BT131S Series

1.0A 4Quadrants TRIACs

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	1.0	A
V_{DRM} V_{RRM}	600/800	V
V_{TM}	1.55	V

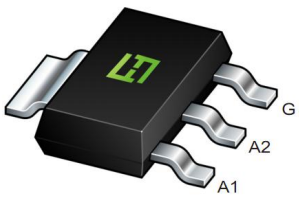
Feature

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

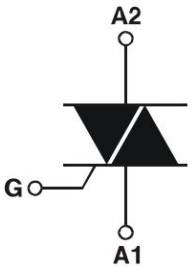
Washing machine, vacuums, massager, solid state relay, AC Motor speed regulation and so on.

Package

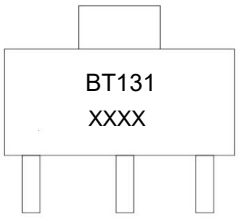


SOT-223-3L

Circuit diagram



Marking



Absolute maximum ratings (Ta=25℃ 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	$I_{T(RMS)}$	1		A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	16		A
I^2t value for fusing (tp=10ms)	I^2t	1.28		A^2s
Critical rate of rise of on-state current (I_G =2×I_{GT})	dI/dt	Ⅰ-Ⅱ-Ⅲ	50	A/μs
		Ⅳ	10	
Peak gate current	I_{GM}	2		A
Average gate power dissipation	$P_{G(AV)}$	0.5		W
Junction Temperature	T_J	-40 ~ +125		℃
Storage Temperature	T_{STG}	-40 ~ +150		℃

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

Parameter	Symbol	Test Condition		Value		Unit
Gate trigger current	I_{GT}	V_D =12V I_T = 0.1A T_j =25℃	Ⅰ-Ⅱ-Ⅲ	MAX.	5	mA
			Ⅳ		10	
Gate trigger voltage	V_{GT}		Ⅰ-Ⅱ-Ⅲ-Ⅳ	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	V_D =12V I_{GT} = 0.1A T_j =25℃	Ⅰ-Ⅲ-Ⅳ	MAX.	10	mA
			Ⅱ		15	
Holding current	I_H		Ⅰ-Ⅱ-Ⅲ-Ⅳ	MAX.	5	mA
Critical-rate of rise of commutation voltage	dV/dt	V_D=2/3V_{DRM} Gate Open T_j =125℃		MIN.	50	V/μs
STATIC CHARACTERISTICS						
Forward "on" voltage	V_{TM}	I_{TM} =1.5A 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.	100	μA
THERMAL RESISTANCES						
Thermal resistance	Rth(j-c)	Junction to case(AC)		TYP.	23	℃/W
	Rth(j-a)	Junction to ambient		TYP.	60	℃/W

Typical Characteristics

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

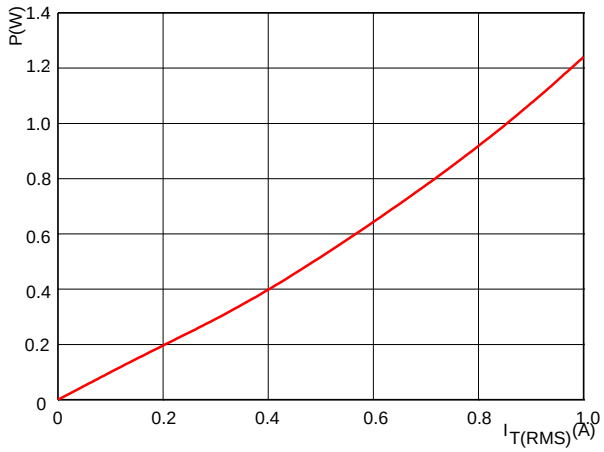


FIG.2: RMS on-state current versus case temperature (full cycle)

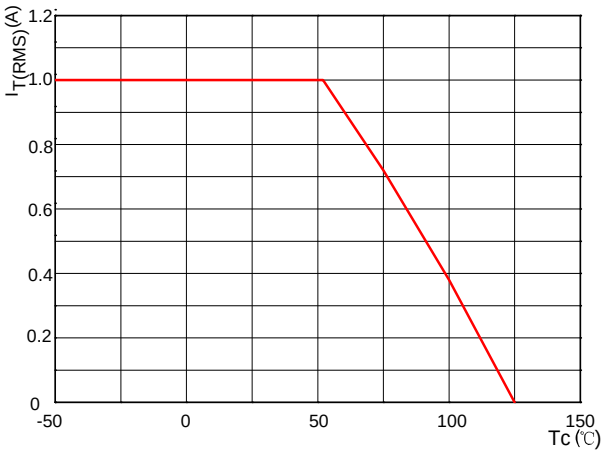


FIG.3: Surge peak on-state current versus number of cycles

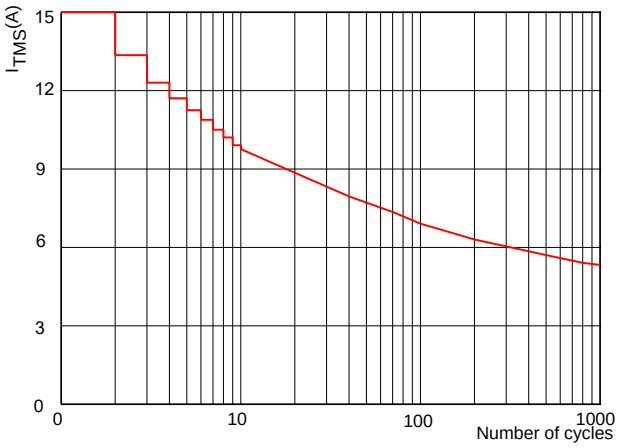


FIG.4: On-state characteristics (maximum values)

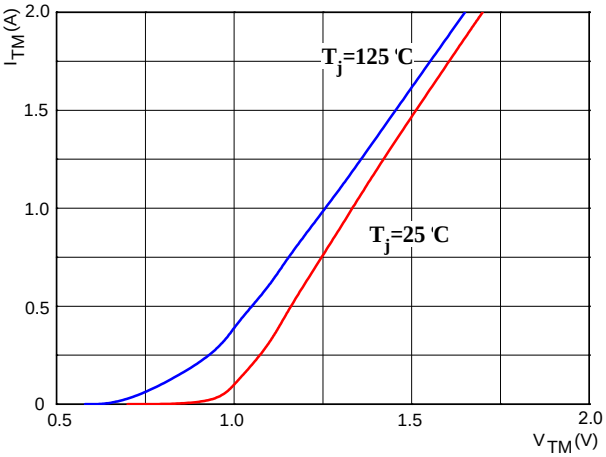


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms

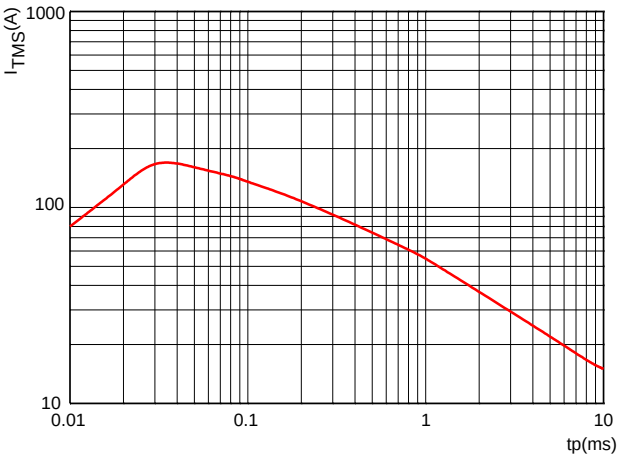
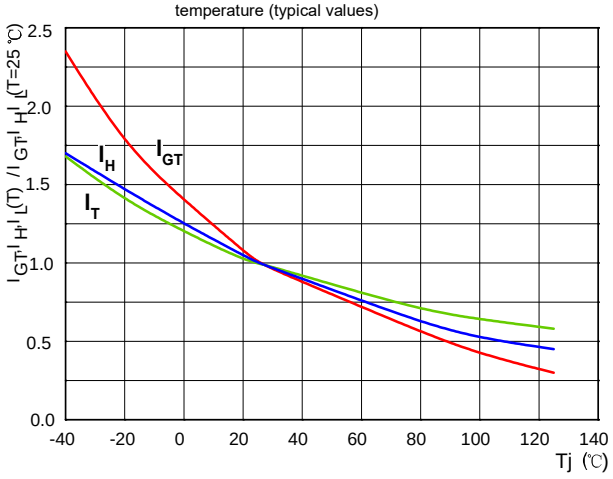
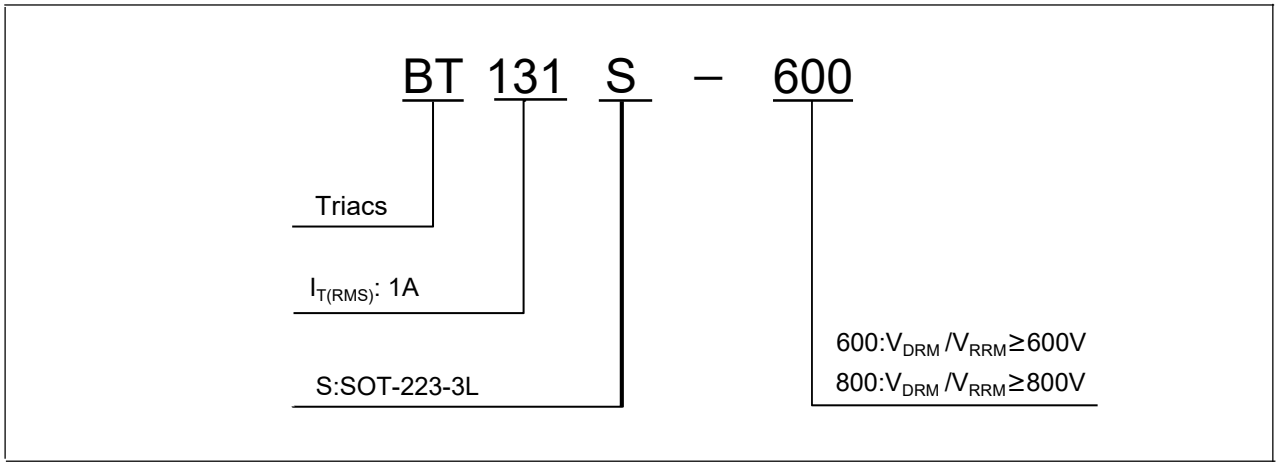


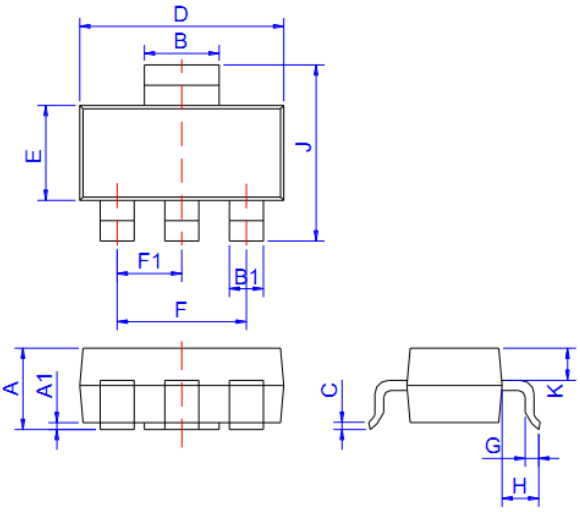
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Ordering Information



SOT-223-3L Package Information



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	0.146
F		4.6			0.181	
F1		2.3			0.091	
G	0.7	0.9	1.1	0.028	0.035	0.043
H	1.5	1.75	2	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K		0.9			0.035	

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