

4.0A 4Quadrants TRIACs

Product Summary

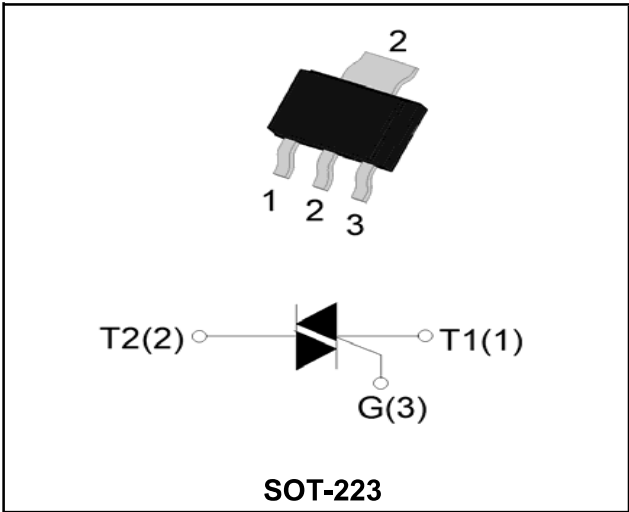
Symbol	Value	Unit
$I_{T(RMS)}$	4.0	A
$V_{DRM} V_{RRM}$	600/800	V
V_{TM}	1.55	V

Features

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.



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	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	25	A
I^2t value for fusing (tp=10ms)	I^2t	3.1	A ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di_T/dt	I - II - III	50
		IV	10
Peak gate current	I_{GM}	2	A
Gate peak power	P_{GM}	5	W
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
			D	E	
Gate trigger current	I_{GT}	$V_D=12V$ $I_T=0.1A$ $T_j=25^\circ C$ Fig.6	≤ 5	≤ 10	mA
			≤ 10	≤ 25	
Gate trigger voltage	V_{GT}	I - II - III - IV	≤ 1.3		V
Gate non-trigger voltage	V_{GD}	$V_D = V_{DRM}, T_j=125^\circ C$	≥ 0.2		V
Holding current	I_H	$V_D = 12V$ $I_{GT}=0.1A$ $T_j=25^\circ C$ Fig.6	≤ 10	≤ 15	mA
			≤ 10	≤ 15	
latching current	I_L		≤ 15	≤ 20	mA
Critical-rate of rise of commutation voltage	dV_D/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ C$	≥ 10	≥ 20	V/us

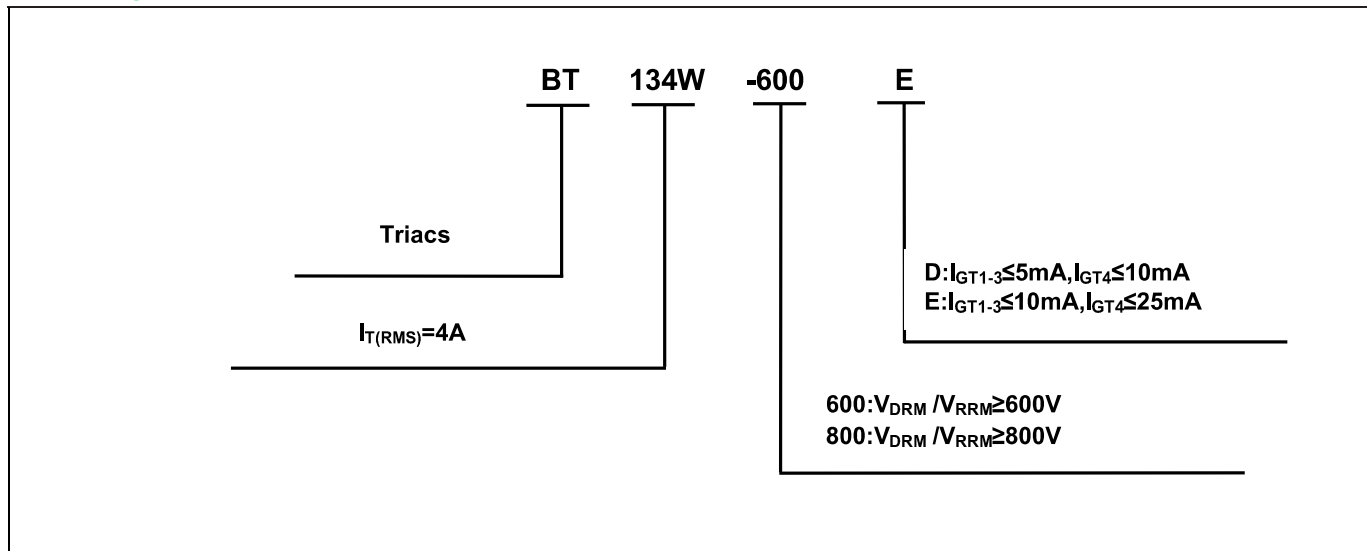
STATIC CHARACTERISTICS

Forward "on" voltage	V_{TM}	I _{TM} =6A,T _P =380US,FIG.4		≤1.55		V
Repetitive Peak Off-State Current	I_{DRM}	V _D =V _{DRM} V _R =V _{RRM}	T _J =25°C	≤5	≤5	uA
Repetitive Peak Reverse Current	I_{RRM}		T _J =125°C	≤0.5	≤0.5	mA

THERMAL RESISTANCES

Thermal resistance	$R_{th(j-c)}$	Junction to case(AC)	TYP.	23	$^\circ C/W$
	$R_{th(j-a)}$	Junction to ambient S=5cm ²	TYP.	60	$^\circ C/W$

Ordering Information



Typical Characteristics

FIG1 Maximum power dissipation versus RMS on-state current

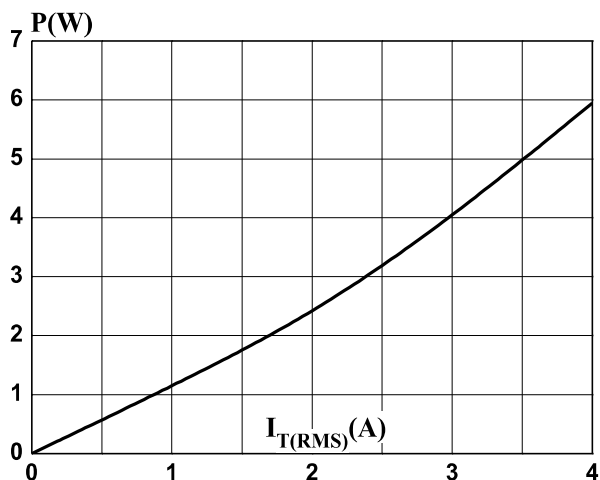


FIG2 RMS on-state current versus case temperature

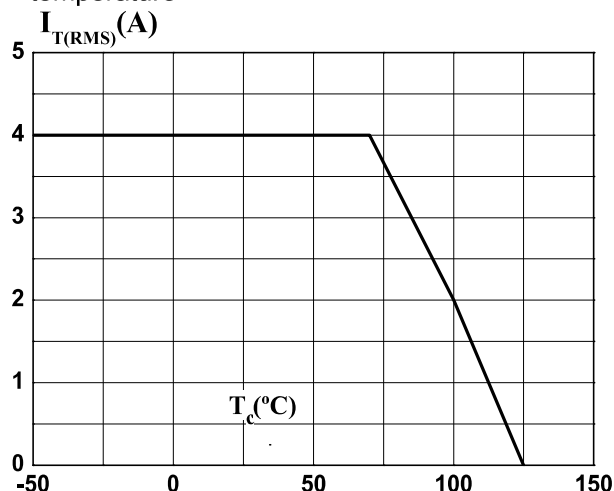


FIG3 Surge peak on-state current versus number of cycles

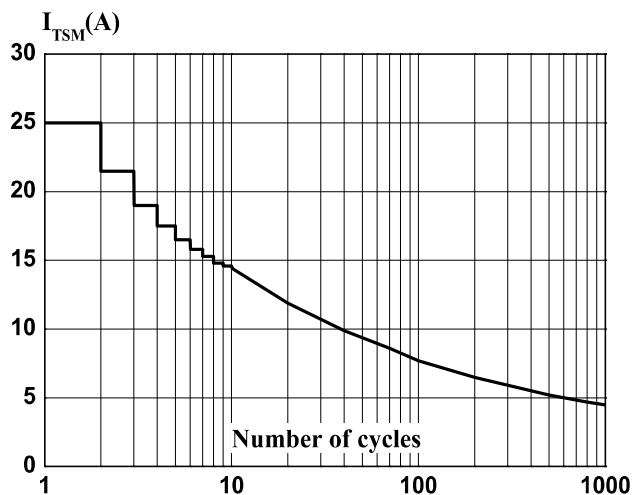


FIG4 On-state characteristics (maximum values)

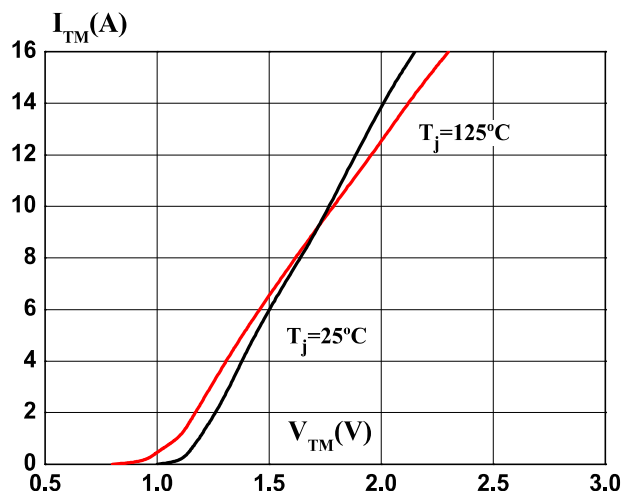


FIG5 Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t ($dI/dt < 100A/\mu s$)

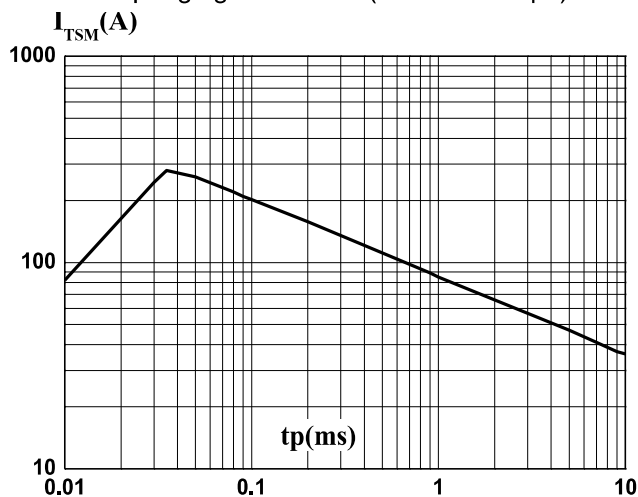
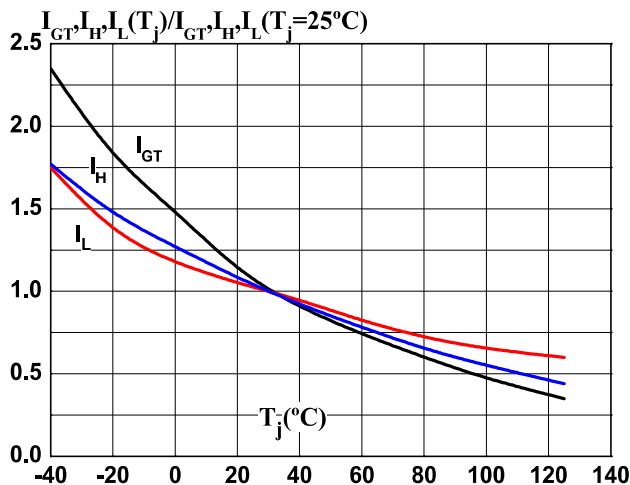


FIG6 Relative variations of gate trigger current, holding current and latching current versus junction temperature



Ordering information

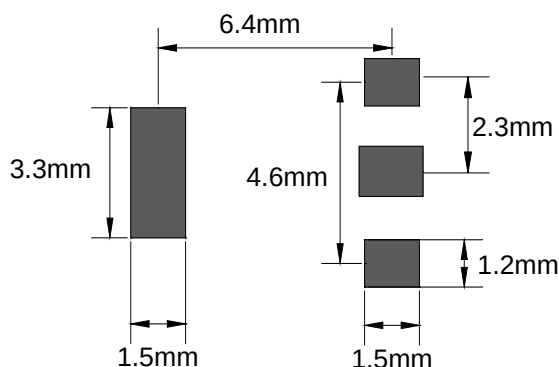
Package	Packing Description	Base Quantity	Packing Quantity
SOT-223	Tape/Reel, 7" reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton
	Tape/Reel, 13" reel	2500pcs/Reel	5000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-223

Dlm	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.80	0.059	0.071
A1	0.00	0.10	0.000	0.004
A2	1.50	1.70	0.059	0.067
b	0.65	0.75	0.026	0.030
c	0.20	0.30	0.008	0.012
D	6.40	6.60	0.252	0.260
D1	2.90	3.10	0.114	0.122
E	3.30	3.70	0.130	0.146
E1	6.85	7.15	0.270	0.281
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	1.65	1.85	0.065	0.073
L1	0.90	1.15	0.035	0.045

The recommended mounting pad size



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