

JST130N2-600T 0.8A TRIAC

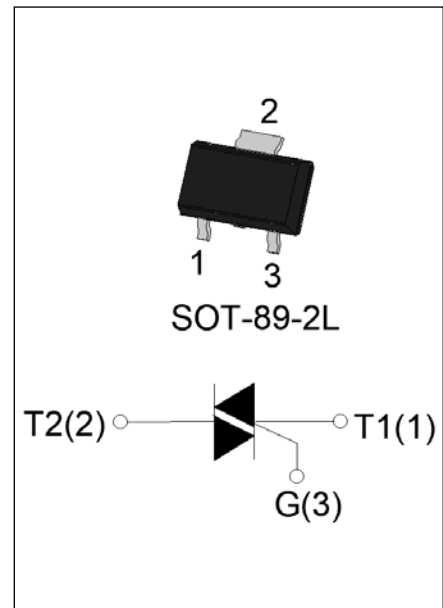
Rev.A.1.1

DESCRIPTION:

The JST130N2-600T 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-89-2L is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	0.8	A
V_{DRM}/V_{RRM}	600	V
$I_{GT\ I}/II/III/IV$	5/5/5/5	mA


ABSOLUTE MAXIMUM RATINGS

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℃)		V _{DRM}	600	V
Repetitive peak reverse voltage (T _j =25℃)		V _{RRM}	600	V
RMS on-state current (T _c ≤62℃)		I _{T(RMS)}	0.8	A
Non repetitive surge peak on-state current (full cycle , t _p =20ms , T _j =25℃)		I _{TSM}	10	A
Non repetitive surge peak on-state current (full cycle , t _p =16.6ms , T _j =25℃)			11	
I ² t value for fusing (t _p =10ms , T _j =25℃)		I ² t	0.5	A ² s
Critical rate of rise of on-state current (I _G =2×I _{GT} , f=100Hz , T _j =125℃)	I - II	di/dt	30	A/μs
	III-IV		20	
Peak gate current (t _p =20μs , T _j =125℃)		I _{GM}	1	A
Average gate power dissipation (T _j =125℃)		P _{G(AV)}	0.1	W
Peak gate power		P _{GM}	5	W
Peak pulse voltage (T _j =25℃; non-repetitive,off-state;FIG.8)		V _{pp}	2.5	kV

ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	ALL	MAX.	5	mA
V_{GT}		ALL	MAX.	1.3	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^{\circ}\text{C}$ $R_L=3.3\text{k}\Omega$	ALL	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	I -III-IV	MAX.	5	mA
		II		15	
I_H	$I_T=50\text{mA}$		MAX.	5	mA
dV/dt	$V_D=400\text{V}$ Gate Open $T_j=110^{\circ}\text{C}$		MIN.	30	$\text{V}/\mu\text{s}$
$(dV/dt)_c$	$(dI/dt)_c=0.3\text{A/ms}$, $T_j=110^{\circ}\text{C}$		MIN.	1	$\text{V}/\mu\text{s}$
t_{on}	$I_G=10\text{mA}$ $I_A=200\text{mA}$ $I_R=20\text{mA}$ $T_j=25^{\circ}\text{C}$	TYP.		2	μs
t_{off}				20	

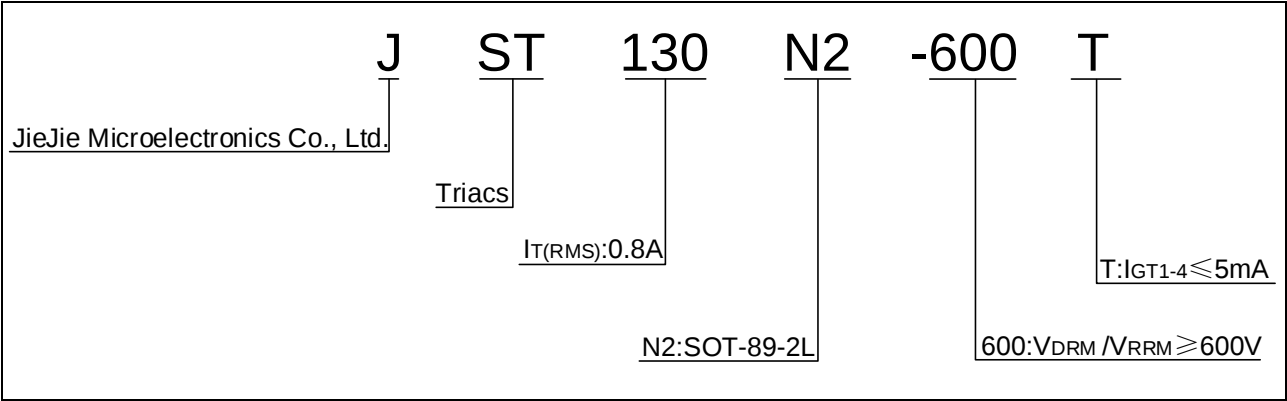
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=1\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}\text{C}$	1.01	V
R_D	Dynamic resistance	$T_j=125^{\circ}\text{C}$	316	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.2	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	55	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (AC, in free air, $S=5\text{cm}^2$)	100	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION



MARKING

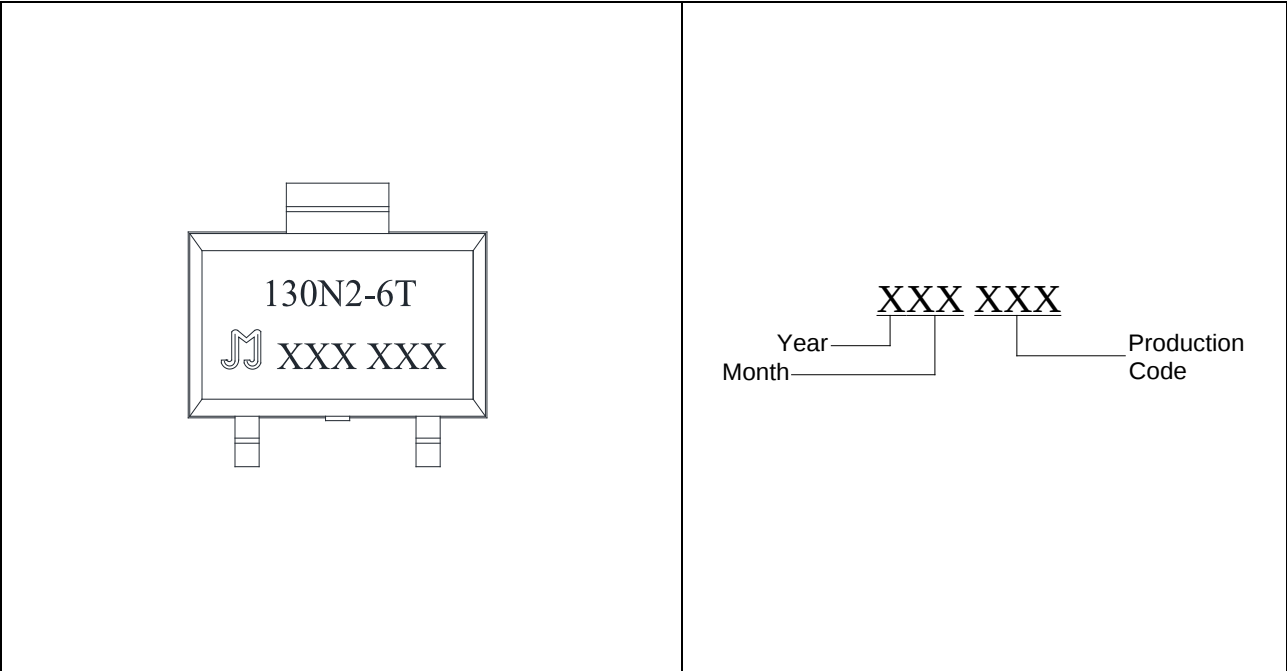


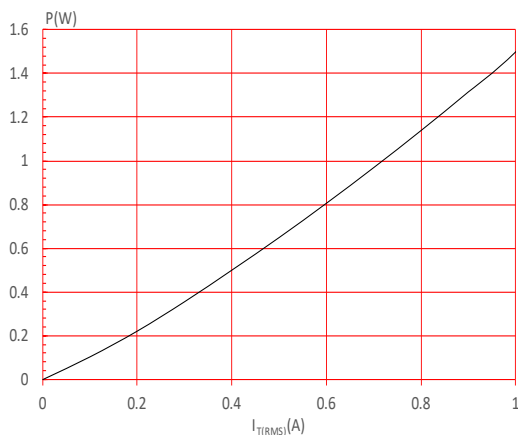
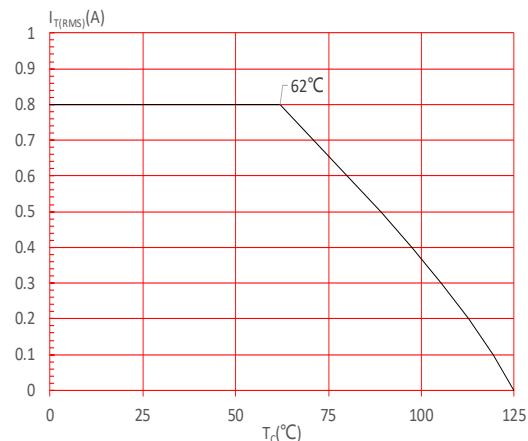
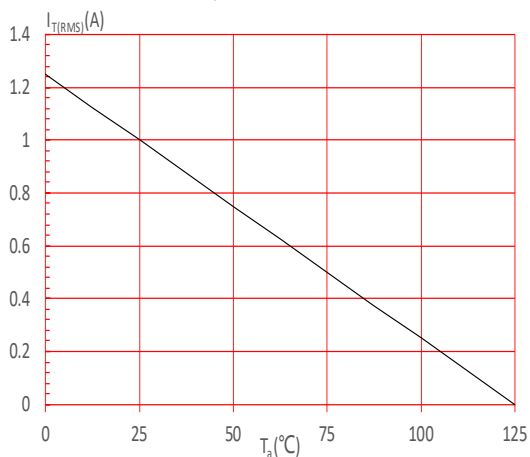
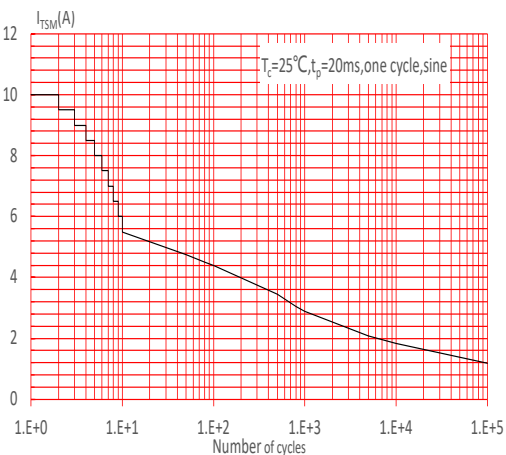
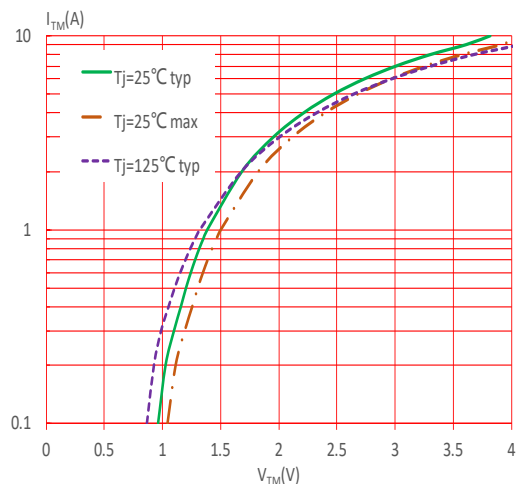
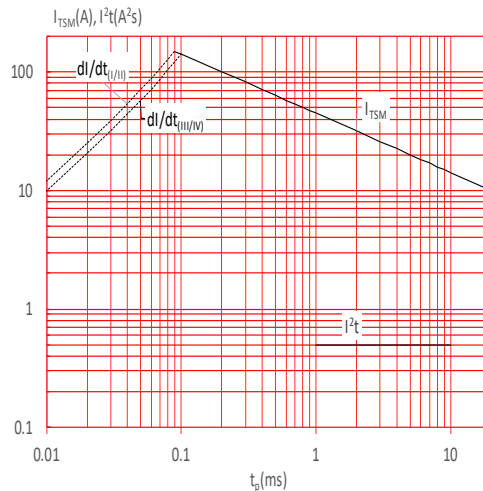
FIG.1: Maximum power dissipation versus RMS on-state current

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

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

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

FIG.5: On-state characteristics

FIG.6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t (I - II: $di/dt < 30A/\mu s$; III-IV: $di/dt < 20A/\mu s$)


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

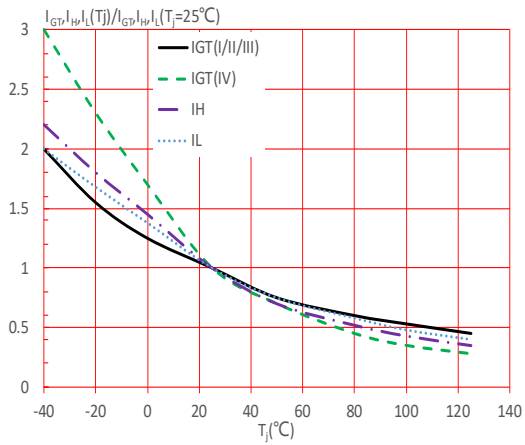
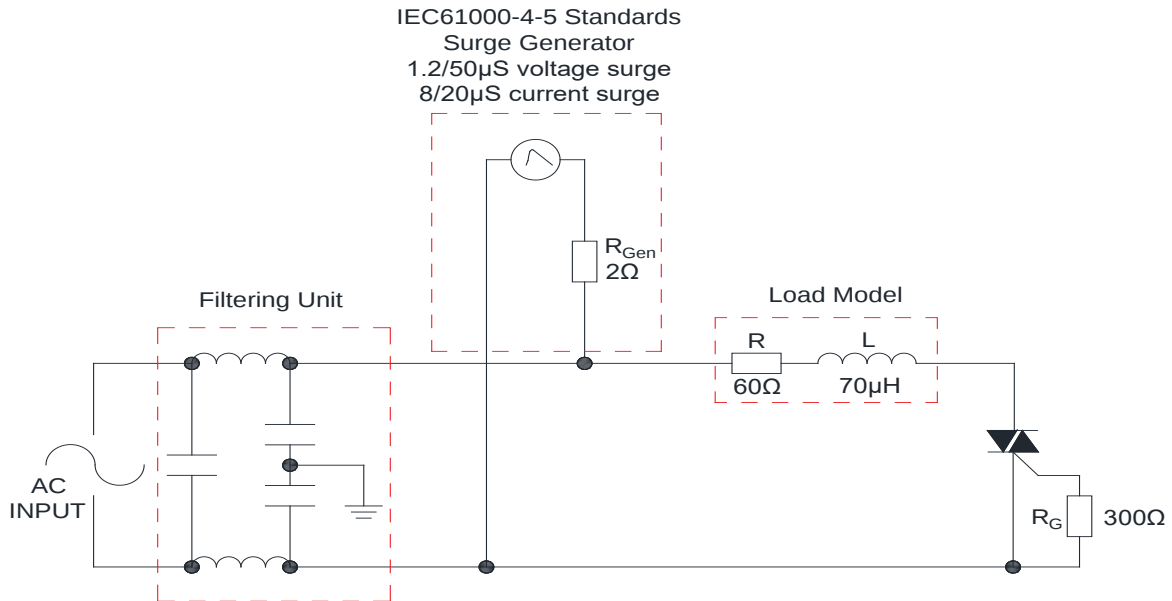
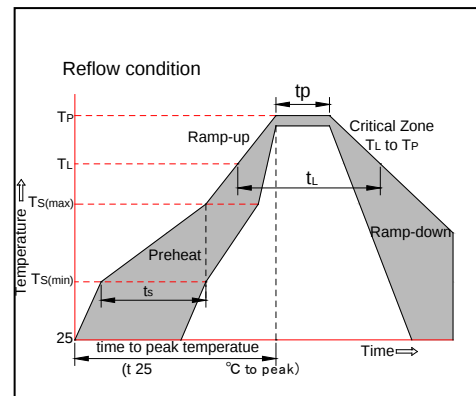


FIG.8: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



ORDERING INFORMATION

Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		I - II - III - IV			
JST130N2-600T	600	5	SOT-89-2L	4,000	Tape & Reel

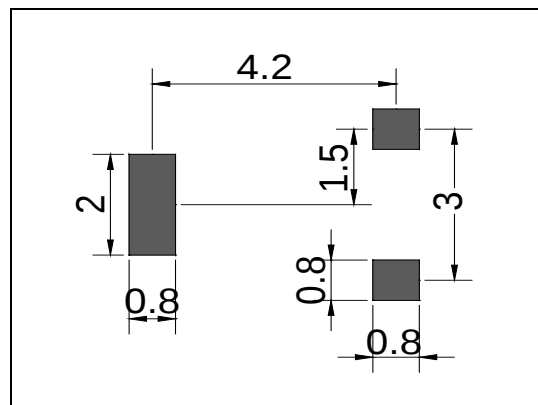
Document Revision History

Date	Revision	Changes
Apr.14, 2023	A.1.0	Last updated
Oct.16, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

Technical drawing of a rectangular box with dimensions and labels:

- A**: Height of the top flange.
- A1**: Total height of the box.
- B**: Width of the top flange.
- D**: Total width of the box.
- E**: Height of the main body.
- F**: Distance between the two side flanges.
- H**: Height of the side flange.
- J**: Total height of the box.
- K**: Width of the side flange.
- K1**: Width of the top flange.
- C**: Label for the top flange.
- G**: Label for the side flange.

FOOTPRINT-SOT-89-2L (dimensions in mm)



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
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
P2	1.90	2.00	2.10	0.075	0.079	0.082
D	-	1.50	1.60	-	0.059	0.063
D1	1.50	-	-	0.059	-	-
P0	3.90	4.00	4.10	0.154	0.157	0.161
10P0	39.80	40.00	40.20	1.567	1.575	1.583
W	-	-	12.30	-	-	0.482
P	7.90	8.00	8.10	0.311	0.315	0.319
A0	5.20	5.30	5.40	0.204	0.208	0.212
B0	4.80	4.90	5.00	0.188	0.192	0.196
K0	1.75	1.85	1.95	0.069	0.073	0.076
t	0.20	0.25	0.30	0.008	0.010	0.012
θ	3°		5°	3°		5°

PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
SOT-89-2L	TAPING	4,000	40,000	13 inch

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