

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	2	A
$V_{DRM} V_{RRM}$	600 / 800	V
V_{TM}	1.55	V

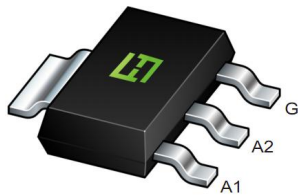
Feature

With high ability to withstand the shock loading of large current, With high commutation performances, 4 quadrants products especially recommended for use on inductive load.

Application

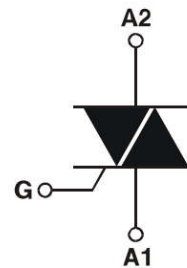
Heating controller; Motor speed controller; Mahjong machine; Blender; Hair straightener; Household appliances like toasters...

Package

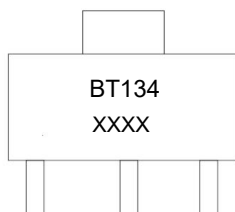


SOT-223-3L

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	$I_{T(RMS)}$	2	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	20	A
I^2t value for fusing (tp=10ms)	I^2t	0.72	A ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di_T/dt	20	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		
			E			
Gate trigger current	I_{GT}	$V_D=12V, R_L=30\Omega, T_J=25^\circ C$	I - II - III	≤ 5	mA	
			IV	≤ 10		
Gate trigger voltage	V_{GT}	ALL	≤ 1.3	V		
Gate non-trigger voltage	V_{GD}	$V_D = V_{DRM} T_J = 125^\circ C$	≥ 0.2	V		
latching current	I_L	$I_G = 1.2 I_{GT}$	I - III	≤ 5	mA	
			II - IV	≤ 10		
Holding current	I_H	$I_T = 200mA$	≤ 5	mA		
Critical-rate of rise of commutation voltage	dV_D/dt	$V_D = 2/3 V_{DRM}$ Gate Open $T_J = 125^\circ C$	≥ 15	V/ μ s		
STATIC CHARACTERISTICS						
Forward "on" voltage	V_{TM}	$I_{TM} = 1.4A$ tp=380 μ s	MAX.	1.55	V	
Repetitive Peak Off-State Current	I_{DRM}	$V_D = V_{DRM} V_R = V_{RRM}$	$T_J = 25^\circ C$	MAX.	5	μ A
Repetitive Peak Reverse Current	I_{RRM}		$T_J = 125^\circ C$	MAX.	0.5	mA
THERMAL RESISTANCES						
Thermal resistance	$R_{th(j-c)}$	Junction to case(AC)	TYP.	31	°C/W	

Typical Characteristics

FIG.1: Maximum power dissipation versus RMS on-state current

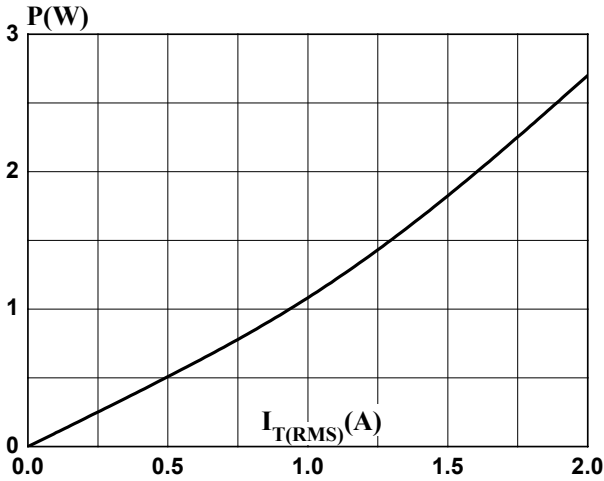


FIG.2: RMS on-state current versus case temperature

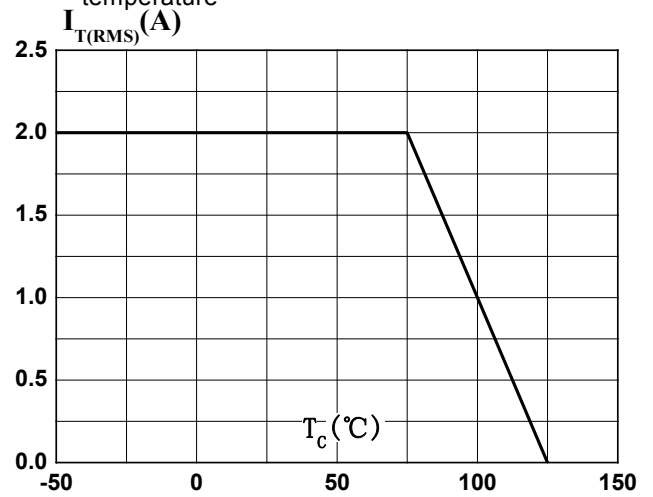


FIG.3: Surge peak on-state current versus number of cycles

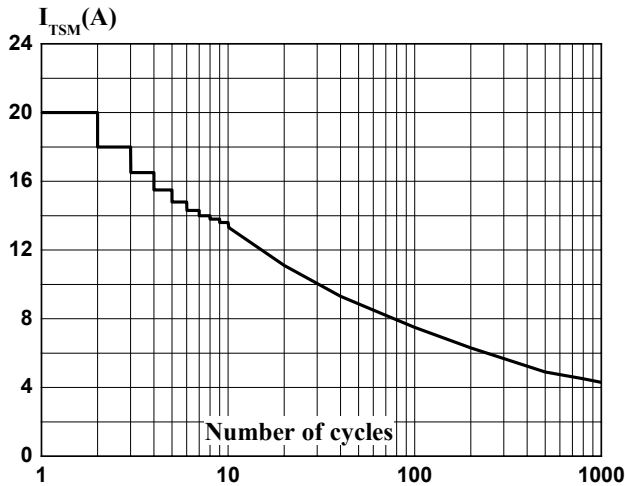


FIG.4: On-state characteristics (maximum values)

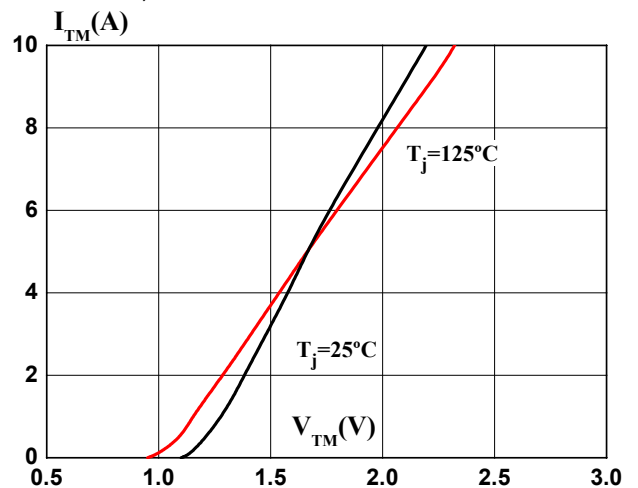


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 20\text{A}/\mu\text{s}$)

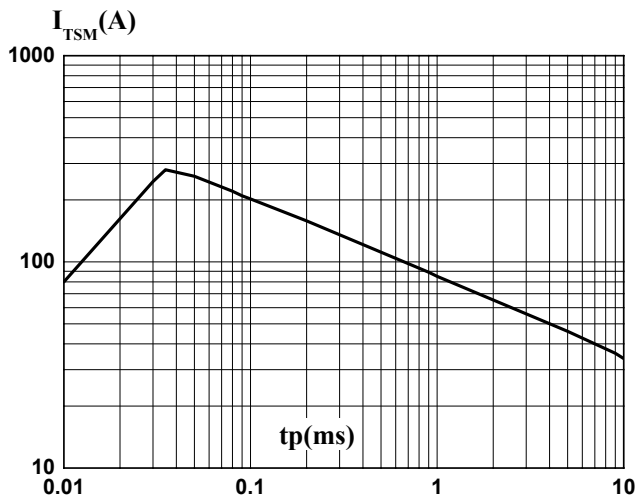
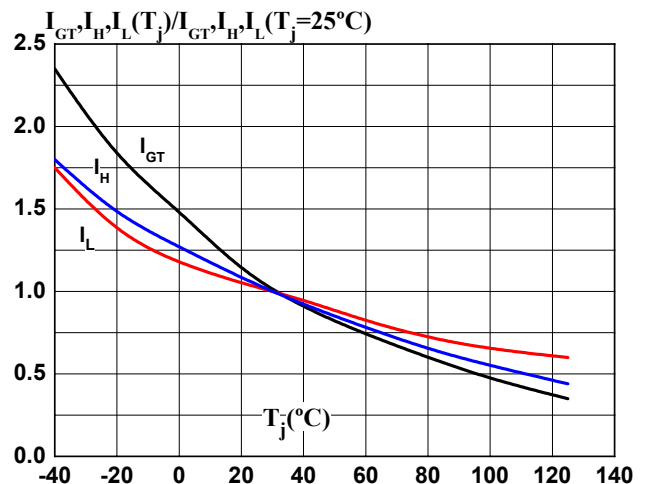
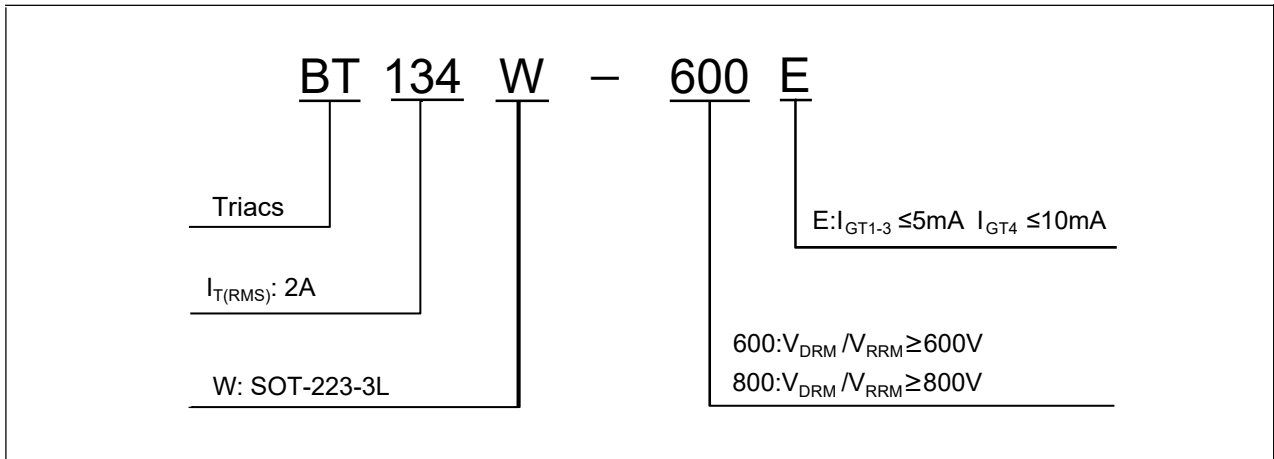


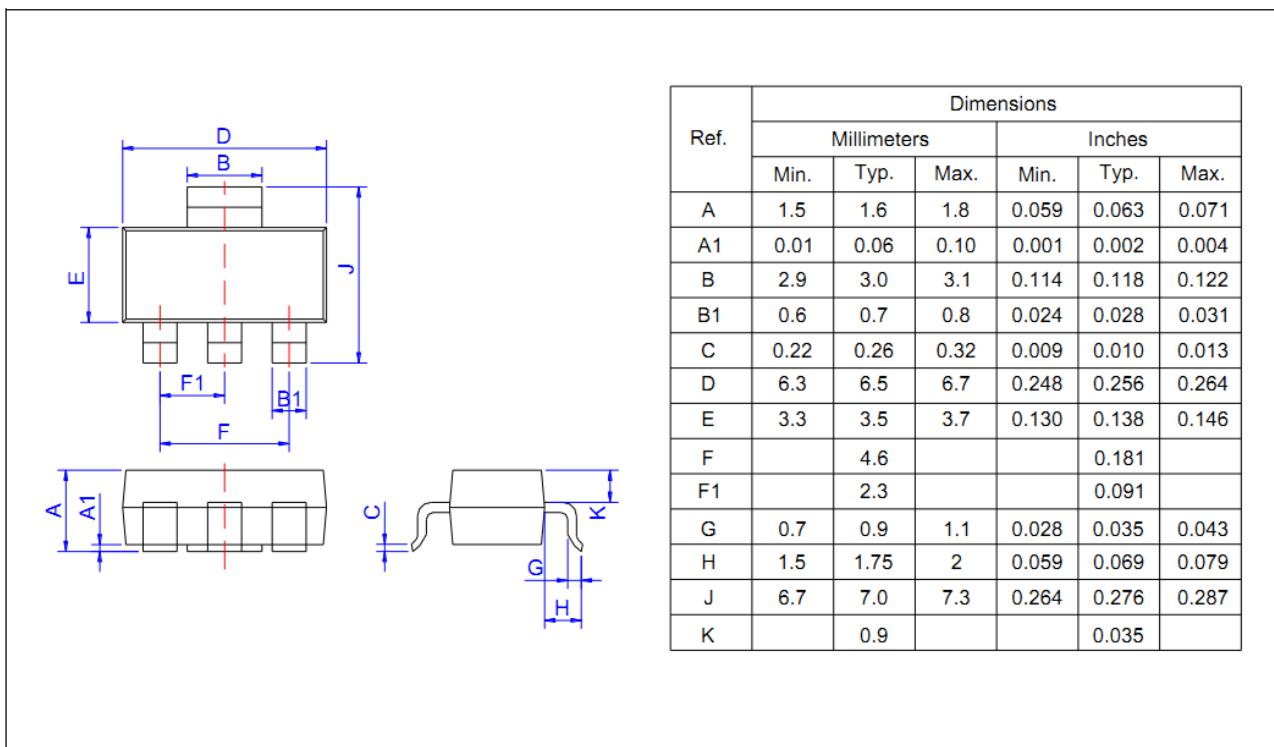
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



Ordering Information



SOT-223-3L Package Information



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