

Product Summary

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

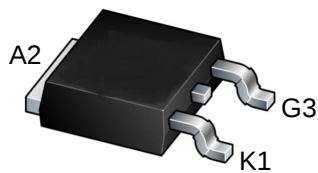
Feature

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

Application

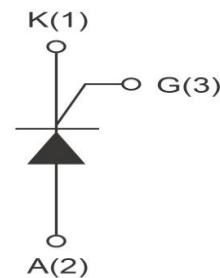
Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.

Package

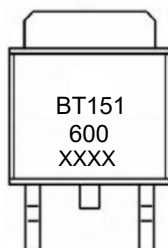


TO-252AB

Circuit diagram



Marking



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_T/dt	50	A/ μ s
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	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	
Gate trigger current	I _{GT}	V _D =12V R _L = 140Ω	MAX.	10	mA	
Gate trigger voltage	V _{GT}		MAX.	1.3	V	
Gate non-trigger voltage	V _{GD}	V _D =V _{DRM} T _j =125℃	MIN.	0.2	V	
latching current	I _L	I _G =1.2I _{GT}	MAX.	50	mA	
Holding current	I _H	I _T = 50mA	MAX.	40	mA	
Critical-rate of rise of commutation voltage	dV _D /dt	V _D =2/3V _{DRM} Gate Open T _j =125℃	MIN.	200	V/μs	
STATIC CHARACTERISTICS						
Forward "on" voltage	V _{TM}	I _{TM} =16A tp=380μs		MAX.	1.55	V
Repetitive Peak Off-State Current	I _{DRM}	V _D =V _{DRM} V _R =V _{RRM}	T _j =25℃	MAX.	5	μA
Repetitive Peak Reverse Current	I _{RRM}		T _j =125℃	MAX.	2	mA
THERMAL RESISTANCES						
Thermal resistance	R _{th(j-c)}	Junction to case	TYP.	1.3	℃/W	
	R _{th(j-a)}	Junction to ambient	TYP.	70	℃/W	

Typical Characteristics

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

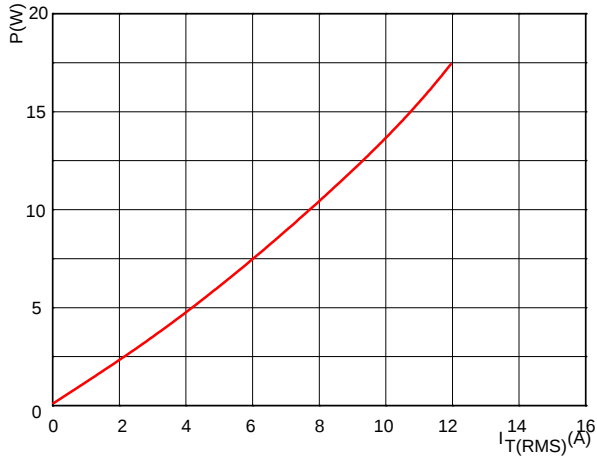


FIG.2: RMS on-state current versus case temperature (full cycle)

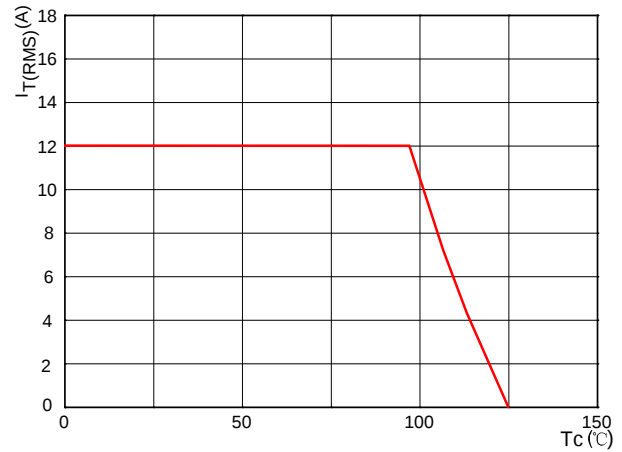


FIG.3: Surge peak on-state current versus number of cycles

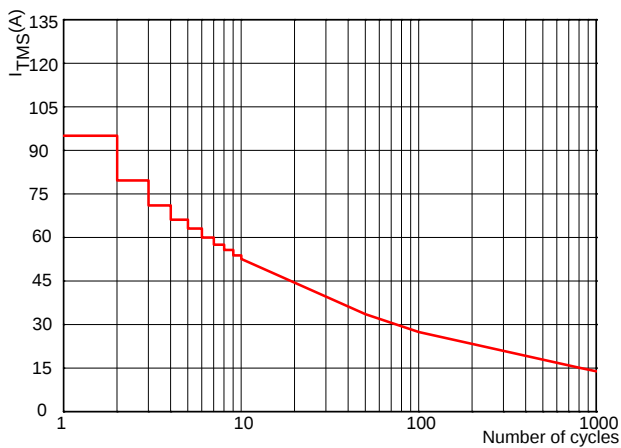


FIG.4: On-state characteristics (maximum values)

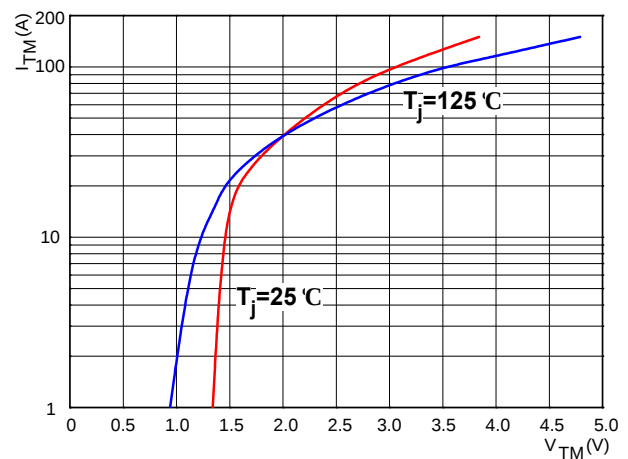


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$

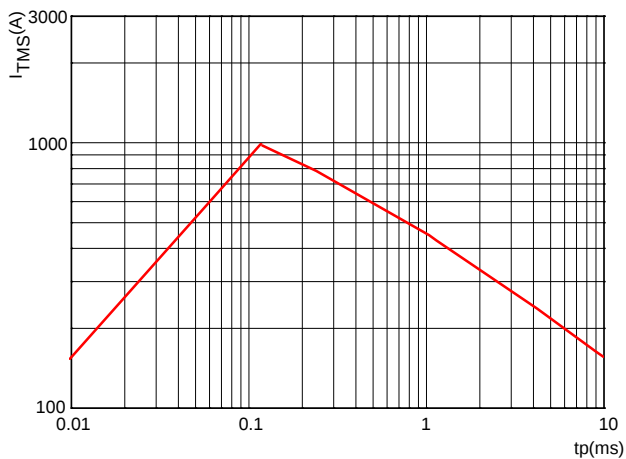
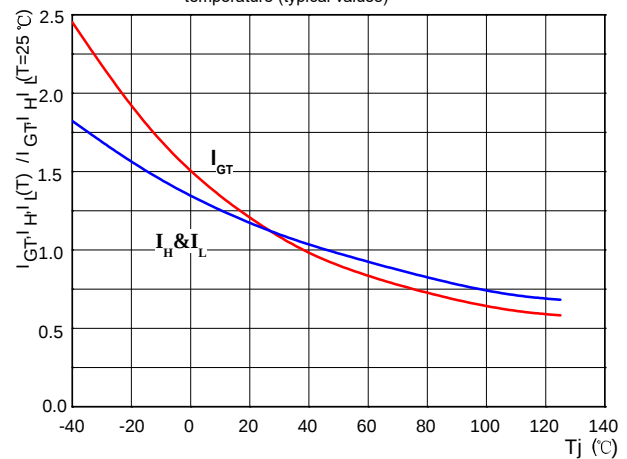


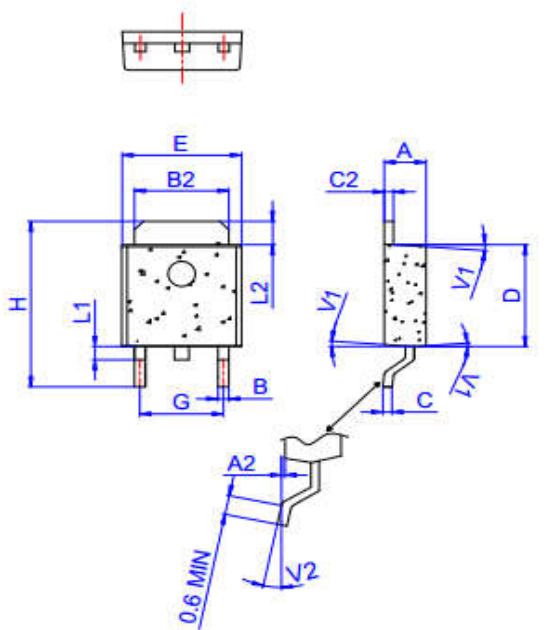
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Ordering Information

BT151 D – 600		
SCRs $I_{T(RMS)}$: 12A		
D: TO-252AB		$600: V_{DRM} / V_{RRM} \geq 600V$ $800: V_{DRM} / V_{RRM} \geq 800V$

TO-252AB Package Information

		Dimensions					
		Millimeters			Inches		
		Min.	Typ.	Max.	Min.	Typ.	Max.
A		2.20		2.40	0.086		0.095
A2		0.03		0.23	0.001		0.009
B		0.55		0.65	0.022		0.026
B2		5.10		5.40	0.200		0.213
C		0.45		0.62	0.018		0.024
C2		0.48		0.85	0.019		0.034
D		5.30		6.20	0.208		0.244
E		6.40		6.70	0.252		0.264
G		4.40		4.70	0.173		0.185
H		9.35		10.6	0.368		0.417
L1		1.30		1.70	0.051		0.067
L2		1.37		1.50	0.054		0.059
V1			4°			4°	
V2		0°		8°	0°		8°