

12A Standard SCRs

Product Summary

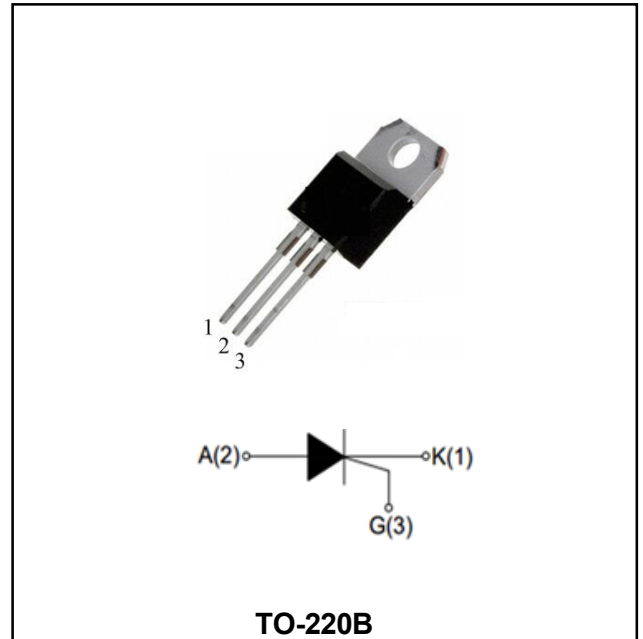
Symbol	Value	Unit
$I_{T(RMS)}$	12	A
$V_{DRM} V_{RRM}$	600/800/1000	V
V_{TM}	1.6	V

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.



Order Information

Part Number	Package	Marking	packing	Delivery Quantity
BT151	TO-220B	BT151-600 XXXX	BOX	1000PCS/BOX
BT151	TO-220B	BT151-800 XXXX	BOX	1000PCS/BOX
BT151	TO-220B	BT151-1000 XXXX	BOX	1000PCS/BOX

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

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	V_{DRM}	600/800/1000	V
Repetitive peak reverse voltage	V_{RRM}	600/800/1000	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	72	A ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di_T/dt	50	A/ μ s
Peak gate current	I_{GM}	2	A
Average gate power dissipation	$P_G (AV)$	0.5	W
Junction Temperature	T_J	-40~+125	°C
Storage Temperature	T_{STG}	-40 ~+150	°C

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

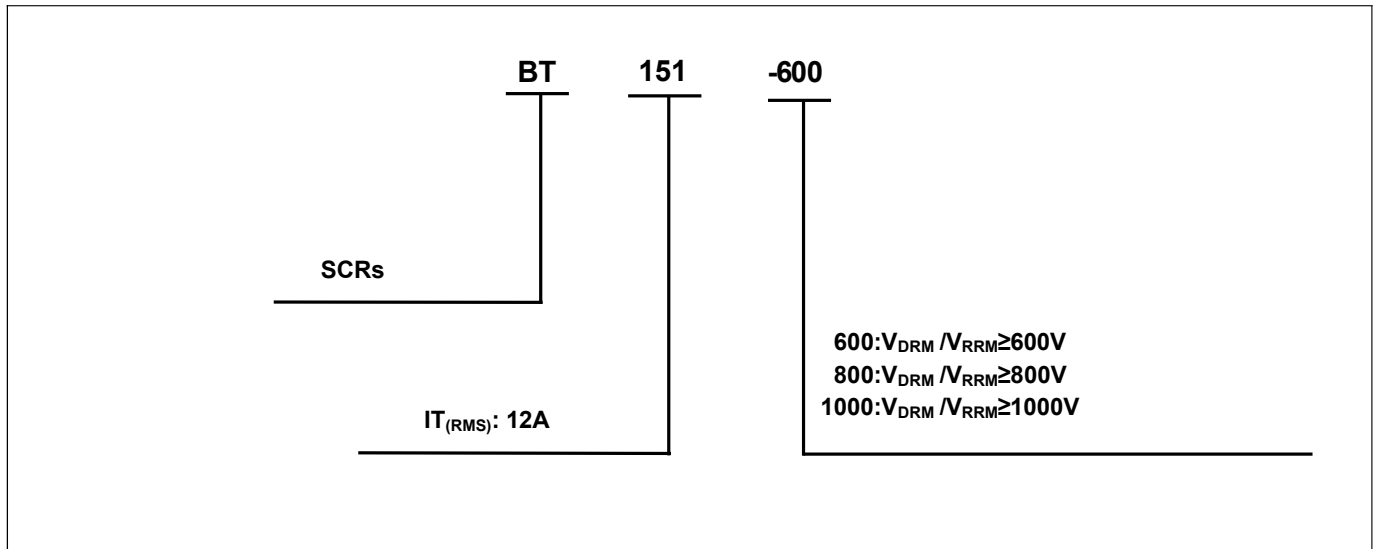
Parameter	Symbol	Test Condition	Value			Unit
			Min	typ	Max	
Gate trigger current	I_{GT}	$V_D=12V, I_T=0.1A, T_j=25^\circ C, \text{ Fig. 6}$	-	-	15	mA
Gate trigger voltage	V_{GT}	$V_D=12V, I_T=0.1A, T_j=25^\circ C$	-	-	1.0	V
Gate non-trigger voltage	V_{GD}	$V_D = V_{DRM} T_j=125^\circ C$	0.2	-	-	V
Holding current	I_H	$V_D=12V, I_{GT}=0.1A, T_j=25^\circ C,$	-	-	30	mA
latching current	I_L	$V_D=12V, I_{GT}=0.1A, T_j=25^\circ C,$	-	-	40	mA
Critical-rate of rise of commutation voltage	dV_D/dt	$V_D=67\%V_{DRM}$ Gate Open $T_j=125^\circ C$	200	-	-	V/μs

STATIC CHARACTERISTICS

Forward "on" voltage	V_{TM}	$I_T = 23A t_p=380\mu s, T_j=25^\circ C$	-	-	1.6	V	
Repetitive Peak Off-State Current	I_{DRM}	$V_D=V_{DRM}/V_{RRM}$	$T_j=25^\circ C$	-	-	10	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.	1.3	$^\circ C/W$
	$R_{th(j-a)}$	Junction to ambient	TYP.	60	$^\circ C/W$

Ordering Information


Typical Characteristics

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

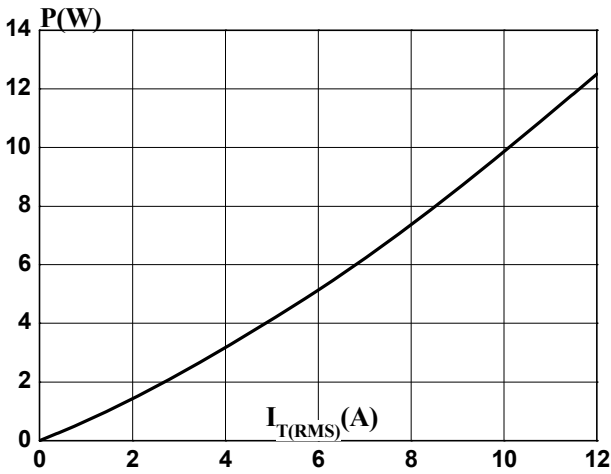


FIG.2: RMS on-state current versus case temperature (full cycle)

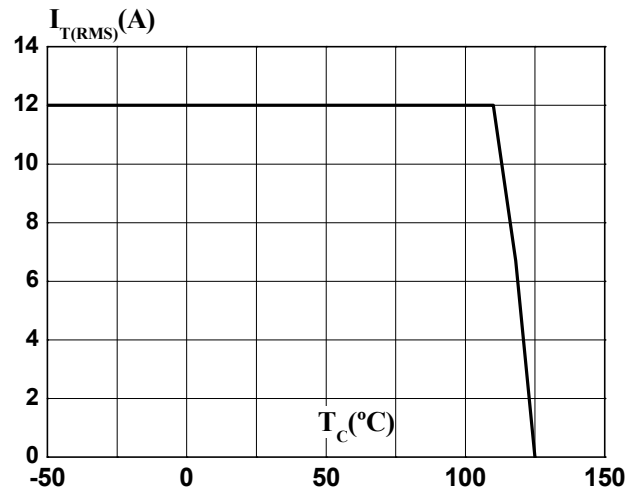


FIG.3: Surge peak on-state current versus number of cycles

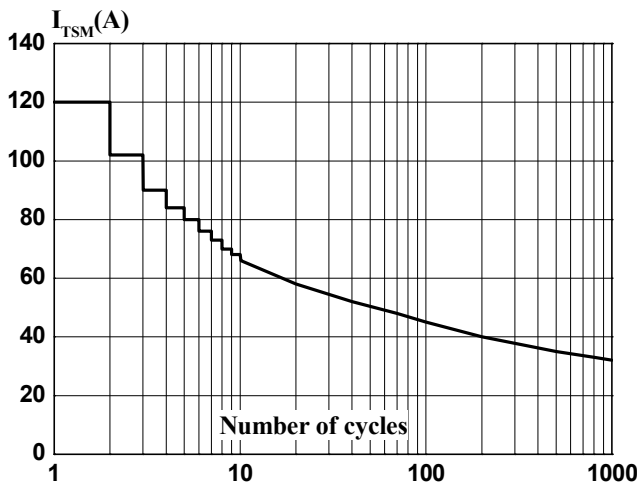


FIG.4: On-state characteristics (maximum values)

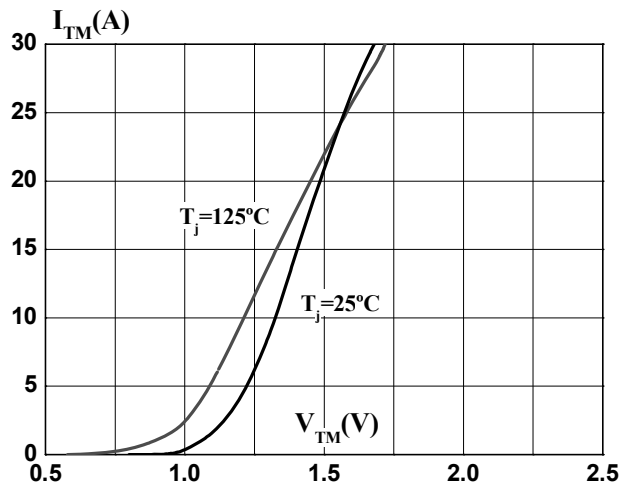


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$

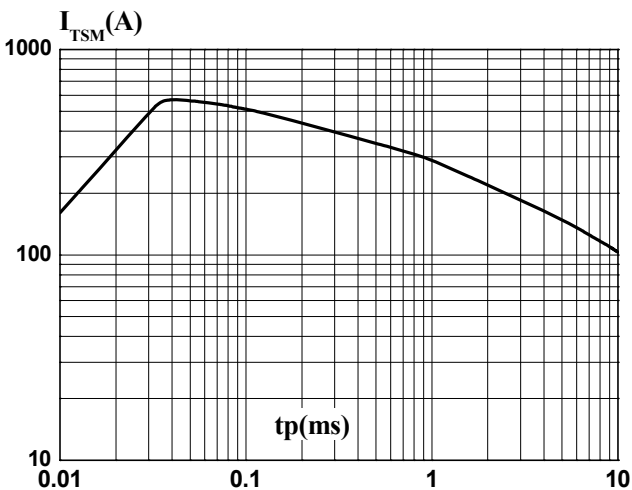
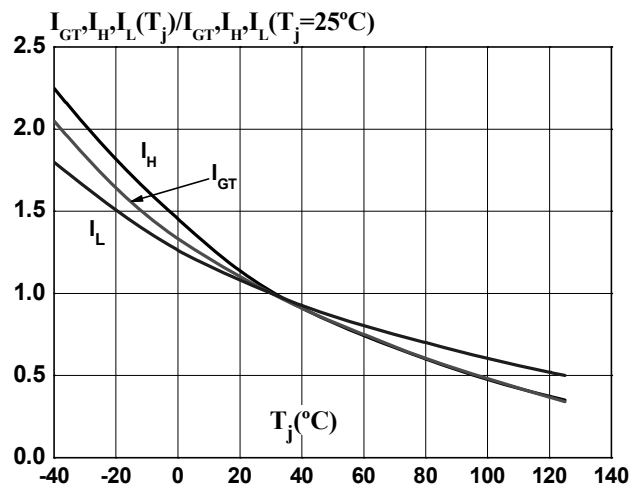
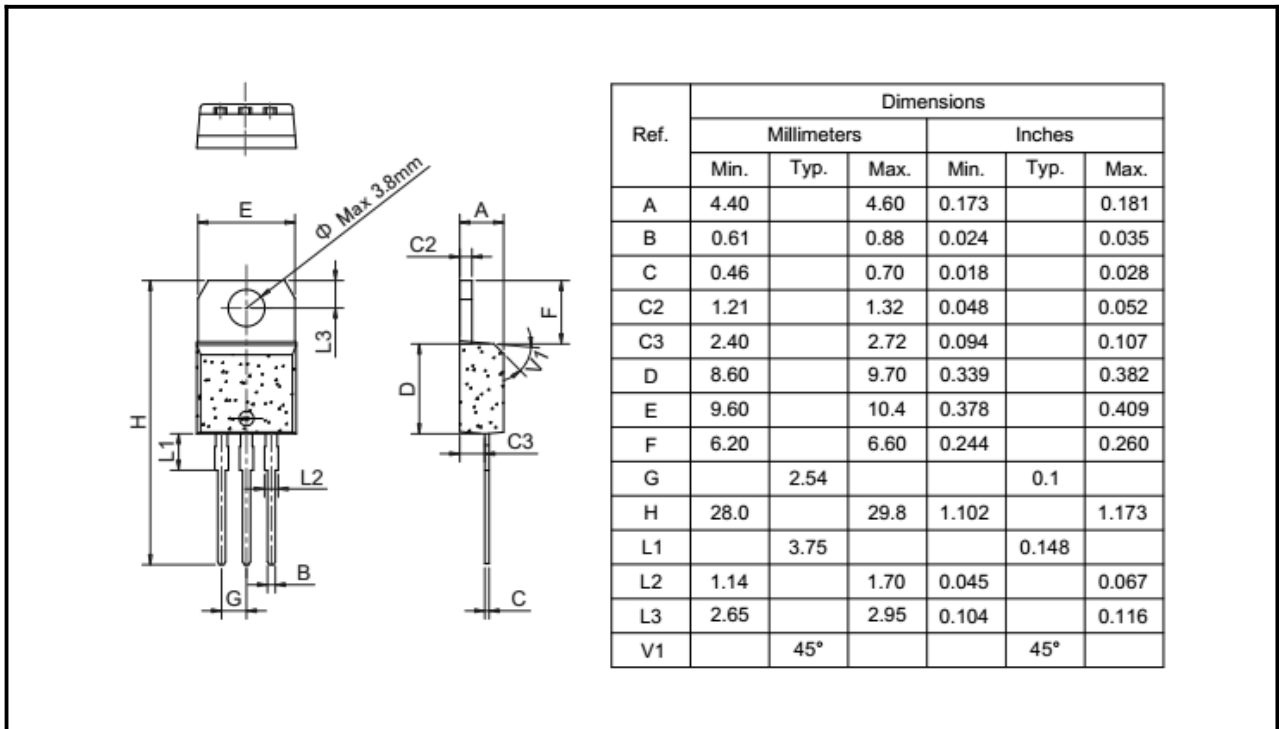


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



TO-220B



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