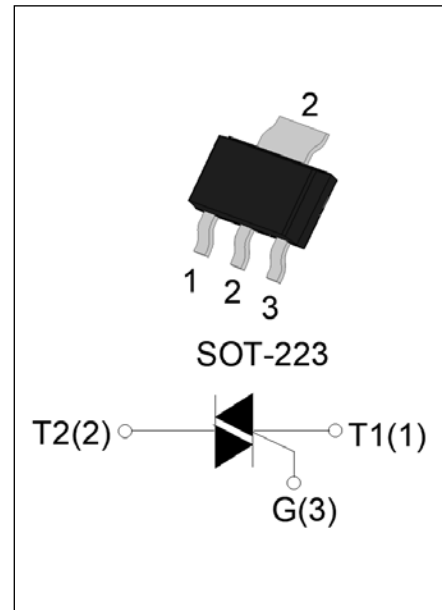




## JST131V-600T 1A TRIAC

Rev.A.1.0

The JST131V-600T triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. Package SOT-223 is RoHS compliant.



Symbol	Value	Unit
$I_{T(RMS)}$	1	A
$V_{DRM}/V_{RRM}$	600	V
$I_{GT} / / /$	5/5/5/5	mA

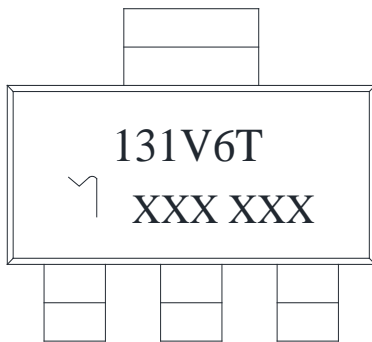
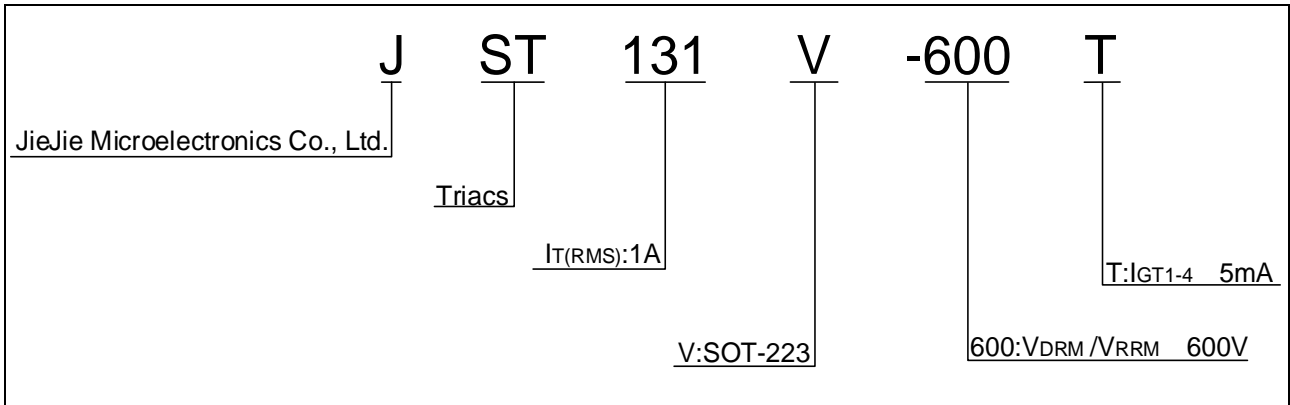
Parameter	Symbol	Value	Unit
Storage junction temperature range	$T_{stg}$	-40-150	
Operating junction temperature range	$T_j$	-40-125	
Repetitive peak off-state voltage ( $T_j=25^\circ C$ )	$V_{DRM}$	600	V
Repetitive peak reverse voltage ( $T_j=25^\circ C$ )	$V_{RRM}$	600	V
RMS on-state current ( $T_c = 98^\circ C$ )	$I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current (full cycle, $t_p=20ms$ , $T_j=25^\circ C$ )	$I_{TSM}$	16.5	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6ms$ , $T_j=25^\circ C$ )		18	
$I^2t$ value for fusing ( $t_p=10ms$ , $T_j=25^\circ C$ )	$I^2t$	1.36	$A^2s$
Critical rate of rise of on-state current ( $I_G=2 I_{GT}$ , $f=100Hz$ , $T_j=125^\circ C$ )	-	30	$A/\mu s$
	-	20	
Peak gate current ( $t_p=20\mu s$ , $T_j=125^\circ C$ )	$I_{GM}$	2	A
Average gate power dissipation ( $T_j=125^\circ C$ )	$P_{G(AV)}$	0.5	W
Peak gate power	$P_{GM}$	5	W
Peak pulse voltage ( $T_j=25^\circ C$ ; non-repetitive, off-state; FIG.8)	$V_{PP}$	3.5	kV

( $T_j=25$  unless otherwise specified)

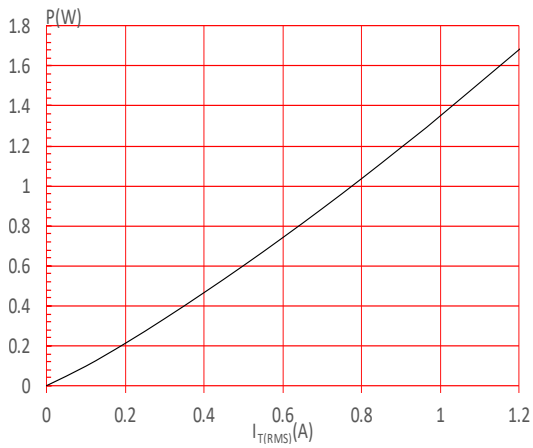
Symbol	Test Condition	Quadrant	Value		Unit
$I_{GT}$	$V_D=12V R_L=33$	ALL	MAX.	5	mA
$V_{GT}$		ALL	MAX.	1.3	V
$V_{GD}$	$V_D=V_{DRM} T_j=125$ $R_L=3.3K$	ALL	MIN.	0.2	V
$I_L$	$I_G=1.2I_{GT}$	- -	MAX.	5	mA
				10	
$I_H$	$I_T=50mA$		MAX.	5	mA
dV/dt	$V_D=400V$ Gate Open $T_j=110$		MIN.	30	V/ $\mu s$
(dV/dt) <sub>c</sub>	(dI/dt) <sub>c</sub> =0.44A/ms, $T_j=110$		MIN.	1	V/ $\mu s$
$t_{on}$	$I_G=10mA I_A=200mA I_R=20mA$ $T_j=25$		TYP.	2	$\mu s$
$t_{off}$				20	

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=1.4A t_p=380\mu s$	$T_j=25$	1.45	V
$V_{TO}$	Threshold voltage	$T_j=125$	0.96	V
$R_D$	Dynamic resistance	$T_j=125$	225	m
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25$	5	$\mu A$
$I_{RRM}$		$T_j=125$	0.2	mA

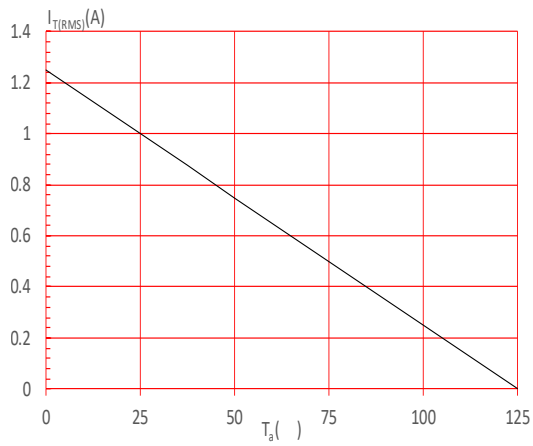
Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	20	$\mu W$
$R_{th(j-a)}$	junction to ambient (AC)	130	$\mu W$



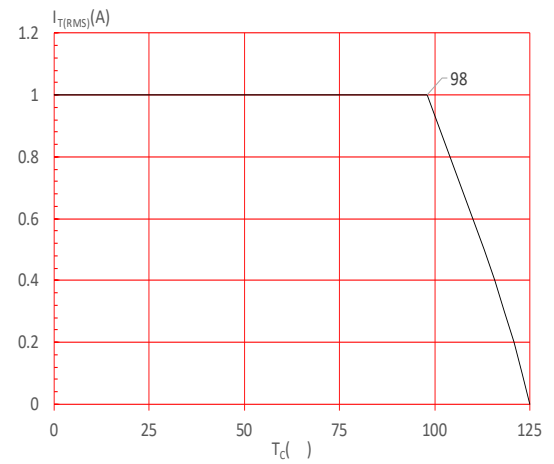
**FIG.1** Maximum power dissipation versus RMS on-state current



**FIG.3:** RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness: 35 $\mu$ m) (full cycle)



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



**FIG.4:** Surge peak on-state current versus number of cycles

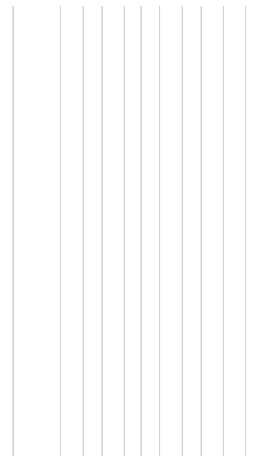


FIG.7: Relative variations of gate trigger current, holding current and latching current versus junction temperature

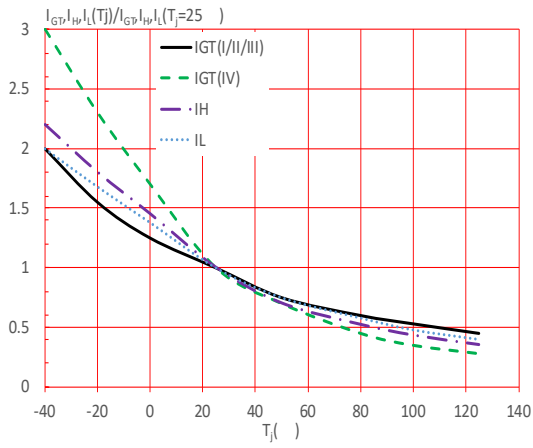
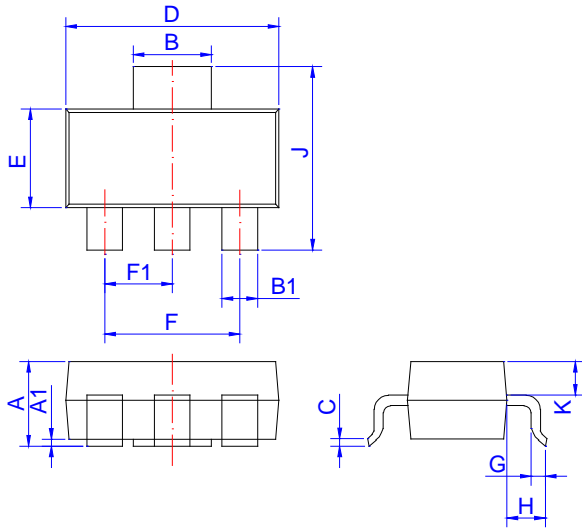


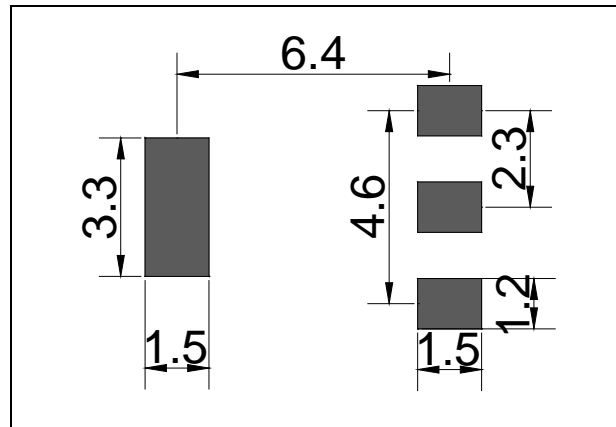
FIG.8 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



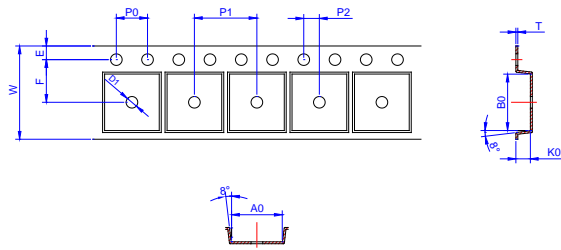




Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	0.146
F	4.4		4.8	0.173		0.189
F1	2.2		2.4	0.087		0.094
G	0.5		1.0	0.020		0.039
H	1.5	1.75	2.0	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K	0.8	0.9	1.0	0.031	0.035	0.039







Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
W	-		12.30	-		0.482
E	1.65	1.75	1.85	0.065	0.069	0.073
F	5.45	5.50	5.55	0.215	0.217	0.219
D0		1.55	1.60		0.061	0.063
D1		-	-			
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	7.90	8.00	8.10	0.311	0.315	0.319
P2	1.95	2.00	2.05	0.077	0.079	0.081
10P0	39.80	40.00	40.20	1.567	1.575	1.583
A0	6.85	6.95	7.05	0.269	0.273	0.276
B0	7.15	7.25	7.35	0.280	0.284	0.288
K0	1.95	2.05	2.15	0.076	0.080	0.084
T	0.20	0.25	0.30	0.008	0.010	0.012

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