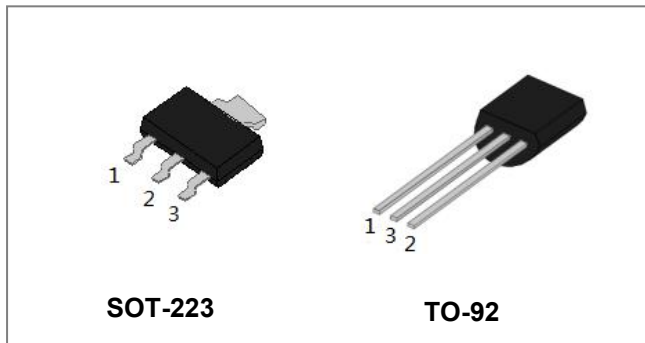
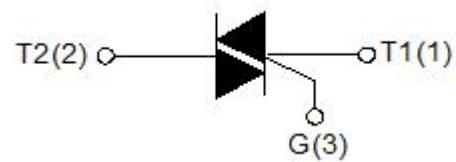


## SST131 Series 1A TRIACs



### Circuit Diagram



### Description

With low holding and latching current, SST131 series triacs are especially recommended for use on middle and small resistance type power load.

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
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
Non repetitive surge peak off-state voltage	$V_{DSM}$	-	$V_{DRM}+100$	V
Non repetitive peak reverse voltage	$V_{RSM}$	-	$V_{RRM}+100$	V
RMS on-state current	$I_{(TRMS)}$	TO-92( $T_c=50^\circ\text{C}$ ) SOT-223( $T_c=70^\circ\text{C}$ )	1	A
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$ )	$I_{TSM}$	-	16	A
$I^2t$ value for fusing ( $t_p=10\text{ms}$ )	$I^2t$	-	1.28	$\text{A}^2\text{s}$
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ )	$di/dt$	-	20	$\text{A}/\mu\text{s}$
Peak gate current	$I_{GM}$	-	2	A
Average gate power dissipation	$P_{GM}$	-	0.5	W
Peak gate power	$P_{G(AV)}$	-	5	W

**Electrical Characteristics** ( $T_j=25^\circ\text{C}$  unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
			T	D	
$I_{GT}$	$V_D=12\text{V } R_L=33\Omega$	I - II - III	5	5	mA
		IV	5	10	
$V_{GT}$		ALL	1.3		V
$V_{GD}$	$V_D=V_{DRM} T_j=125^\circ\text{C } R_L=3.3\text{K}\Omega$	ALL	0.2		V
$I_L$	$I_G=1.2I_{GT}$	I - III	5	5	mA
		II - IV	10	20	
$I_H$	$I_T=200\text{mA}$	MAX	5	7	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$	MIN	15	50	V/ $\mu\text{s}$

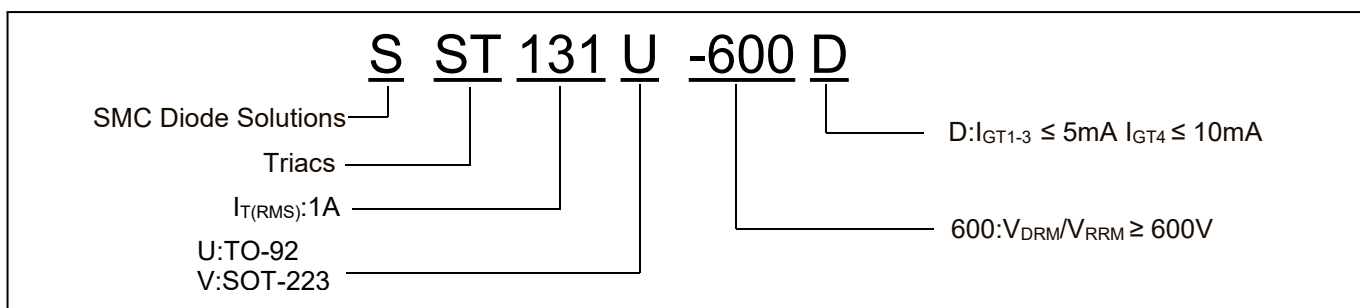
**Static Characteristics**

Symbol	Condition	Max.	Units
$V_{TM}$	$I_T=1.4\text{A } t_p=380\mu\text{s}, T_j=25^\circ\text{C}$	1.5	V
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}, T_j=25^\circ\text{C}$	5	$\mu\text{A}$
$I_{RRM}$	$V_D=V_{DRM} V_R=V_{RRM}, T_j=125^\circ\text{C}$	500	$\mu\text{A}$

**Thermal Resistances**

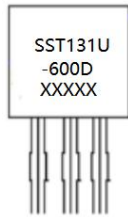
Symbol	Condition	Value	Units
$R_{th(j-c)}$	Junction to case(AC)	TO-92	60
		SOT-223	31

**Ordering Information**



Device	Package	Shipping
SST131U-600D	TO-92	2000pcs/ reel
SST131U-600DTR	TO-92	2000pcs/ reel
SST131V-600D	SOT-223	8000pcs/ reel
SST131V-600DTR	SOT-223	8000pcs/ reel

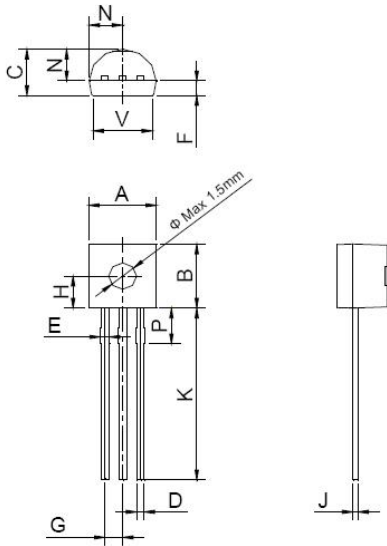
## Marking Diagram



Where XXXXX is YYWWL

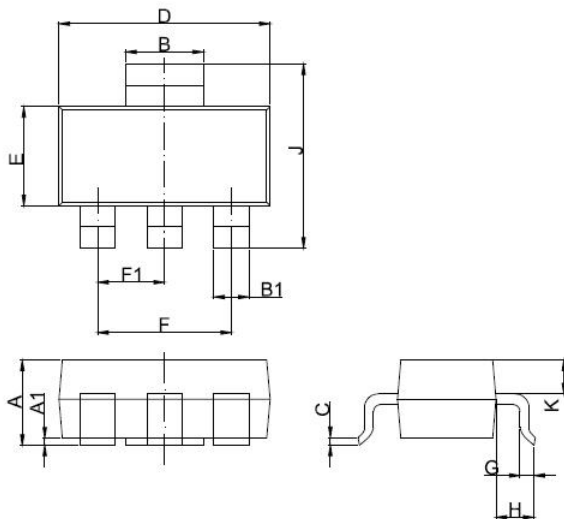
SST131U/V-600D = Part name  
YY = Year  
WW = Week  
L = Lot Number

## Mechanical Dimensions TO-92



SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45	-	5.20	0.175	-	0.205
B	4.32	-	5.33	0.170	-	0.210
C	3.18	-	4.19	0.125	-	0.165
D	0.407	-	0.533	0.016	-	0.021
E	0.60	-	0.80	0.024	-	0.031
F	-	1.1	-	-	0.043	-
G	-	1.27	-	-	0.050	-
H	-	2.30	-	-	0.091	-
J	0.36	-	0.50	0.014	-	0.020
K	12.70	-	15.0	0.500	-	0.591
N	2.04	-	2.66	0.080	-	0.105
P	1.86	-	2.06	0.073	-	0.081
V	-	-	4.3	-	-	0.169

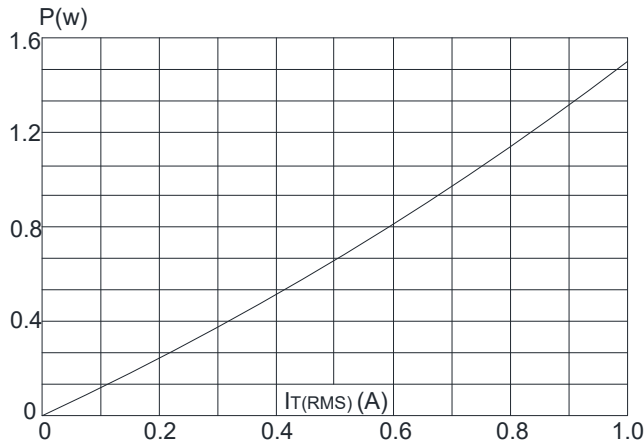
## Mechanical Dimensions SOT-223



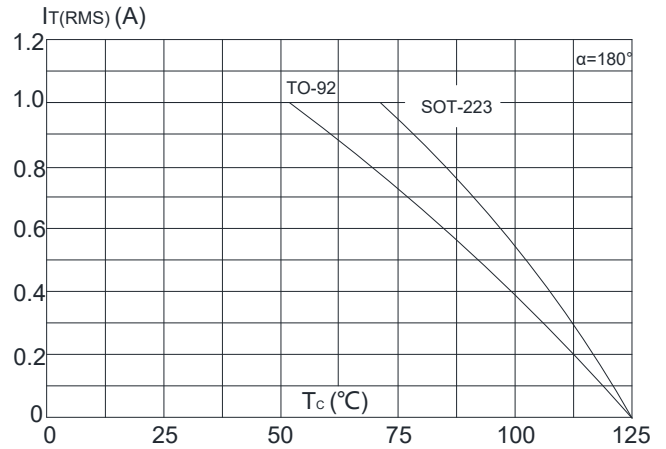
SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	0.146
F		4.6			0.181	
F1		2.3			0.091	
G	0.7	0.9	1.1	0.028	0.035	0.043
H	1.50	1.5	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

**Ratings and Characteristics Curves**

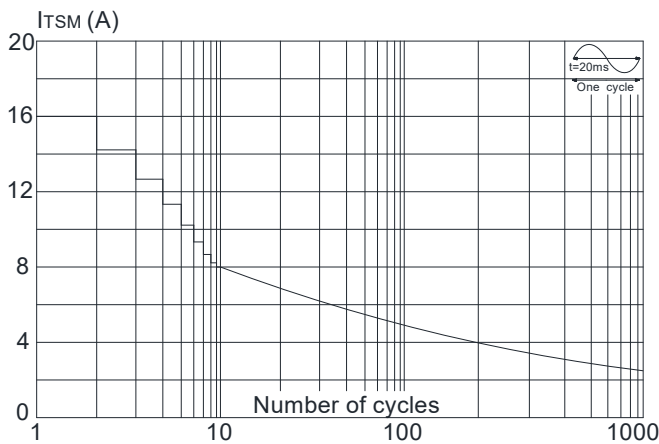
**FIG.1:** Maximum power dissipation versus RMS on-state current



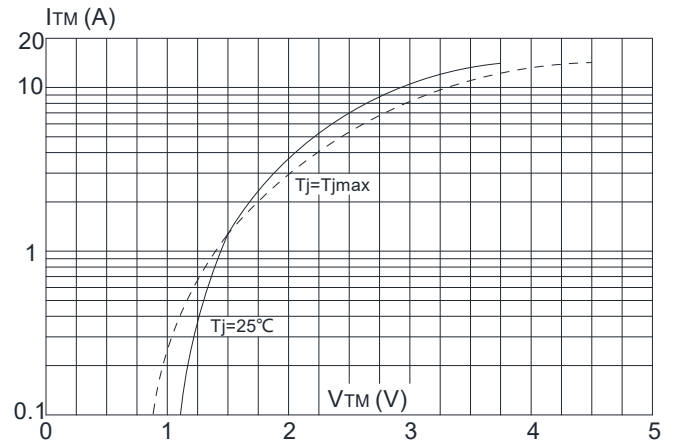
**FIG.2:** RMS on-state current versus case temperature



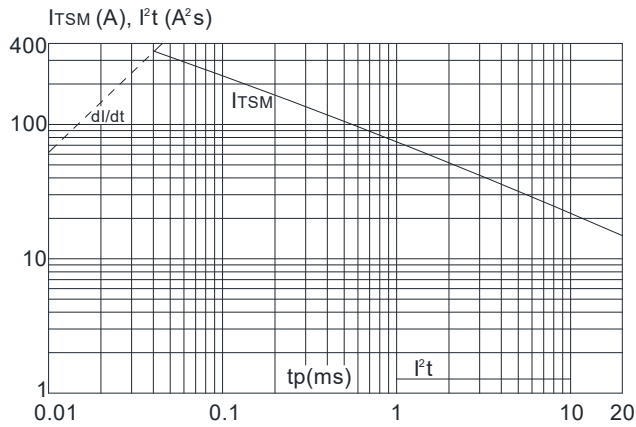
**FIG.3:** Surge peak on-state current versus number of cycles



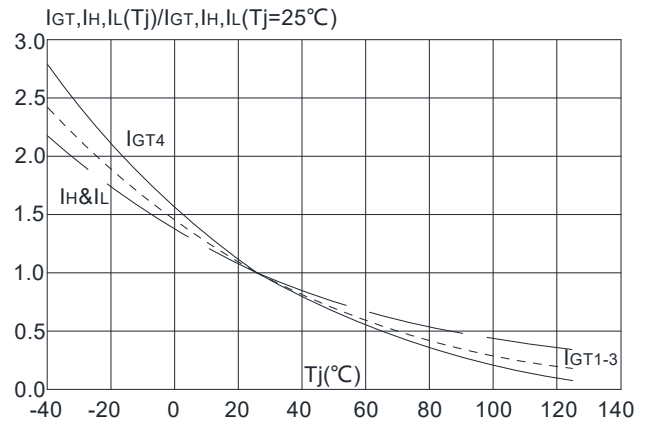
**FIG.4:** On-state characteristics (maximum values)



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



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





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