JST01 Series 1A TRIACs

Rev.1.0

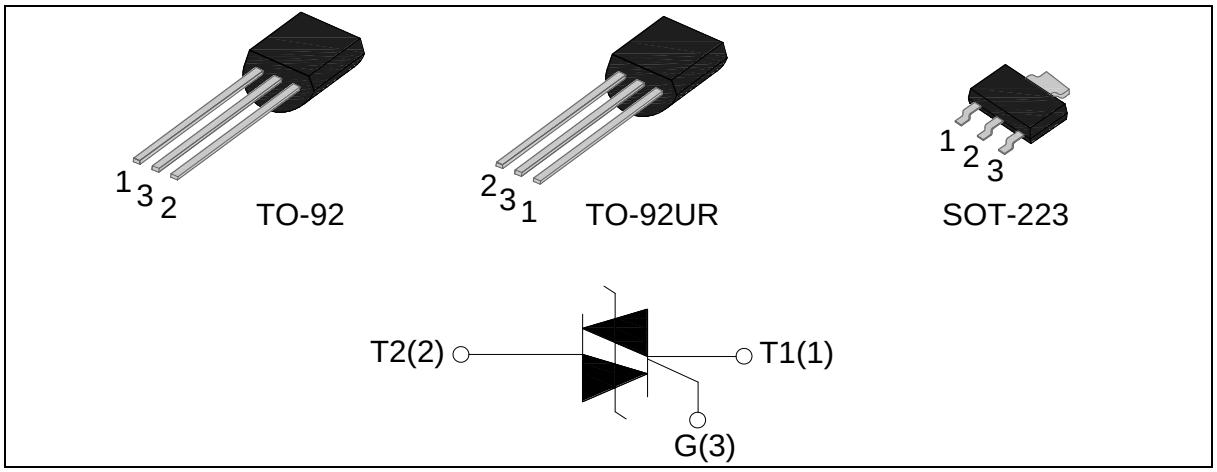
DESCRIPTION:

JST01 series provide high dv/dt rate with strong resistance to electromagnetic interface.

They are especially recommended for use on home appliances such as motor control of washing machine, and for use on industrial control systems like electromagnetic valves.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
I_{GT1-3}	10	mA
V_{DRM}/V_{RRM}	800 and 1000	V



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}	800/1000	V
Repetitive peak reverse voltage(T_j=25℃)		V_{RRM}	800/1000	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	TO-92/ TO-92UR (T_C=57℃)	$I_{T(RMS)}$	1	A
	SOT-223(T_C=90℃)			

Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	15	A
I^2t value for fusing (tp=10ms)	I^2t	1.25	A^2s
Rate of rise of on-state current (I_G =2×I_{GT})	dI/dt	50	A/μs
Peak gate current	I_{GM}	1	A
Average gate power dissipation	$P_{G(AV)}$	0.1	W
Peak gate power	P_{GM}	0.5	W

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	V_D=12V R_L=33Ω	Ⅰ-Ⅱ-Ⅲ	MAX	10	mA
V_{GT}		Ⅰ-Ⅱ-Ⅲ	MAX	1.3	V
V_{GD}	V_D=V_{DRM} T_j=125℃ R_L=3.3KΩ	Ⅰ-Ⅱ-Ⅲ	MIN	0.2	V
I_L	I_G=1.2I_{GT}	Ⅰ-Ⅲ	MAX	20	mA
		Ⅱ		40	
I_H	I_T=100mA		MAX	15	mA
dV/dt	V_D=2/3V_{DRM}Gate Open T_j=125℃		MIN	200	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM}=2A tp=380μs	T_j=25℃	1.5	V
I_{DRM}	V_D=$V_{DRM}$$V_R$=$V_{RRM}$	T_j=25℃	5	μA
I_{RRM}		T_j=150℃	1	mA

THERMAL RESISTANCES

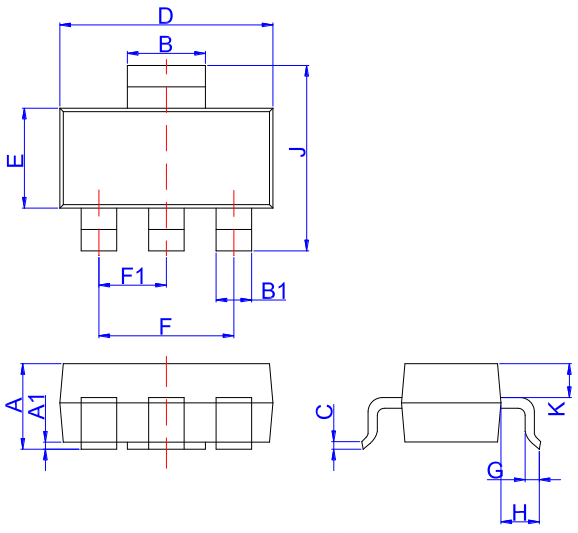
Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-92/ TO-92UR	23	℃/W
		SOT-223	9.5	

ORDERING INFORMATION

J ST 01 U -800 SW

- J: JieJie Microelectronics Co.,Ltd
- ST: Triacs
- 01: $I_{T(RMS)}$:1A
- U: TO-92; V: SOT-223; UR: TO-92UR
- -800: 800:V_{DRM} /V_{RRM}≥800V; 1000:V_{DRM} /V_{RRM}≥1000V
- SW: I_{GT1-3}≤10mA

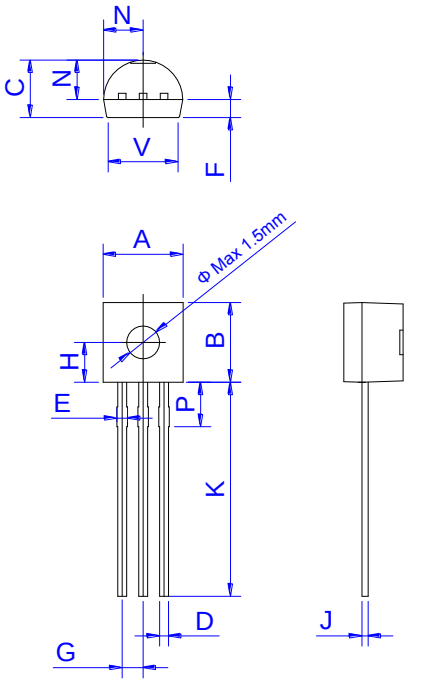
PACKAGE MECHANICAL DATA



SOT-223

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	0.06	0.10	0	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	1.5	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

PACKAGE MECHANICAL DATA



TO-92/TO-92UR

Ref.	Dimensions					
	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

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

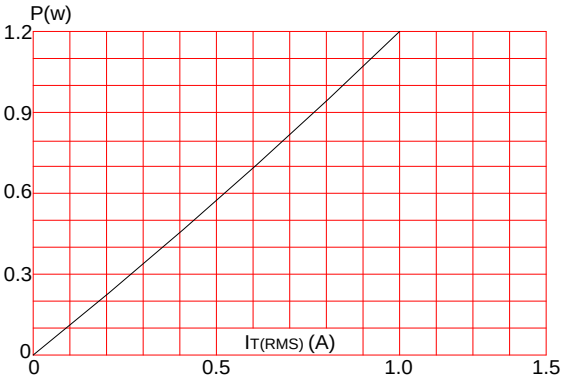


FIG.2: RMS on-state current versus case temperature

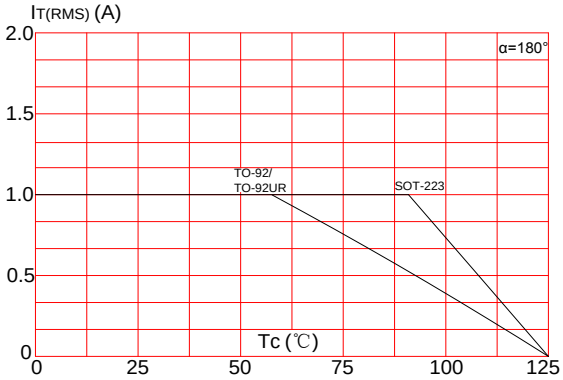


FIG.3: Surge peak on-state current versus number of cycles

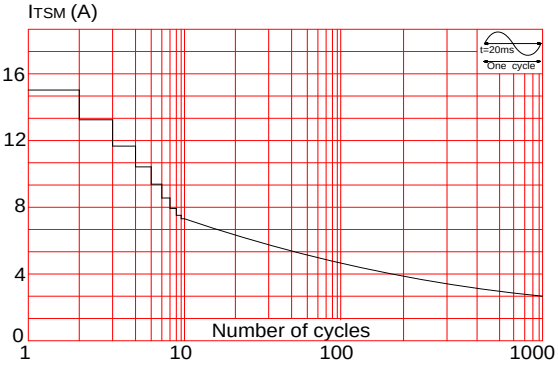


FIG.4: On-state characteristics (maximum values)

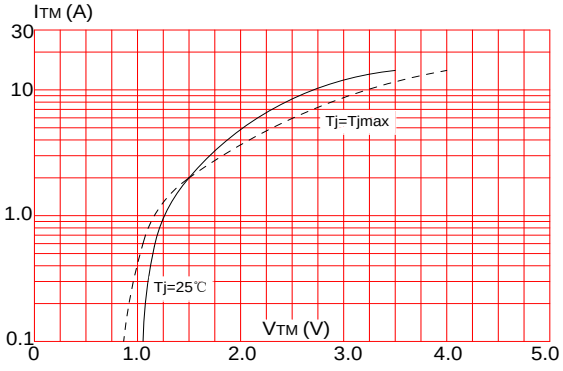


FIG.5: Relative variations of gate trigger current versus junction temperature

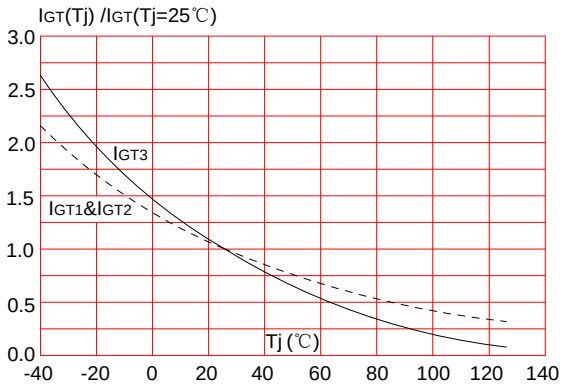


FIG.6: Relative variations of holding current, latching curretn versus junction temperature