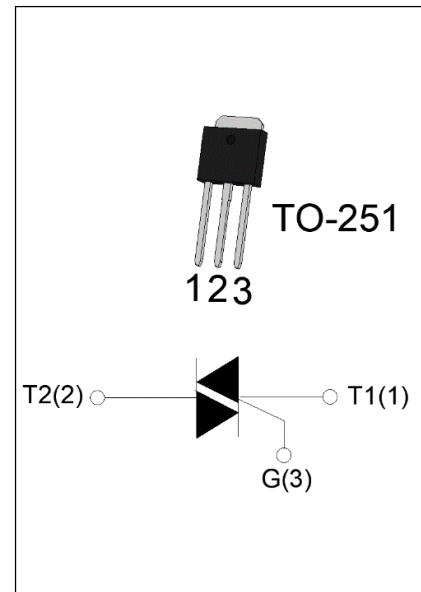


DESCRIPTION:

The SST137H-600E 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. From T2 terminals to external heatsink. Package TO-251 is RoHS compliant.


MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	600	V
$I_{GT\ I/II/III/IV}$	10/10/10/25	mA

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	°C
Operating junction temperature range	T_j	-40-125	°C
Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$)	V_{DRM}	600	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	600	V
RMS on-state current ($T_c \leq 68^\circ\text{C}$)	$I_{T(RMS)}$	8	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	65	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)		72	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	21	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100\text{Hz}$, $T_j=125^\circ\text{C}$)	I - II - III	80	$\text{A}/\mu\text{s}$
	IV	40	
Peak gate current ($t_p=20\mu\text{s}$, $T_j=125^\circ\text{C}$)	I_{GM}	4	A
Average gate power dissipation ($T_j=125^\circ\text{C}$)	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	10	W
Peak pulse voltage ($T_j=25^\circ\text{C}$; non-repetitive, off-state; FIG.7)	V_{pp}	4	kV

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

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	I - II -III	MAX.	10	mA
		IV		25	
V_{GT}		ALL	MAX.	1	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.	20	mA
		II		35	
I_H	$I_T=500\text{mA}$		MAX.	20	mA
dV/dt	$V_D=400\text{V}$ Gate Open $T_j=125^\circ\text{C}$		MIN.	250	V/ μs
(dV/dt) _c	(dI/dt) _c =2.7A/ms, $T_j=125^\circ\text{C}$		MIN.	5	V/ μs
t_{on}	$I_G=40\text{mA } I_A=200\text{mA } I_R=20\text{mA}$ $T_j=25^\circ\text{C}$		TYP.	1.5	μs
t_{off}				15	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=10\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.5	V
V_{TO}	Threshold voltage	$T_j=125^\circ\text{C}$	0.8	V
R_D	Dynamic resistance	$T_j=125^\circ\text{C}$	53	m Ω
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	μA
I_{RRM}		$T_j=125^\circ\text{C}$	0.35	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	5	$^\circ\text{C/W}$
$R_{th(j-a)}$	junction to ambient (AC)	130	$^\circ\text{C/W}$

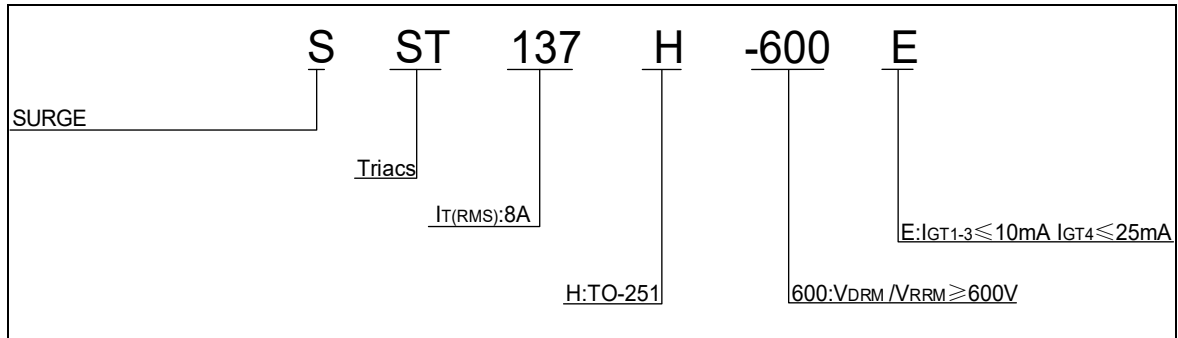
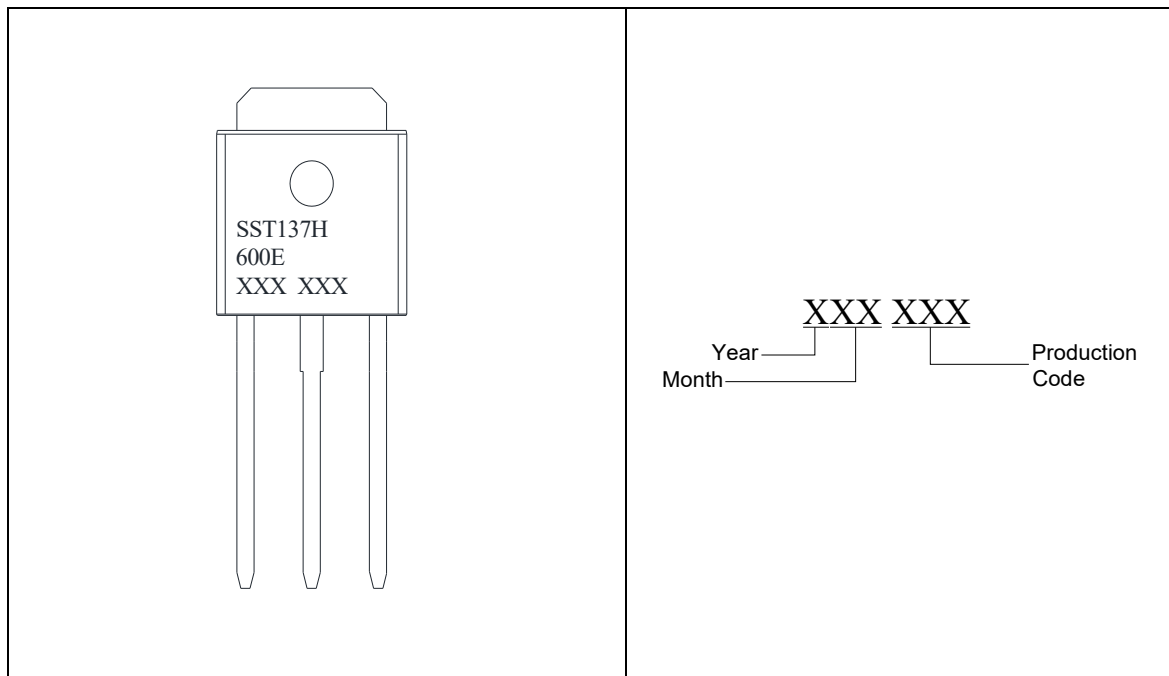
ORDERING INFORMATION

MARKING


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

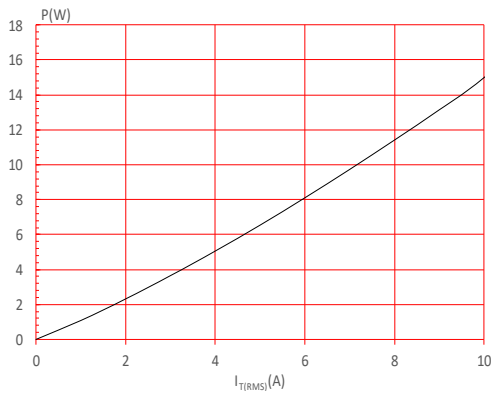


FIG.2: RMS on-state current versus case temperature

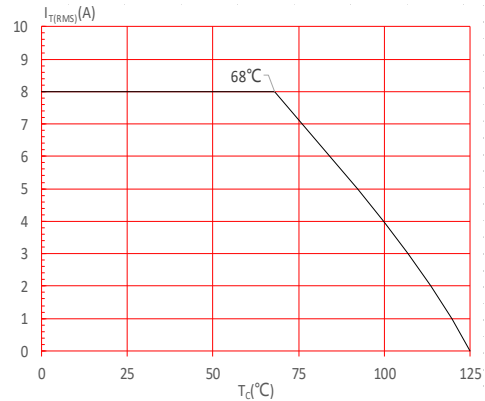


FIG.3: Surge peak on-state current versus number of cycles

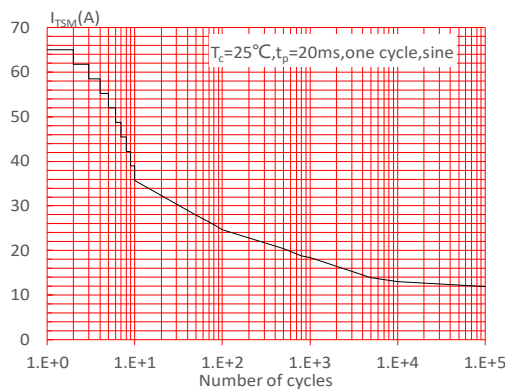


FIG.4: On-state characteristics

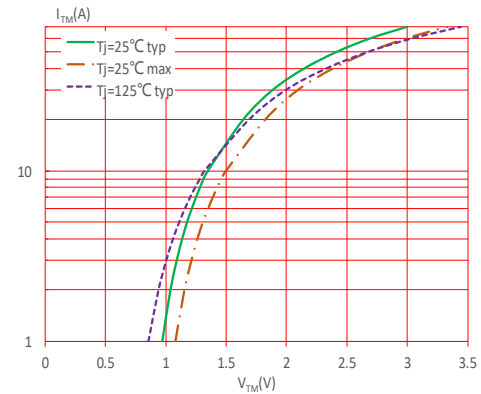


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t (I - II -III: $di/dt < 80\text{A}/\mu\text{s}$; IV: $di/dt < 40\text{A}/\mu\text{s}$)

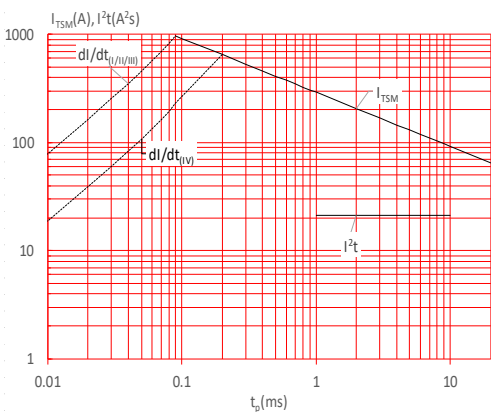


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

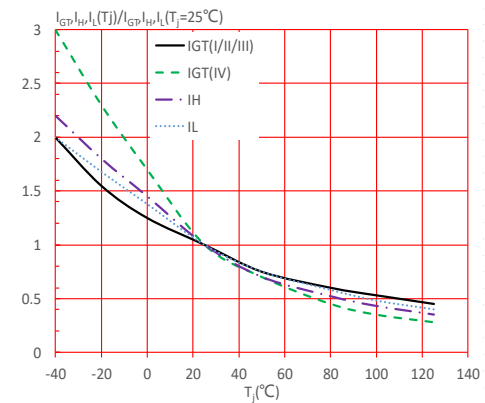
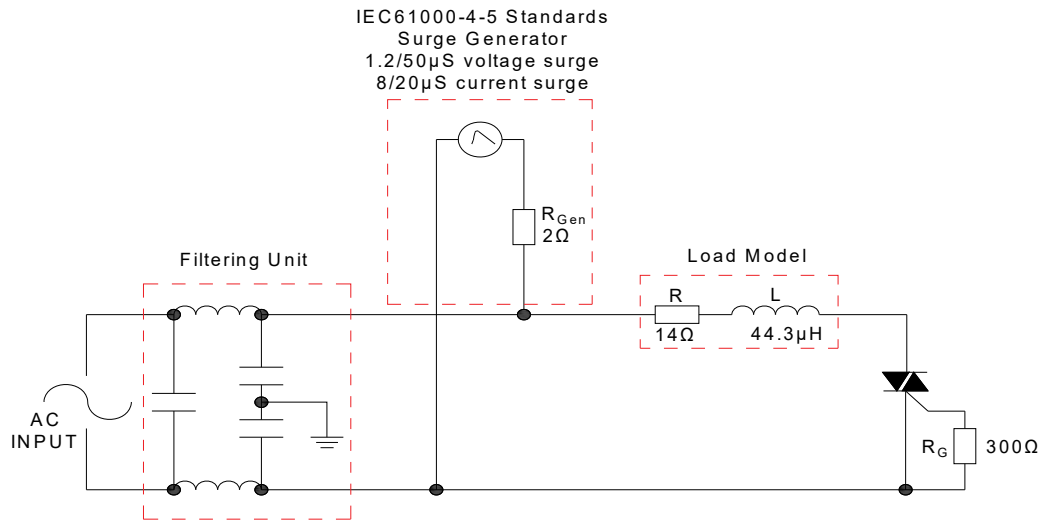


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



LEAD FORMING AND SOLDERING

Refer to the application note “Assembly Instructions for Thyristors in Through-hole Package”

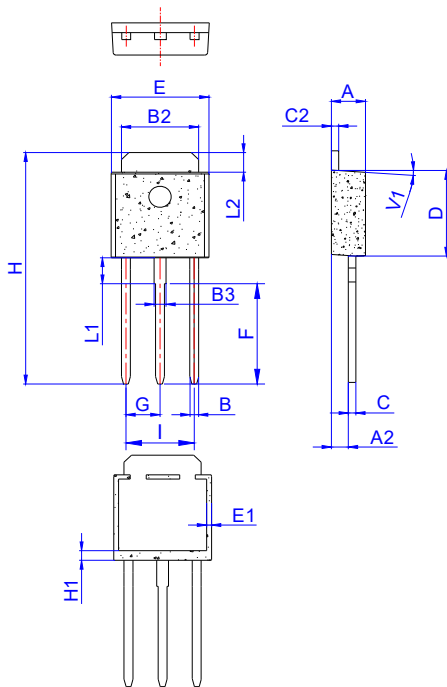
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		I - II - III	IV			
SST137H-600E	600	10	25	TO-251	80	Tube

Document Revision History

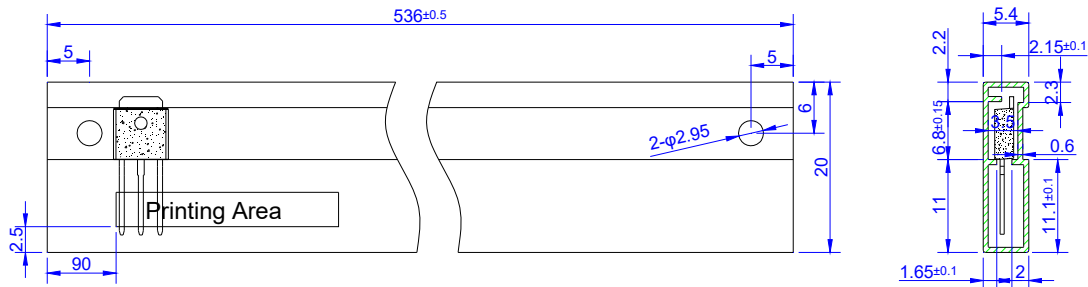
Date	Revision	Changes
Apr.14, 2023	A.1.0	Last updated
Oct.24, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	1.00		1.30	0.039		0.051
B	0.50		0.70	0.020		0.028
B2	5.10		5.40	0.200		0.213
B3	0.70		1.00	0.028		0.039
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
E1	0.60		1.00	0.024		0.039
F	6.90		7.30	0.272		0.287
G	2.20		2.40	0.087		0.094
H	16.00		17.00	0.630		0.669
H1	1.45		1.85	0.057		0.073
I	4.40		4.80	0.173		0.189
L1	1.80		2.20	0.071		0.087
L2	1.25		1.55	0.049		0.061
V1		4°			4°	

DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-251	TUBE	80	4,000	20,000

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