

Product Summary

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

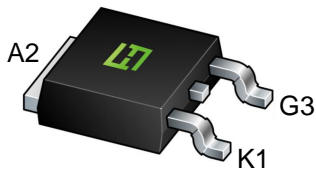
Feature

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

Application

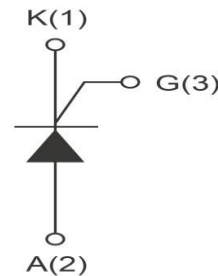
Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.

Package

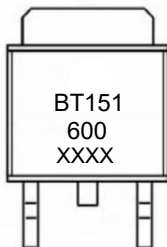


TO-252AB

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 _{RPM}	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 ² t value for fusing (tp=10ms)	I ² t	45	A ² s
Critical rate of rise of on-state current (I _G = 2 × I _{GT})	di _T /dt	50	A/μs
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 (T_A=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°C	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°C	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 _{RPM}	T _j =25°C	MAX.	5	μA
Repetitive Peak Reverse Current	I _{RPM}		T _j =125°C	MAX.	2	mA
THERMAL RESISTANCES						
Thermal resistance	R _{th(j-c)}	Junction to case	TYP.	1.3	°C/W	
	R _{th(j-a)}	Junction to ambient	TYP.	70	°C/W	

Typical Characteristics

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

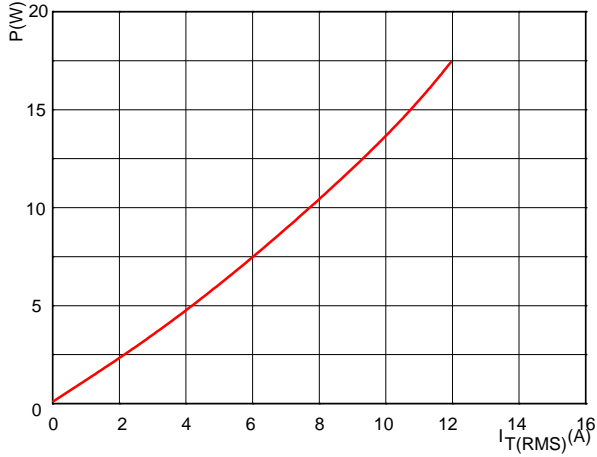


FIG.2: RMS on-state current versus case temperature (full cycle)

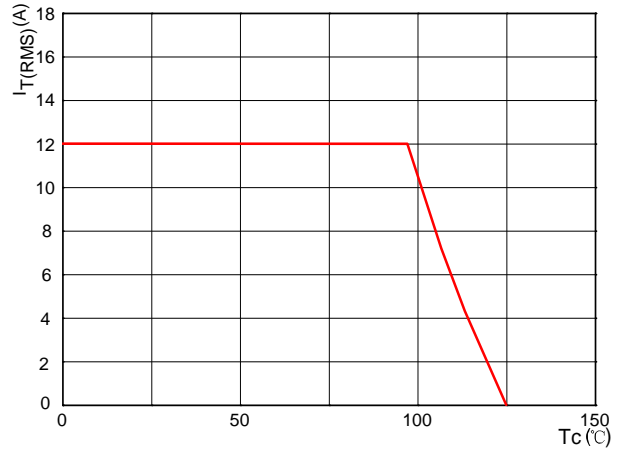


FIG.3: Surge peak on-state current versus number of cycles

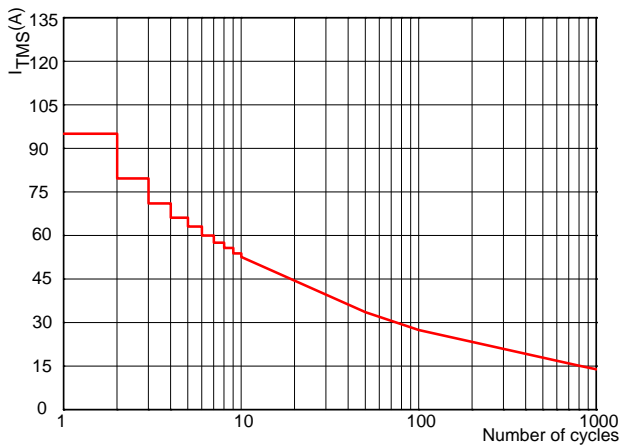


FIG.4: On-state characteristics (maximum values)

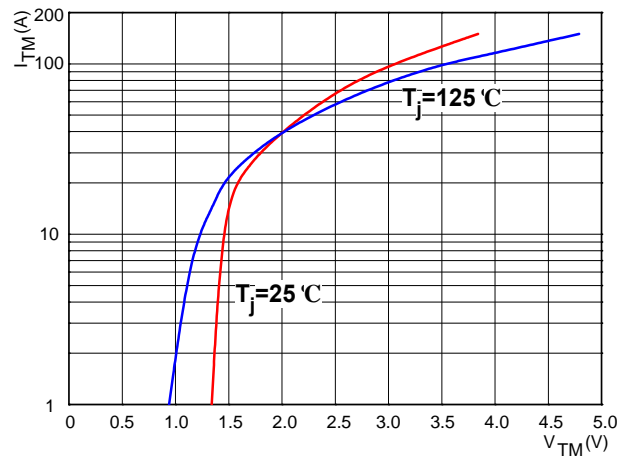


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$

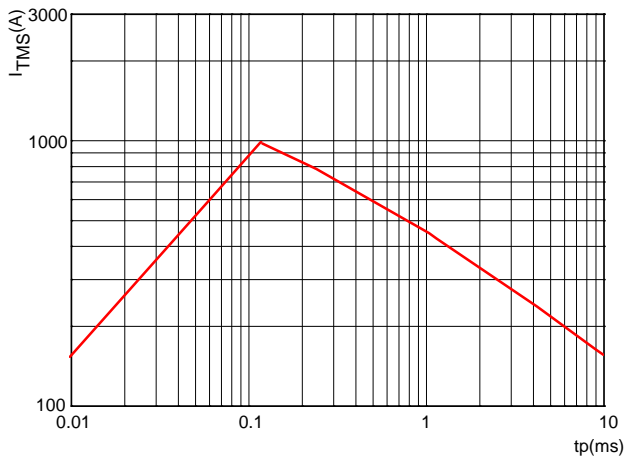
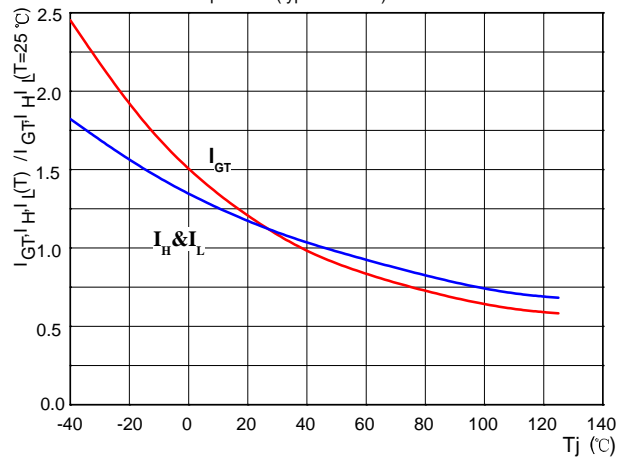
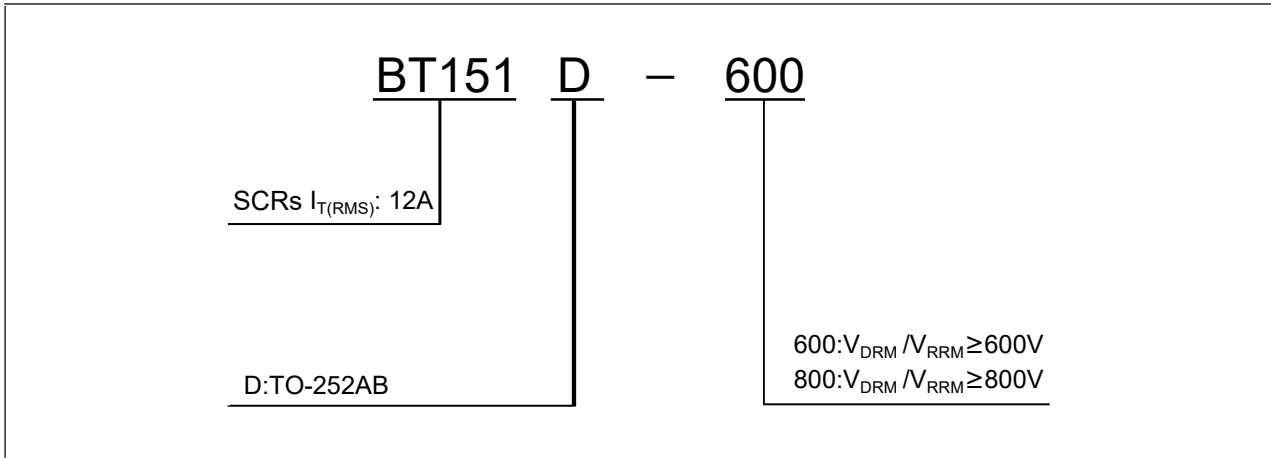


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Ordering Information



TO-252AB Package Information

