

20A 3Quadrants TRIACs

Product Summary

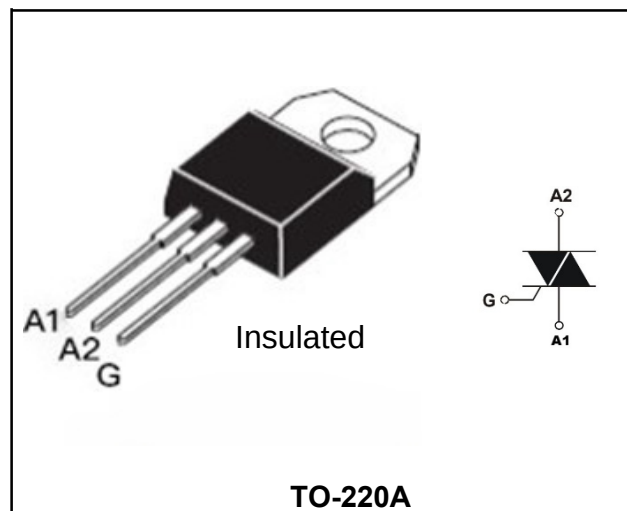
Symbol	Value	Unit
$I_{T(AV)}$	20	A
$V_{DRM} V_{RRM}$	600/800	V
V_{TM}	1.55	V

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 staterelay, AC Motor speed regulation and so on.



Absolute maximum ratings ($T_a=25^{\circ}\text{C}$ 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	$I_T(RMS)$	20		A
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$)	I_{TSM}	210		A
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	200		A^2s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	dI/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	$-40 \sim +125$		$^{\circ}\text{C}$
Storage Temperature	T_{STG}	$-40 \sim +150$		$^{\circ}\text{C}$

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

Parameter	Symbol	Test Condition	Value		Unit
			CW	BW	
Gate trigger current	I_{GT}	$V_D=12V$, $R_L=33\Omega$, $T_j=25^\circ C$, Fig.6	≤ 35	≤ 50	mA
Gate trigger voltage	V_{GT}		≤ 1.3		V
Gate non-trigger voltage	V_{GD}	$V_D=V_{DRM}$, $T_j=125^\circ C$	≥ 0.2		V
Holding current	I_H	$I_T=500mA$, Fig. 6	≤ 50	≤ 75	mA
latching current	I_L	$I_G=1.2I_{GT}$, Fig. 6	≤ 50	≤ 70	mA
			≤ 80	≤ 90	mA
Critical-rate of rise of commutation voltage	dV_D/dt	$V_D=2/3V_{DRM}$, $T_j=125^\circ C$	≥ 500	≥ 1000	V/us

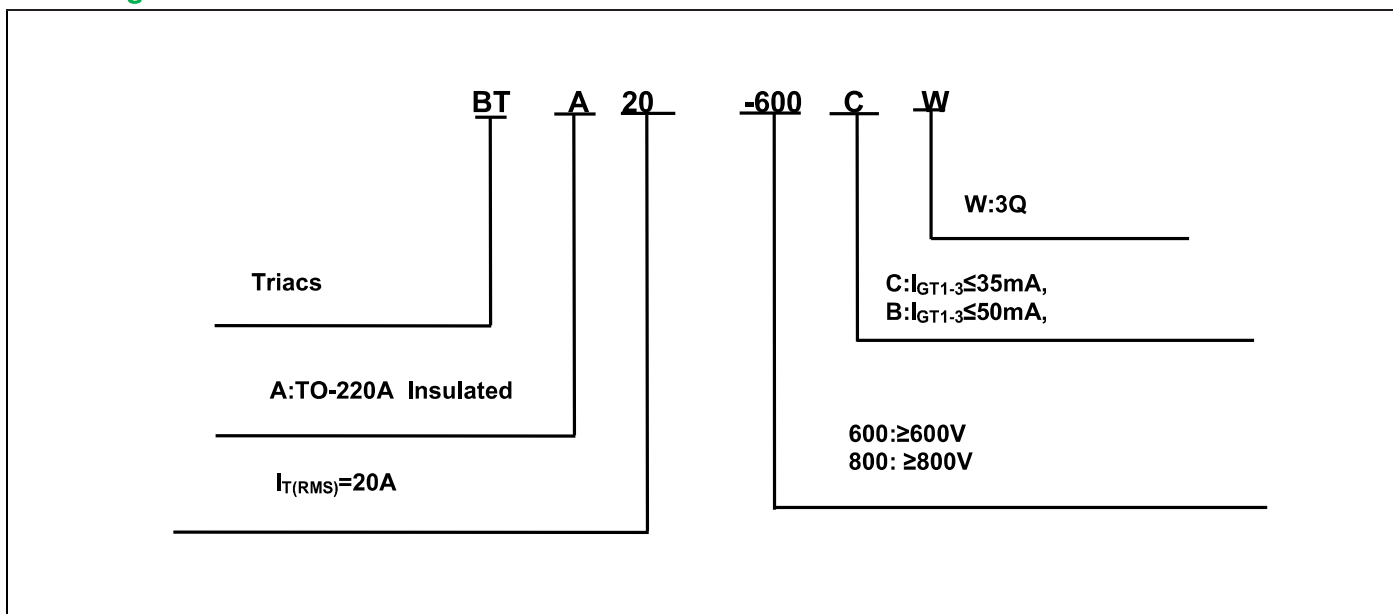
STATIC CHARACTERISTICS

Forward "on" voltage	V_{TM}	I _{TM} =28A,tp=380us, Fig.4		≤1.55		V
Repetitive Peak Off-State Current	I_{DRM}	V _D =V _{DRM} V _R =V _{RRM}	T _J =25°C	≤5	≤5	uA
Repetitive Peak Reverse Current	I_{RRM}		T _J =125°C	≤1	≤1	mA

THERMAL RESISTANCES

Thermal resistance	$R_{th(j-c)}$	Junction to case	TYP.	2.1	°C/W
	$R_{th(j-a)}$	Junction to ambient	TYP.	60	°C/W

Ordering Information



Typical Characteristics

FIG1 Maximum power dissipation versus RMS on-state current

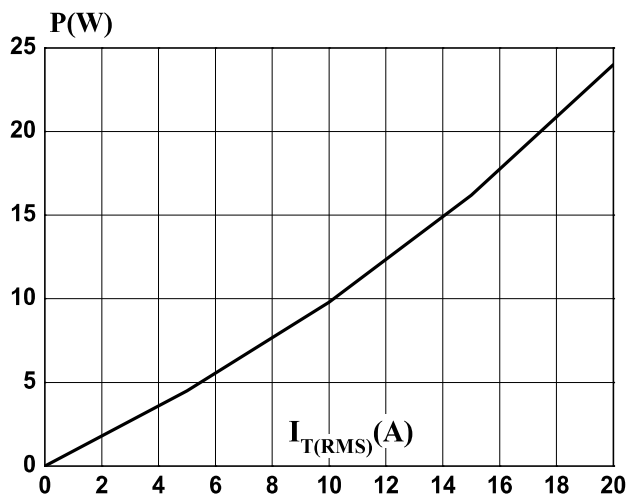


FIG2 RMS on-state current versus case temperature

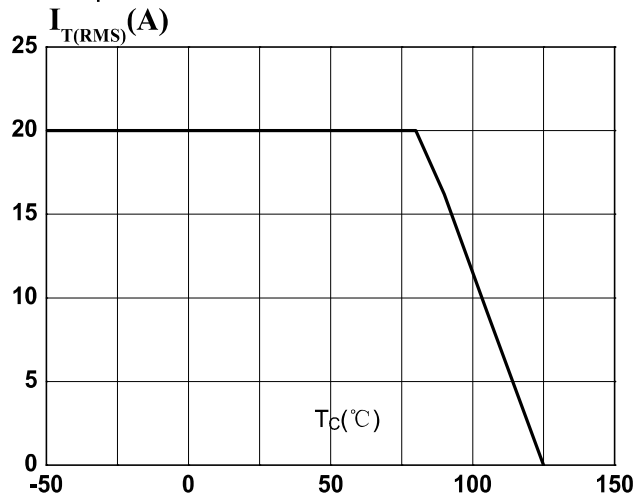


FIG3 Surge peak on-state current versus number of cycles

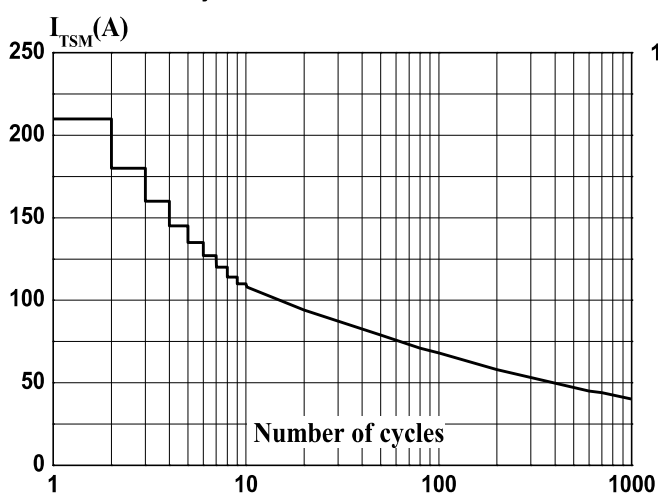


FIG4 On-state characteristics (maximum values)

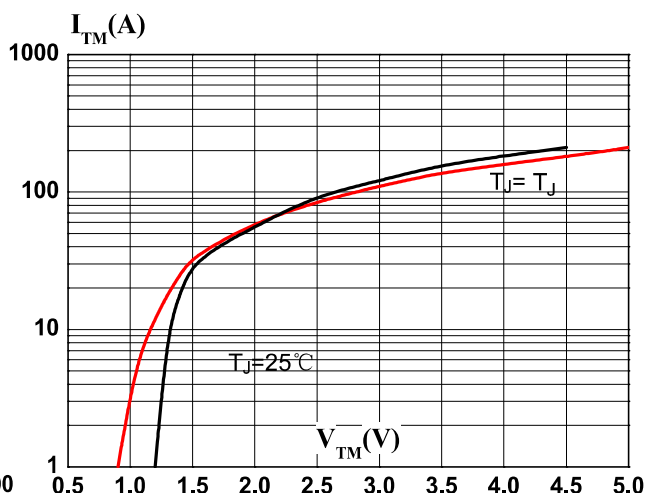


FIG5 Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 100\text{A}/\mu\text{s}$)

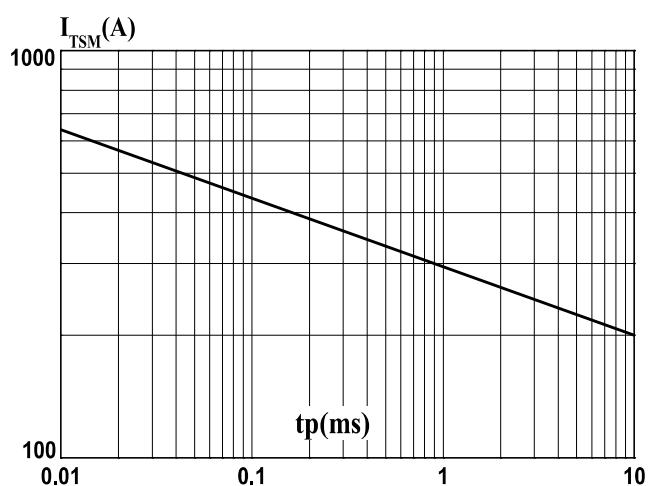
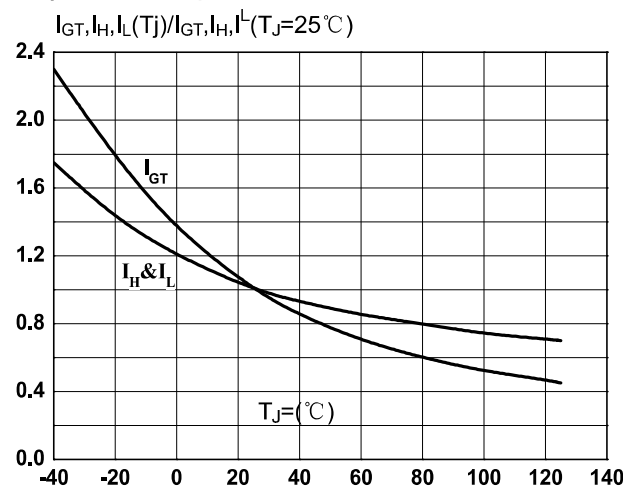
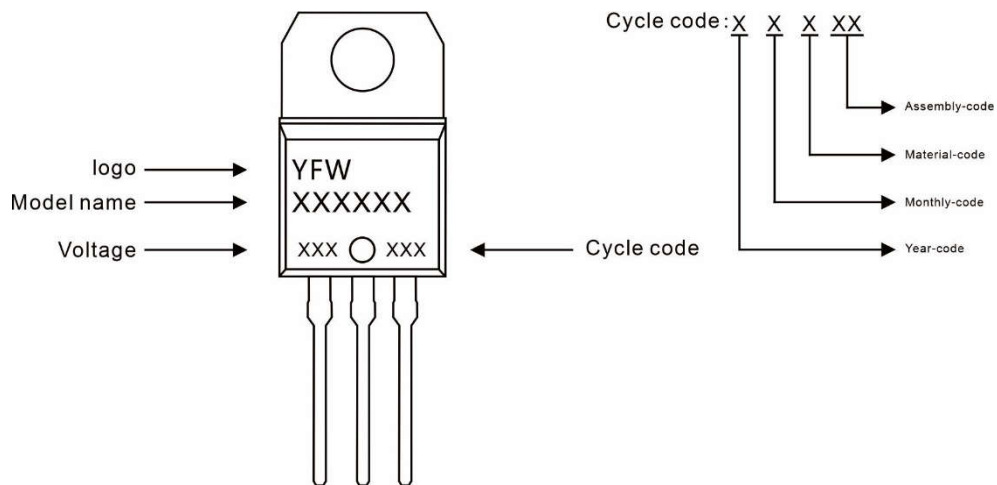


FIG6 Relative variations of gate trigger current, holding current and latching current versus junction temperature



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
BTA20	TO-220A	0.07oz(1.96g)	50pcs/tube	1000PCS/Box 5000PCS/Carton

Package Dimensions

TO-220A(Insulated)

(Insulated)		Millimeter		Inches	
		Min.	Max.	Min.	Max.
	Symbol				
	A	9.80	10.40	0.386	0.409
	B	2.65	3.10	0.104	0.122
	C	14.80	16.10	0.583	0.634
	D	0.70	0.92	0.028	0.036
	D1	1.18	1.42	0.047	0.056
	E	2.40	2.70	0.095	0.106
	L	2.80	4.20	0.11	0.17
	L1	13.05	13.60	0.514	0.535
	H	5.85	6.82	0.23	0.27
	K	2.35	2.75	0.093	0.108
	T	4.38	4.61	0.172	0.181
	T1	1.15	1.36	0.045	0.054
	T2	0.35	0.65	0.014	0.026
	ΦR	3.75	3.95	0.148	0.156

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