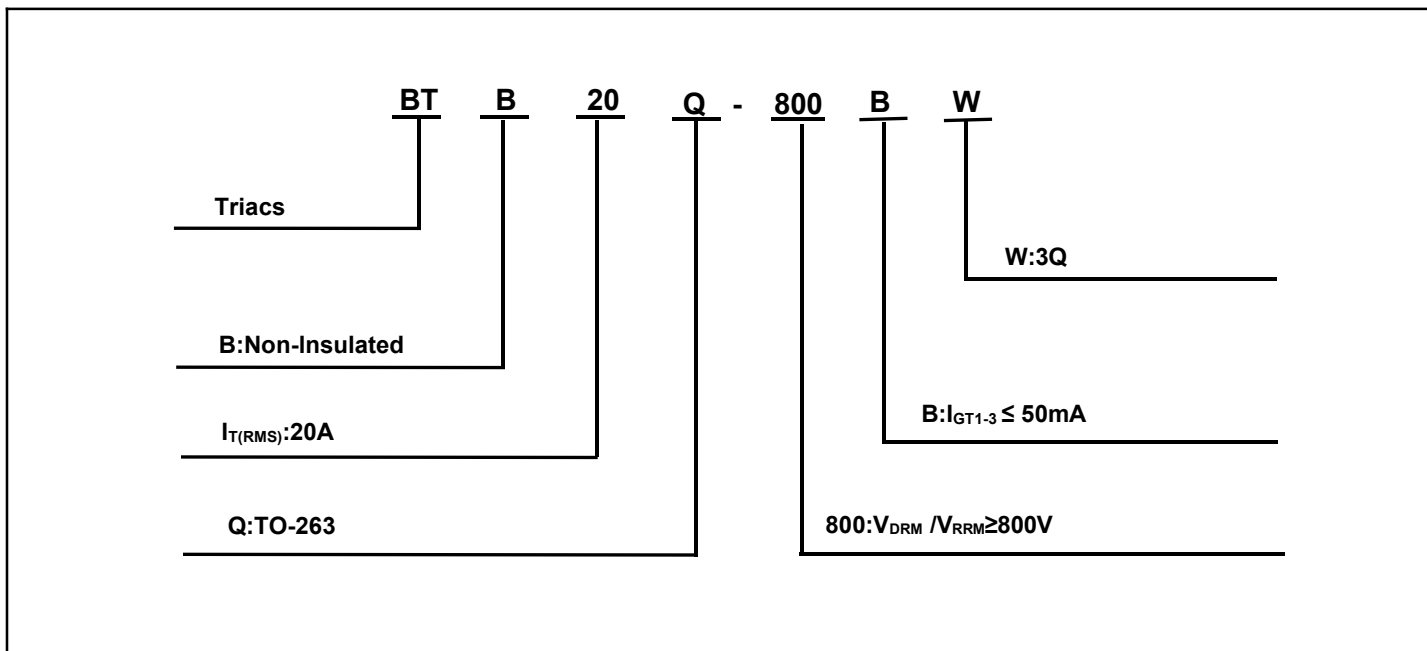
STATIC CHARACTERISTICS

On-state Voltage	V _{TM}	I _{TM} =28A tp=380μs	T _J =25°C	-	-	1.55	V
Repetitive Peak Off-State Current	I _{DRM}	V _D =V _{DRM} V _R = V _{RRM}	T _J =25°C	-	-	5	μA
Repetitive Peak Reverse Current	I _{RRM}		T _J =125°C	-	-	1	mA

THERMAL RESISTANCES

lthermal resistance	R _{th} (j-c)	Junction to case(AC)	TYP.	1.25	°C/W
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Ordering Information



Typical Characteristics

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

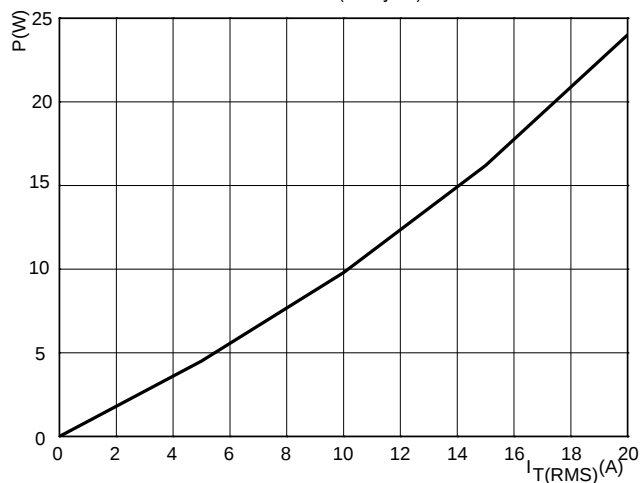


FIG.2: RMS on-state current versus case temperature (full cycle)

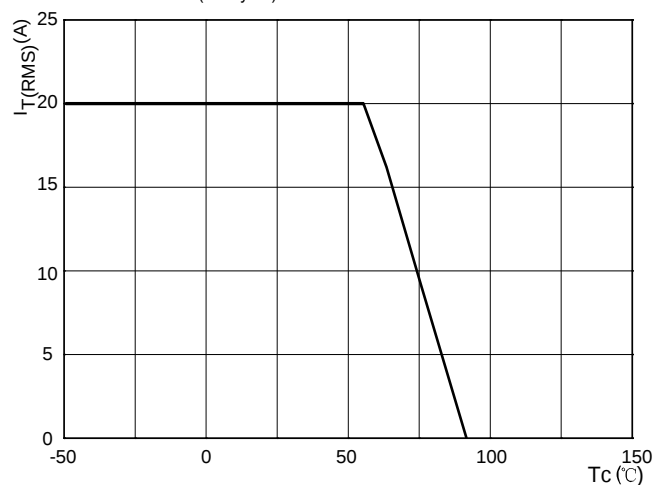


FIG.3: Surge peak on-state current versus number of cycles

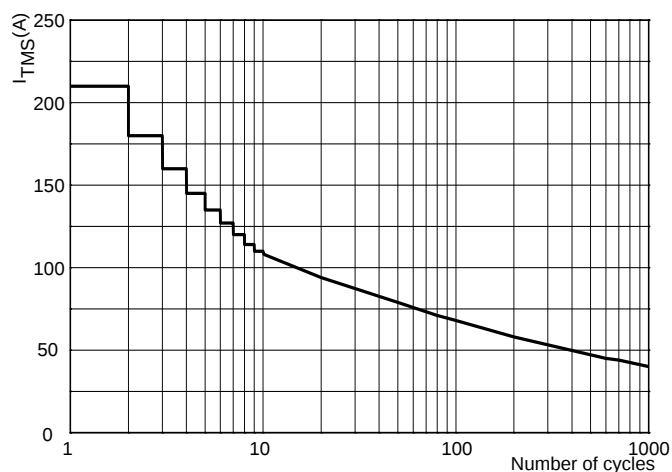


FIG.4: On-state characteristics (maximum values)

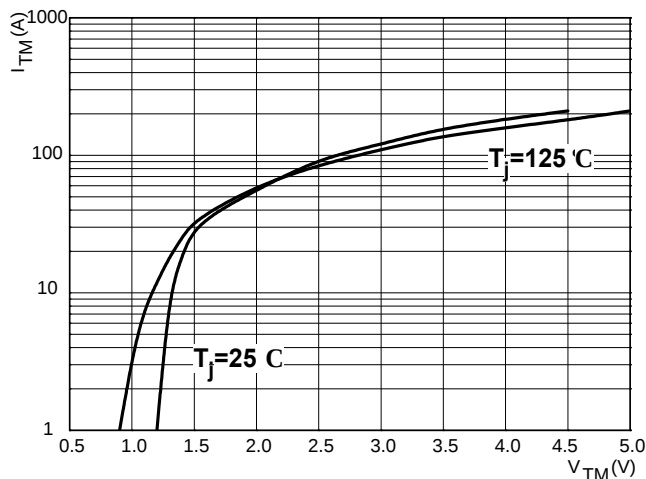


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$

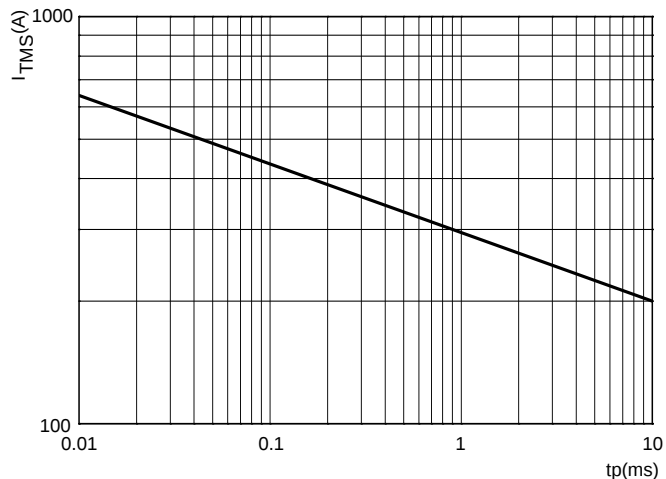
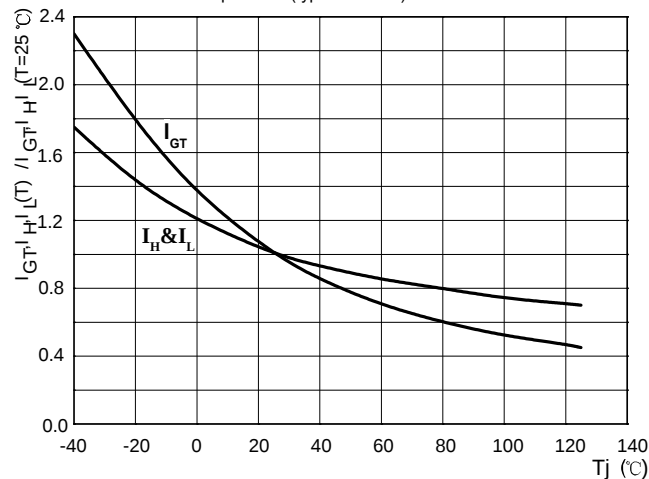
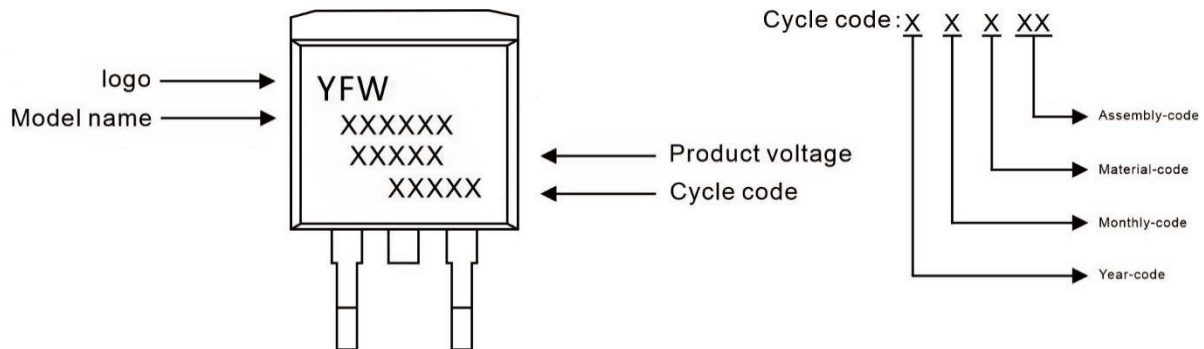


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
BTB20Q	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	10.20	0.390	0.402
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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