

JST41T Series 41A TRIACs

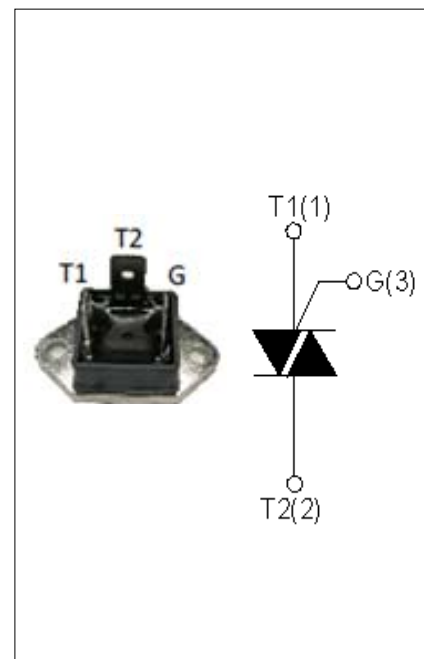
Rev.4.1 Sept.27 2019

DESCRIPTION:

JST41T series triacs, with high ability to withstand the shock loading of large current, provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products especially recommended for use on inductive load.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	41	A
V_{ISO}	2500	V
V_{DRM}/V_{RRM}	600 and 800 and 1200 and 1600	V



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage 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 /800/1200/1600	V
Repetitive peak reverse voltage ($T_j=25^{\circ}\text{C}$)	V_{RRM}	600 /800/1200/1600	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 TG-C ($T_c=90^{\circ}\text{C}$)	$I_{T(RMS)}$	41	A
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$)	I_{TSM}	400	A
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	880	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	50	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W
Insulation voltage(A.C, $F=50\text{Hz}$,1min)	V_{ISO}	2500	V

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

3 Quadrants

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	I - II -III	MAX	50	mA
V_{GT}		I - II -III	MAX	1.3	V
V_{GD}	$V_D=V_{DRM} T_j=125^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$	I - II -III	MIN	0.2	V
I_L	$I_G=1.2I_{GT}$	I -III	MAX	80	mA
		II		100	
I_H	$I_T=100\text{mA}$		MAX	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	1000	V/ μs
$(dV/dt)_c$	Without snubber $T_j=125^{\circ}\text{C}$		MIN	20	V/ μs

4 Quadrants

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	I - II -III	MAX	50	mA
		IV		70	
V_{GT}		ALL	MAX	1.5	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	90	mA
		II		100	
I_H	$I_T=100\text{mA}$		MAX	80	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	500	V/ μs
$(dV/dt)_c$	Without snubber $T_j=125^{\circ}\text{C}$		MIN	30	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=60A$ $t_P=380\mu s$	$T_j=25^{\circ}C$	1.55	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}C$	0.85	V
R_d	Dynamic resistance	$T_j=125^{\circ}C$	9	mΩ
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}C$	10	μA
I_{RRM}		$T_j=125^{\circ}C$	5	mA

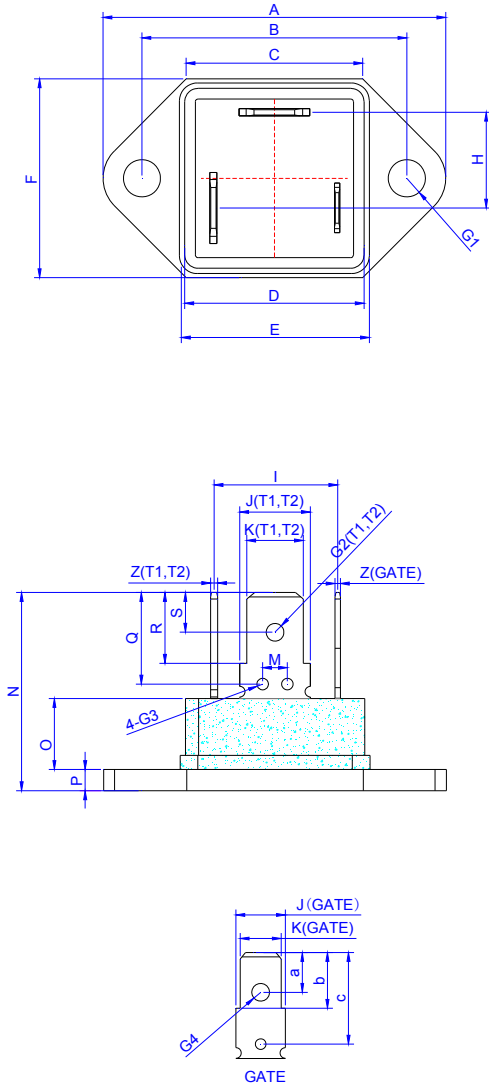
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TG-C	1.45	°C/W
$R_{th(j-a)}$	junction to ambient(AC)	TG-C	5.9	°C/W
	Mounting torque(M4) Recommended value 1.0~1.4(10~14)		1.5(15)	N·m

ORDERING INFORMATION

JieJie Microelectronics Co.,Ltd JieJie Semiconductor Co.,Ltd	J	ST	41	T	-600	BW
	Triacs	$I_{T(RMS)}:41A$	T:TG-C			BW: $I_{GT1-3} \leq 50mA$ B: $I_{GT1-3} \leq 50mA$ $I_{GT4} \leq 70mA$ 600: $V_{DRM}/V_{RRM} \geq 600V$ 800: $V_{DRM}/V_{RRM} \geq 800V$ 1200: $V_{DRM}/V_{RRM} \geq 1200V$ 1600: $V_{DRM}/V_{RRM} \geq 1600V$

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			39.2			1.543
B	29.8	30.0	30.2	1.173	1.181	1.189
C			20.2			0.795
D			20.5			0.807
E			21.6			0.85
F			23			0.905
G1	Φ4.1	Φ4.2	Φ4.3	Φ0.161	Φ0.165	Φ0.169
H		10.3			0.406	
I		13.9			0.547	
J(T1,T2)		8			0.315	
K(T1,T2)		6.4			0.252	
M	2.7	3.0	3.3	0.106	0.118	0.130
N			22.8			0.898
O		8.2			0.323	
P		2.5			0.098	
Q	9.45	9.75	10.1	0.374	0.383	0.398
R	7.8	7.95	8.1	0.307	0.313	0.319
S	4.3	4.5	4.7	0.169	0.177	0.185
Z(T1,T2)	0.78	0.8	0.85	0.0307	0.0315	0.0335
G2(T1,T2)		Φ2	Φ2.2		Φ0.079	Φ0.087
G3	Φ1.1	Φ1.3	Φ1.5	Φ0.043	Φ0.051	Φ0.059
G4		Φ1.55	Φ1.75		Φ0.061	Φ0.069
a	2.95	3.15	3.35	0.116	0.124	0.132
b	6.2	6.35	6.5	0.244	0.25	0.256
c	9.35	9.75	10	0.368	0.384	0.393
Z(GATE)	0.58	0.6	0.65	0.0228	0.0236	0.0256
J(GATE)		5.6			0.221	
K(GATE)		4.65			0.183	

PACKAGE INFORMATION-TG-C

OUTLINE	UNIT WEIGHT (g/PCS) typ.	INNER BOX (PCS)	PER CARTON (PCS)	PER CARTON WEIGHT(Kg)	PER CARTON SIZE(cm)
BOX	21.5	80	720	18	53×37.5×27



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

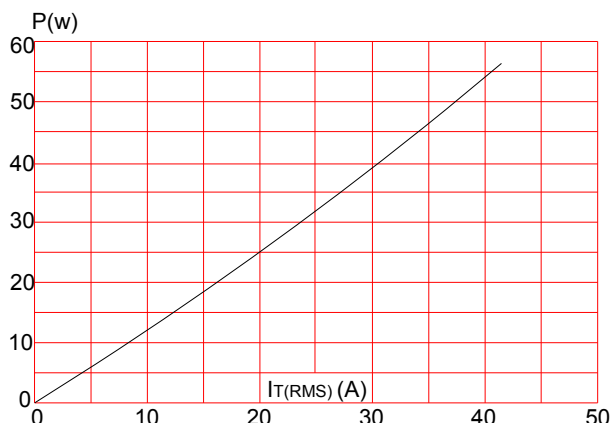


FIG.3: Surge peak on-state current versus number of cycles

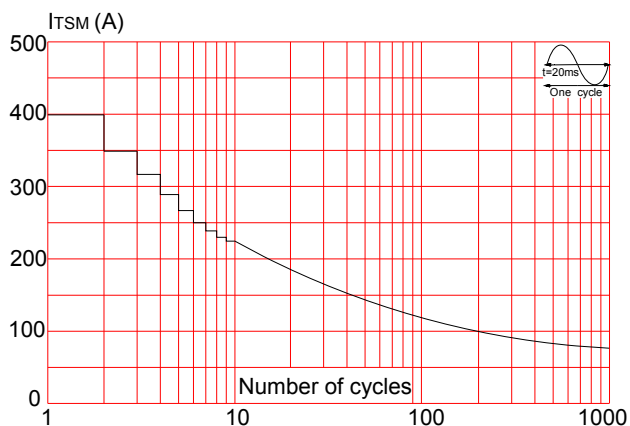


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of $I^2t(dI/dt < 50\text{A}/\mu\text{s})$

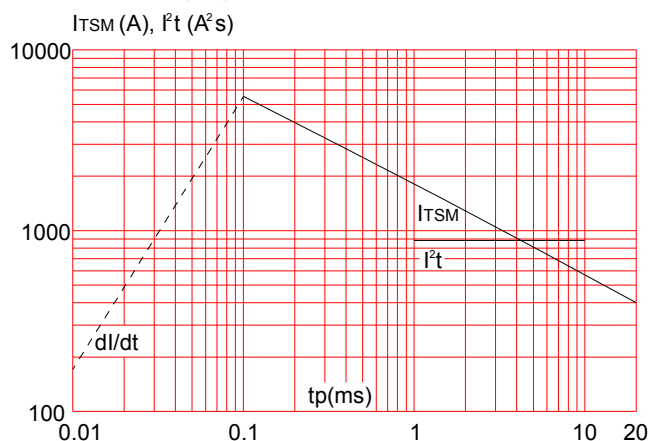


FIG.2: RMS on-state current versus case temperature

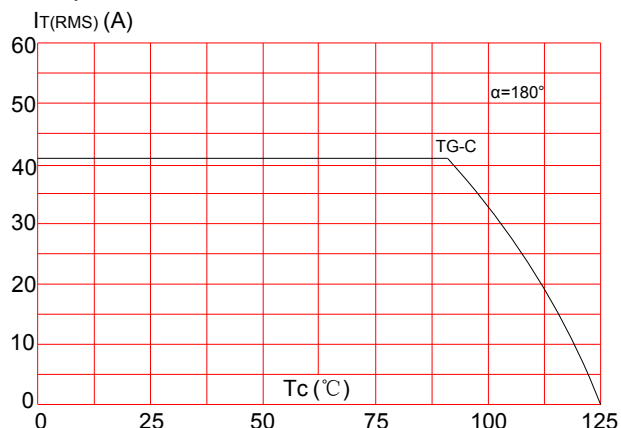


FIG.4: On-state characteristics (maximum values)

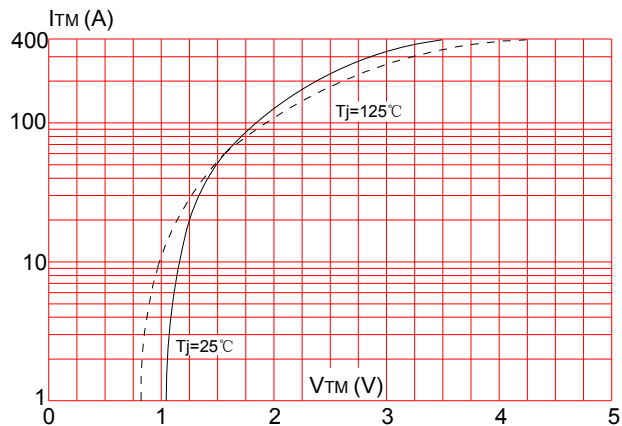
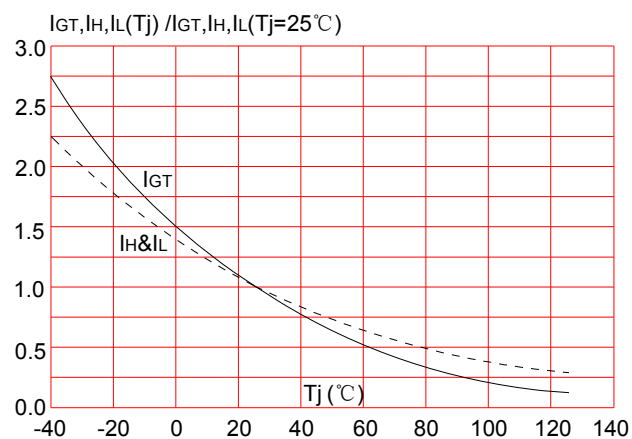


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co.,Ltd & JieJie Semiconductor Co.,Ltd assumes no responsibility for the consequences of use without consideration for such information nor use beyond it.

Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement.

Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information.

This document is the 4.1st version which is made in 27-Sept.-2019. This document supersedes and replaces all information previously supplied.



& are registered trademarks of Jiangsu JieJie Microelectronics Co.,Ltd & JieJie Semiconductor Co.,Ltd. Copyright ©2019 Jiangsu JieJie Microelectronics Co.,Ltd & JieJie Semiconductor Co.,Ltd. Printed All rights reserved.