

12A 4Quadrants TRIACs

Product Summary

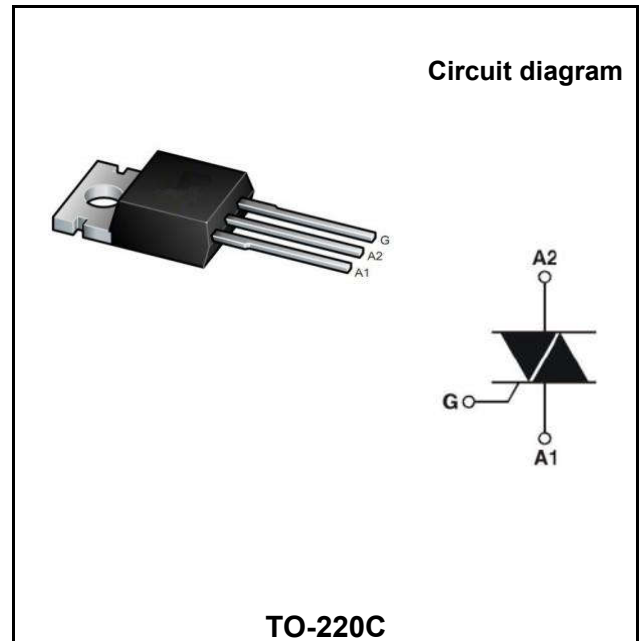
Symbol	Value	Unit
$I_{T(AV)}$	12	A
$V_{DRM} V_{RRM}$	600/800	V
V_{TM}	1.55	V

Features

With high ability to withstand the shock loading of arge 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.



Order Information

Part Number	Package	Marking	packing	packing Quantity
BT138	TO-220C	BT138 XXXX	Box	1000PCS/Box

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}	95	A
I^2t value for fusing (tp=10ms)	I^2t	45	A ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di/dt	I - II -III	50
		IV	10
Peak gate current	I_{GM}	2	A
Gate peak power	I_{GM}	5	W
Average gate power dissipation	$P_G(AV)$	0.5	W
Junction Temperature	T_J	-40~+150	°C
Storage Temperature	T_{STG}	-40 ~+125	°C

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

Parameter	Symbol	Test Condition	Value			Unit	
			D	E	F		
Gate trigger current	I _{GT}	V _D =12V, I _T =0.1A, T _j =25°C, Fig.6	I - II -III	≤5	≤10	≤25	mA
			IV	≤10	≤25	≤70	
Gate trigger voltage	V _{GT}		I - II -III-IV	≤1.3			V
Gate non-trigger voltage	V _{GD}	V _D =V _{DRM} , T _j =125°C	≥0.2			V	
Holding current	I _H	V _D =12V, I _{GT} =0.1A, T _j =25°C, Fig.6	I - II -III-IV	≤10	≤30	≤30	mA
Latching current	I _L		I - III-IV	≤15	≤30	≤40	mA
			II	≤20	≤40	≤60	mA
Critical-rate of rise of commutation voltage	dV _D /dt	V _D =2/3V _{DRM} , T _j =125°C	≥10	≥20	≥50	V/us	

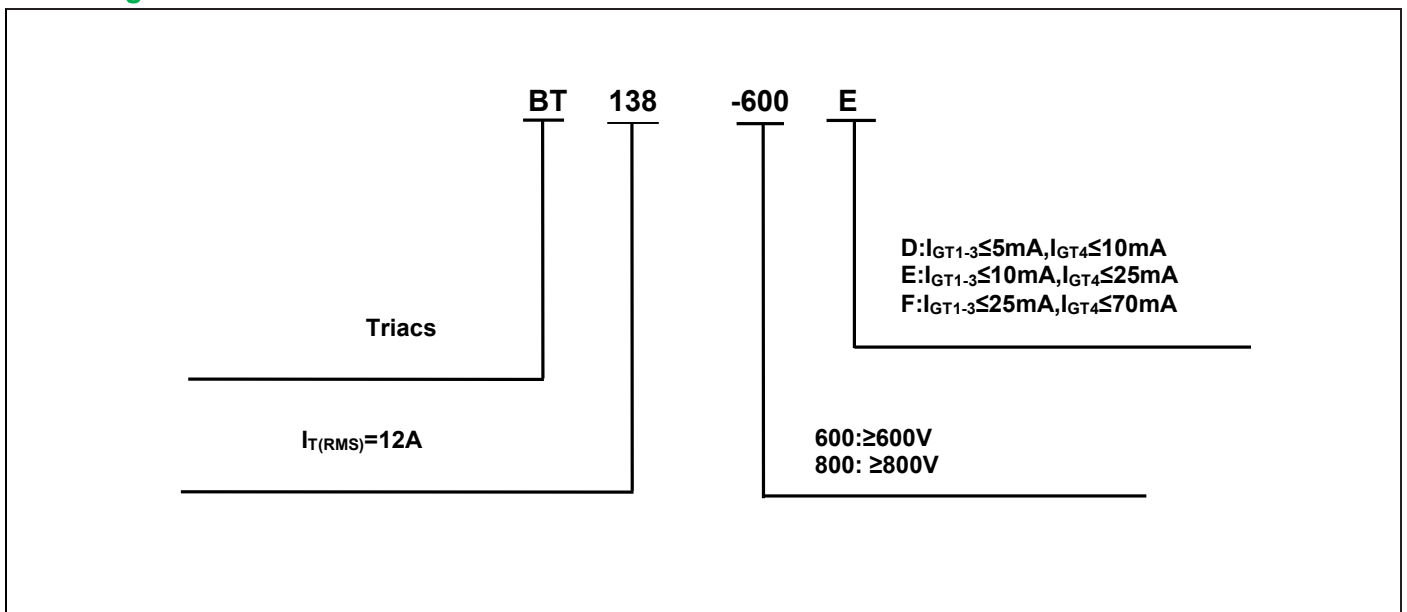
STATIC CHARACTERISTICS

Forward "on" voltage	V _{TM}	I _{TM} =15A, 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	≤0.5		≤0.5	mA

THERMAL RESISTANCES

Thermal resistance	R _{th(j-c)}	Junction to case	TYP.	1.4	°C/W
	R _{th(j-a)}	Junction to ambient	TYP.	60	°C/W

Ordering Information



Typical Characteristics

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

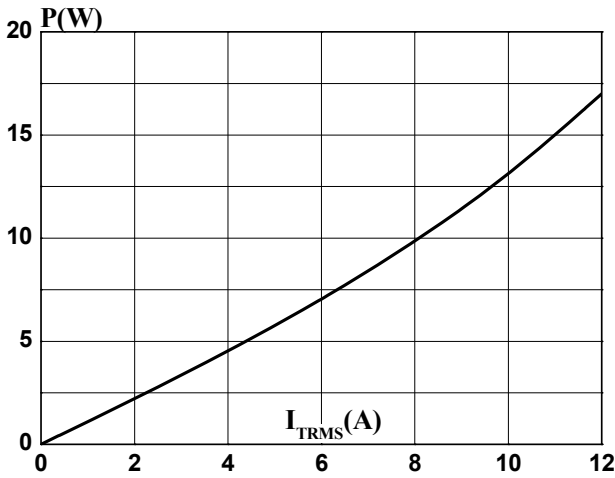


FIG.2: RMS on-state current versus case temperature (full cycle)

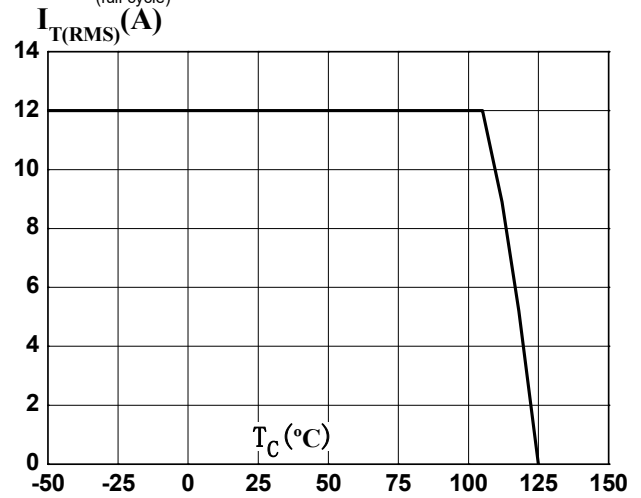


FIG.3: Surge peak on-state current versus number of cycles

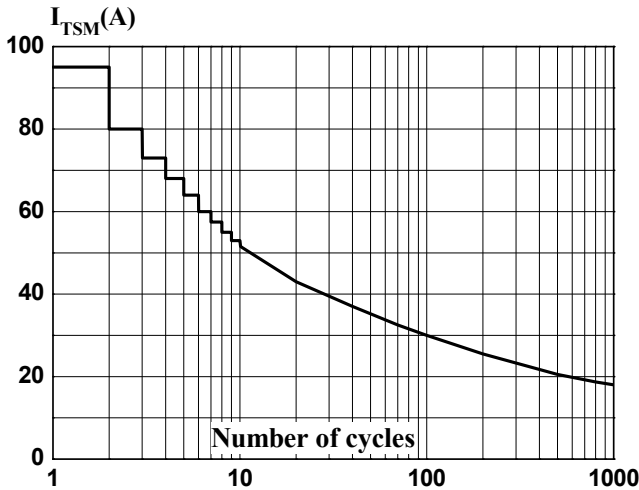


FIG.4: On-state characteristics (maximum values)

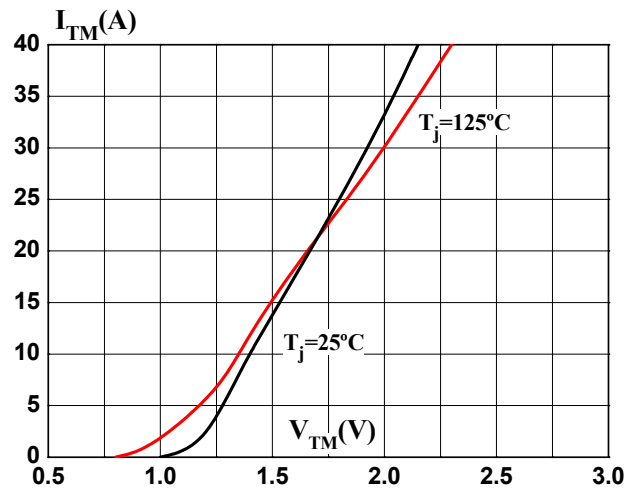


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$

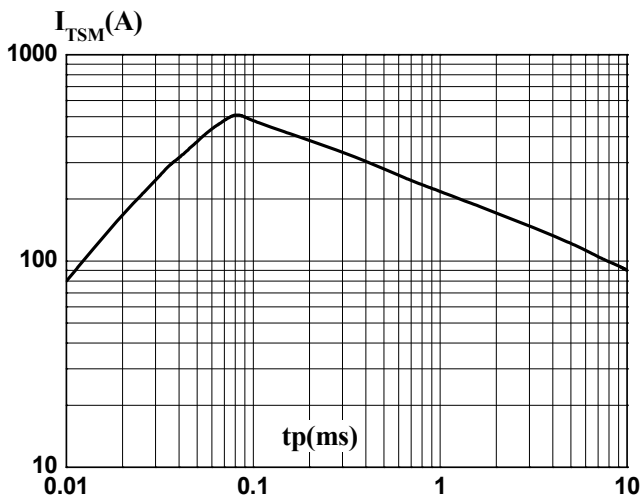
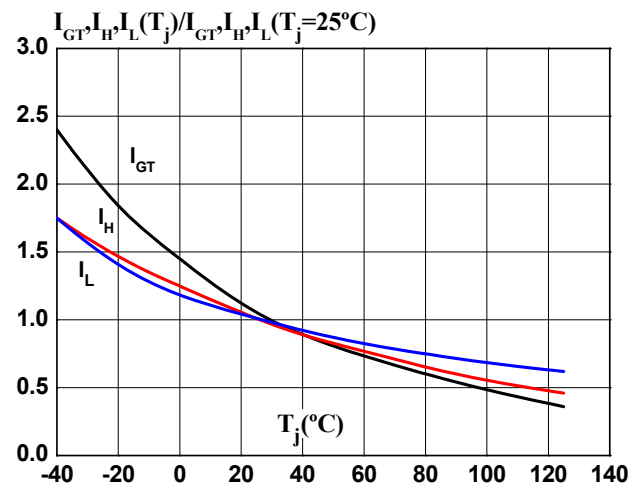
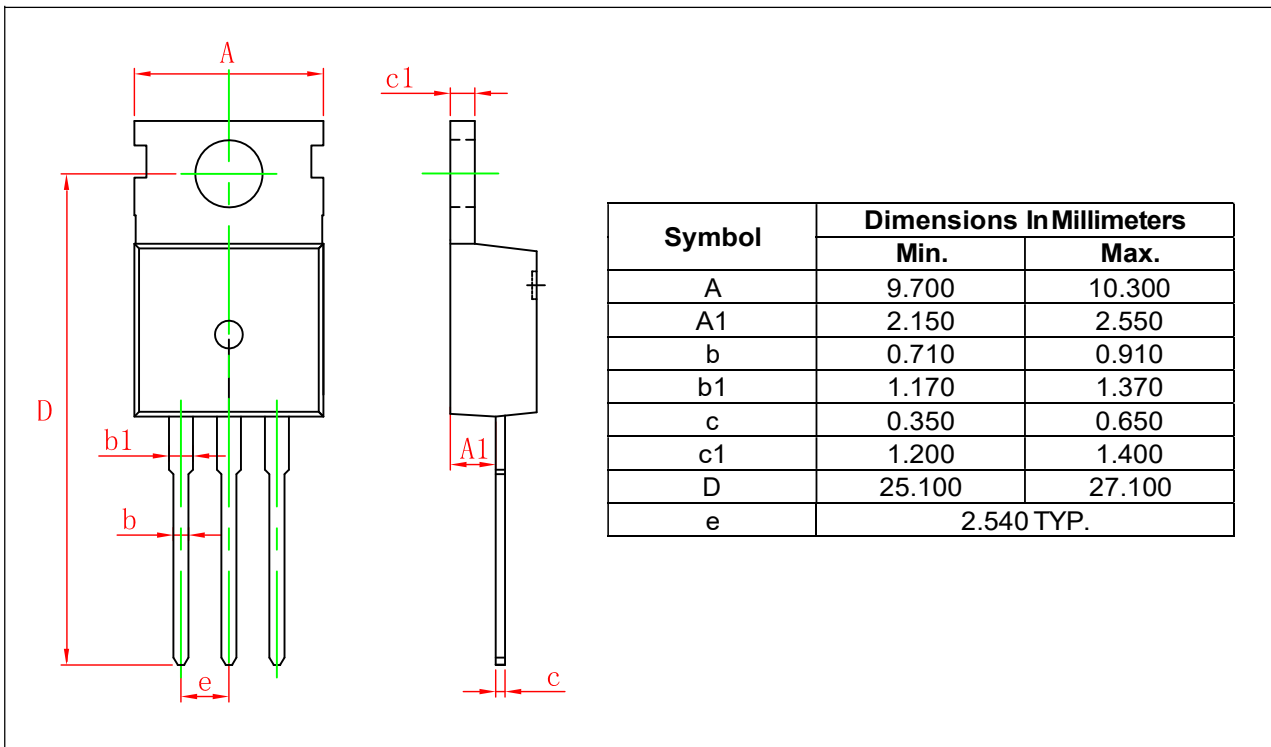


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



TO-220C



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[>>YFW\(佑风微\)](#)