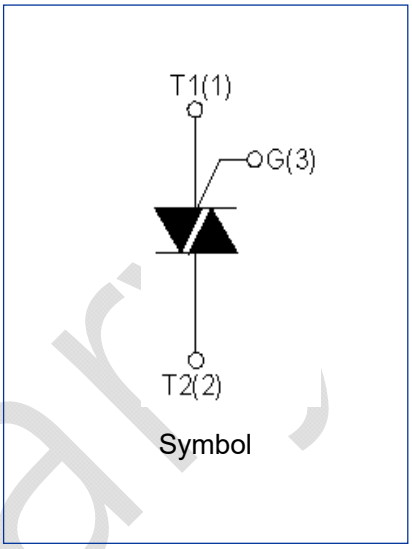
JJMICROELECTRONICS

JST41TW Series

41A TRIACs



Symbol

DESCRIPTION

JST41TW 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, 800, 1200, and 1600	V

ABSOLUTE MAXIMUM RATING (Rating at T_A=25℃ unless otherwise specified.)

Parameter		Symbol	Value	Unit
Storage temperature range		T_{STG}	-40-150	℃
Operating junction temperature range		T_J	-40-125	℃
Repetitive peak off-state voltage		V_{DRM}	600/800/1200/1600	V
Repetitive peak reverse voltage		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℃)	$I_{T(RMS)}$	41	A
Non repetitive surge peak on-state current	full cycle, F=50Hz	I_{TSM}	400	A
I^2t value for fusing	t_P=10ms	I^2t	880	A^2s
Critical rate of rise of on-state current	I_G =2×I_{GT}	di/dt	50	A/μs
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=50Hz,1min	V_{ISO}	2500	V

ELECTRICAL CHARACTERISTICS (Rating at T_A=25℃ unless otherwise specified.)

3 Quadrants

Parameter	Test Condition		Symbol	Min.	Typ.	Max.	Unit
Triggering gate current	V_D =12V,R_L =33Ω	Ⅰ-Ⅱ-Ⅲ	I_{GT}	-	-	50	mA
Triggering gate voltage		Ⅰ-Ⅱ-Ⅲ	V_{GT}	-	-	1.3	V
Non triggering gate voltage	V_D =V_{DRM},T_J=125℃ R_L =3.3KΩ	Ⅰ-Ⅱ-Ⅲ	V_{GD}	0.2	-	-	V
Latching current	I_G =1.2I_{GT}	Ⅰ-Ⅲ	I_L	-	-	80	mA
		Ⅱ		-	-	100	
Holding current	I_T =100mA		I_H	-	-	60	mA
Critical rate of rise of voltage	V_D=2/3V_{DRM},Gate Open,T_J=125℃		dv/dt	1000	-	-	V/μs
	Without snubber, T_J=125℃		(dv/dt)c	20	-	-	V/μs

4 Quadrants

Parameter	Test Condition		Symbol	Min.	Typ.	Max.	Unit
Triggering gate current	V_D =12V,R_L =33Ω	Ⅰ-Ⅱ-Ⅲ	I_{GT}	-	-	50	mA
		Ⅳ		-	-	70	
Triggering gate voltage		All	V_{GT}	-	-	1.5	V
Non triggering gate voltage	V_D =V_{DRM},T_J=125℃ R_L =3.3KΩ	All	V_{GD}	0.2	-	-	V
Latching current	I_G =1.2I_{GT}	Ⅰ-Ⅲ-Ⅳ	I_L	-	-	90	mA
		Ⅱ		-	-	100	
Holding current	I_T =100mA		I_H	-	-	80	mA
Critical rate of rise of voltage	V_D=2/3V_{DRM},Gate Open,T_J=125℃		dv/dt	500	-	-	V/μs
	Without snubber, T_J=125℃		(dv/dt)c	30	-	-	V/μs

STATIC CHARACTERISTICS

Parameter	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Peak on-state voltage	I_{TM}=60A,t_P=380μs,T_J=25℃	V_{TM}	-	-	1.55	V
Threshold voltage	T_J=125℃	V_{TO}	-	-	0.85	V
Dynamic resistance	T_J=125℃	R_d	-	-	9	mΩ
Repetitive peak off-state current	V_D =V_{DRM},T_J=25℃	I_{DRM}	-	-	10	μA
Repetitive peak reverse current	V_R =V_{RRM},T_J=125℃	I_{RRM}	-	-	5	mA

THERMAL RESISTANCES

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{th(j-c)}$	Thermal resistance from junction to case	-	1.45	-	℃/W
	Mounting torque(M4) Recommended value 1.0~1.4	-	-	1.5	N·m

PART NUMBER INFORMATION

J — JieJie Microelectronics Co., Ltd. / JieJie Semicoductor Co., Ltd.

ST — Triacs

41 — $I_{T(RMS)}$:41A

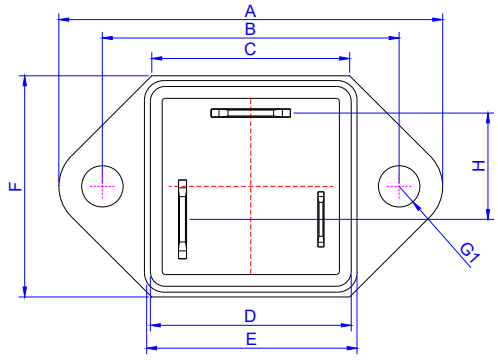
T — T:TG-C

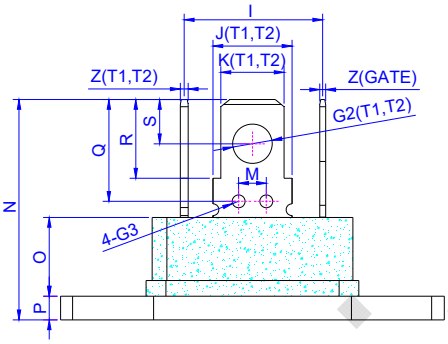
W — T1, T2 terminals: φ4mm

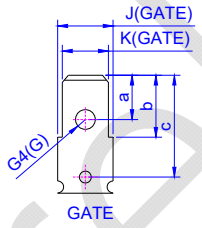
-600 — 600:V_{DRM}/V_{RRM}≥600V; 800:V_{DRM}/V_{RRM}≥800V; 1200:V_{DRM}/V_{RRM}≥1200V; 1600:V_{DRM}/V_{RRM}≥1600V

BW — BW:I_{GT1-3}≤50mA; B:I_{GT1-3}≤50mA I_{GT4}≤70mA

PACKAGE MECHANICAL DATA







technical requirements：
1、Maximum torque to be applied to mounting tab is 8 in-lbs (0.904Nm)；
2、Maximum external force perpendicular to the terminal surface is 3Kg。

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			0.906
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	0.372	0.384	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)		0.8			0.032	
G2(T1,T2)	Φ3.8	Φ4	Φ4.2	**Φ0.150**	**Φ0.157**	**Φ0.165**
G3	Φ1.1	Φ1.3	Φ1.5	Φ0.043	Φ0.051	Φ0.059
G4(G)		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	9.45	9.75	10.1	0.372	0.384	0.398
Z(GATE)		0.8			0.0315	
J(GATE)		5.6			0.220	
K(GATE)		4.65			0.183	

PACKAGE INFORMATION-TG-C

OUTLINE	UNIT WEIGHT (g/PCS) typ.	TUBE (PCS)	INNER BOX (PCS)	PER CARTON (PCS)	PER CARTON WEIGHT(Kg)	PER CARTON SIZE(cm)
BOX	22	10	100	500	15	46x26.5x18

CHARACTERITICS CURVE

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

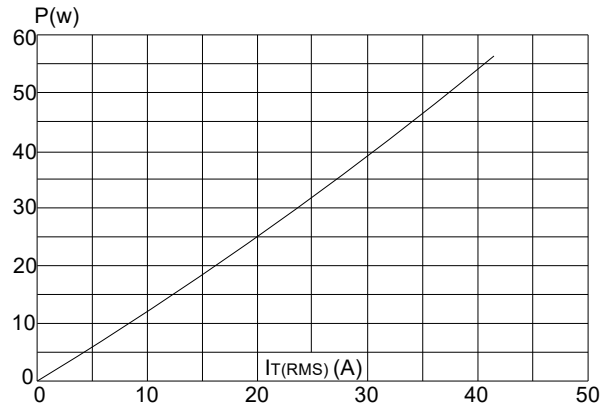


FIG. 2: RMS on-state current versus case temperature

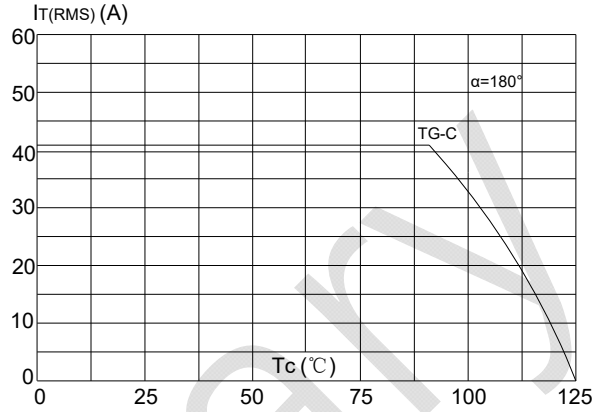


FIG. 3: Surge peak on-state current versus number of cycles

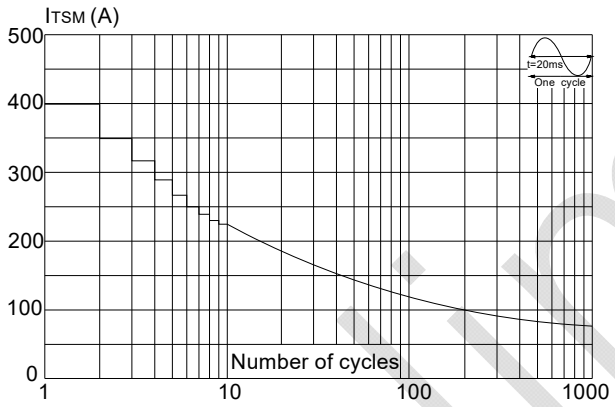


FIG. 4: On-state characteristics (maximum values)

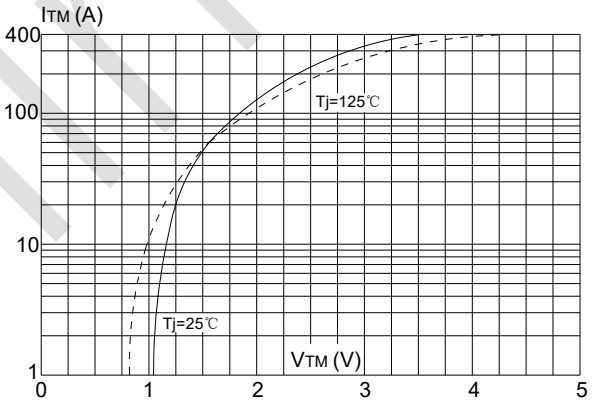


FIG. 5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width t_P<20ms, and corresponging value of I^2t(di/dt < 50A/μs)

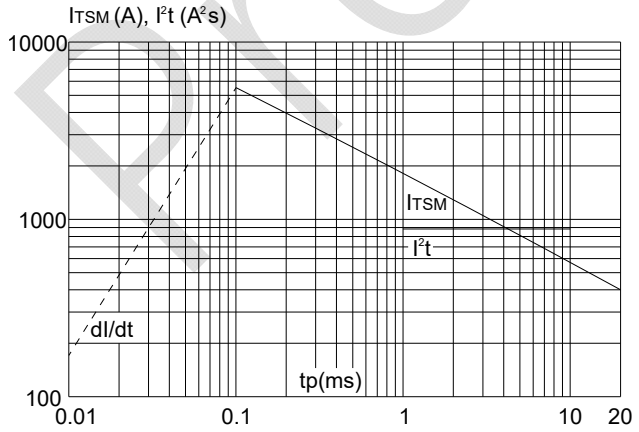


FIG. 6: Relative variations of gate trigger current, holding current and latching current versus junction temperature