



JST41 Series 40A TRIACs

Rev.18.0

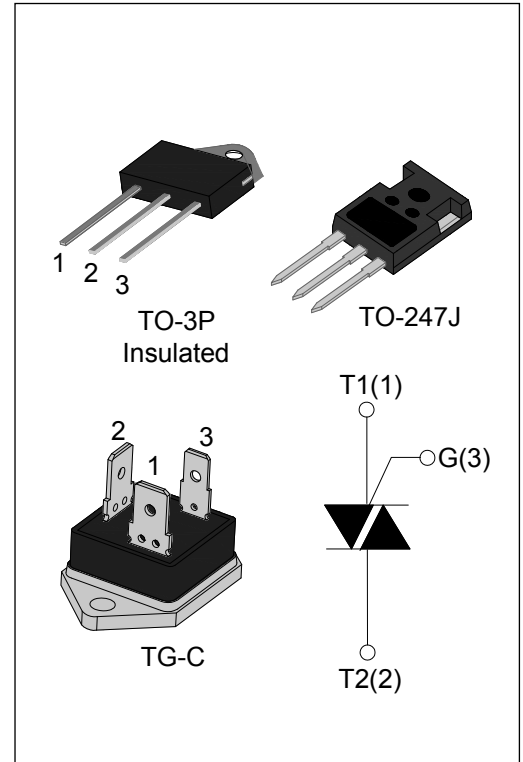
DESCRIPTION:

With high ability to withstand the shock loading of large current, JST41 series triacs 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.

From all three terminals to external heatsink, JST41Z provides a rated insulation voltage of 2500 V_{RMS}, complying with UL standards (File ref: E252906). All the packages are RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
I _{T(RMS)}	40	A
V _{DRM} / V _{RRM}	600/800/1200	V



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°C)	V _{DRM}	600/800/1200	V
Repetitive peak reverse voltage (T _j =25°C)	V _{RRM}	600/800/1200	V
RMS on-state current	TO-3P(Ins) (T _c =80°C)	40	A
	TG-C (T _c =95°C)		
	TO-247J (T _c =90°C)		
Non repetitive surge peak on-state current (full cycle, tp=16.7ms)	I _{TSM}	420	A
I ² t value for fusing (tp=10ms)	I ² t	1000	A ² s
Critical rate of rise of on-state current (I _G = 2 × I _{GT})	dI/dt	50	A/μs

Peak gate current	I_{GM}	8	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W

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

3 Quadrants

Symbol	Test Condition	Quadrant		Value				Unit
				GW	BW	CW	TW	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	I - II -III	MAX	70	50	35	5	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	100	80	70	20	mA
		II		280	200	140	35	
I_H	$I_T=100\text{mA}$		MAX	140	100	70	15	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$		MIN	1500	1500	1000	100	V/ μs

4 Quadrants

Symbol	Test Condition	Quadrant		Value		Unit
				B	C	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	I - II -III	MAX	50	25	mA
		IV		70	50	
V_{GT}		ALL	MAX	1.3		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	60	mA
		II		200	100	
I_H	$I_T=100\text{mA}$		MAX	100	50	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$		MIN	1000	500	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM} = 60A$ $t_p = 380\mu s$	$T_j = 25^\circ C$	1.5	V
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
V_{TO}	Threshold voltage	$T_j = 125^\circ C$	0.93	V
R_d	Dynamic resistance	$T_j = 125^\circ C$	9.5	m Ω

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-3P(Ins)	0.6	$^\circ C/W$
		TG-C	0.25	
		TO-247J	0.45	

ORDERING INFORMATION

<p>J</p> <p>JieJie Microelectronics Co.,Ltd</p>	<p>ST</p> <p>Triacs</p> <p>$I_{T(RMS)}: 40A$</p>	<p>41</p> <p>T:TG-C SJ:TO-247J Z:TO-3P(Ins)</p> <p>600:$V_{DRM} / V_{RRM} \geq 600V$ 800:$V_{DRM} / V_{RRM} \geq 800V$ 1200:$V_{DRM} / V_{RRM} \geq 1200V$</p>	<p>Z</p>	<p>-600</p>	<p>BW</p> <p>TW:$I_{GT1-3} \leq 5mA$ CW:$I_{GT1-3} \leq 35mA$ BW:$I_{GT1-3} \leq 50mA$ GW:$I_{GT1-3} \leq 70mA$ B:$I_{GT1-3} \leq 50mA$ $I_{GT4} \leq 70mA$ C:$I_{GT1-3} \leq 25mA$ $I_{GT4} \leq 50mA$</p>	<p>-/</p> <p>Blank: Tube</p>
--	--	--	-----------------	--------------------	--	-------------------------------------

MARKING

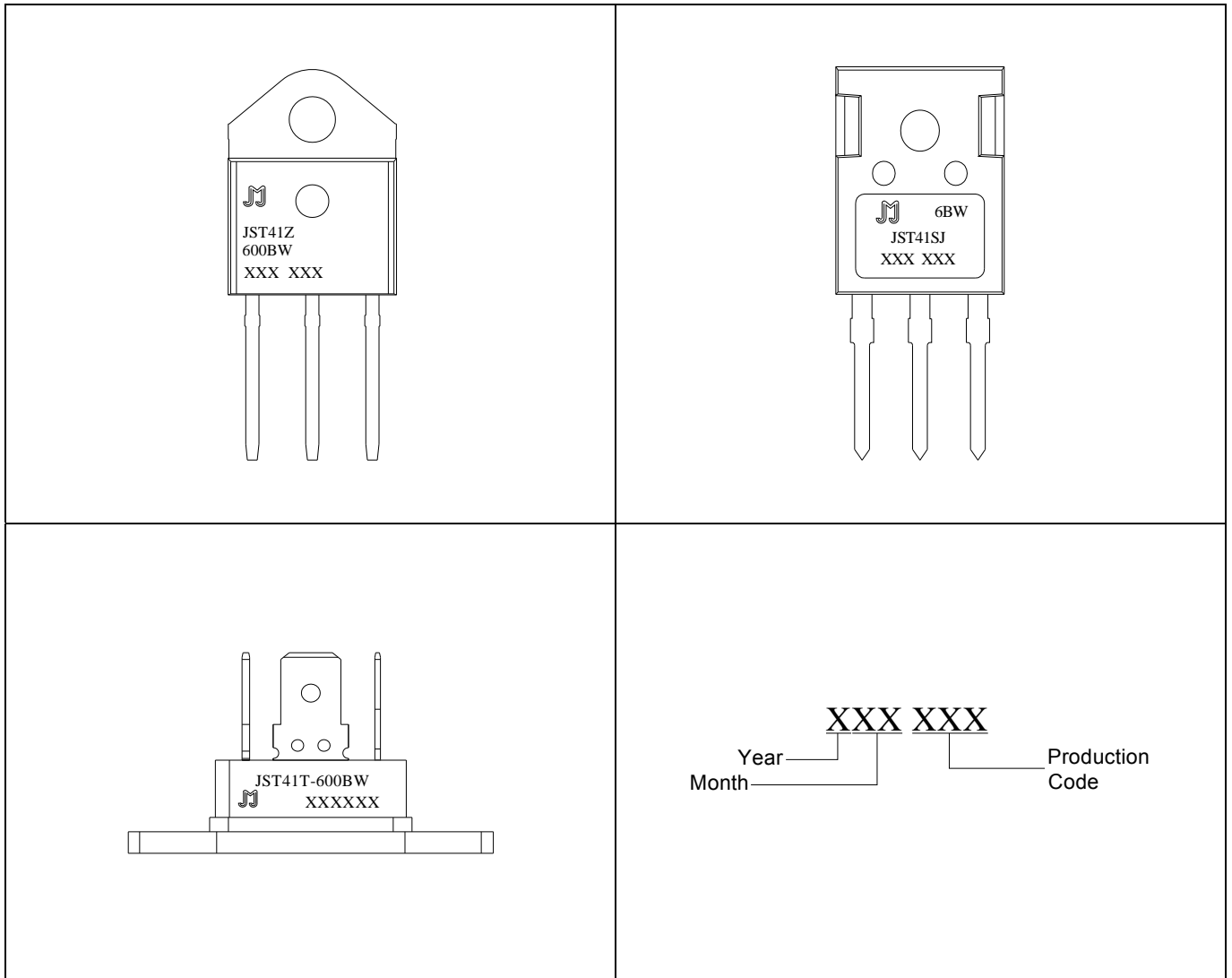


FIG.1 Maximum power dissipation versus RMS on-state current

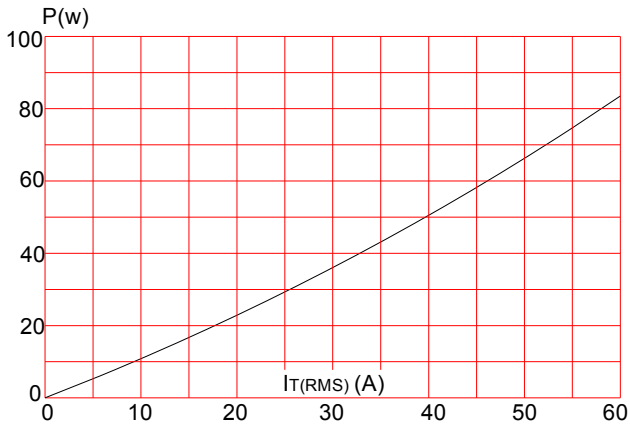


FIG.2: RMS on-state current versus case temperature

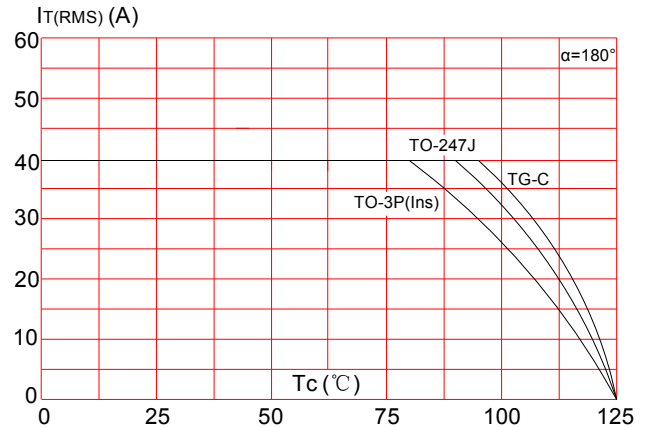


FIG.3: Surge peak on-state current versus number of cycles

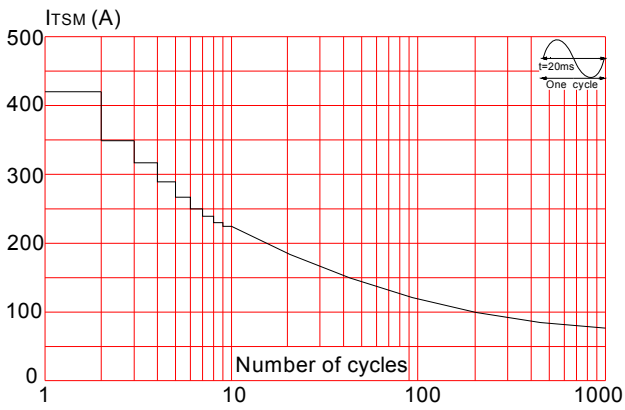


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t ($di/dt < 50A/\mu s$)

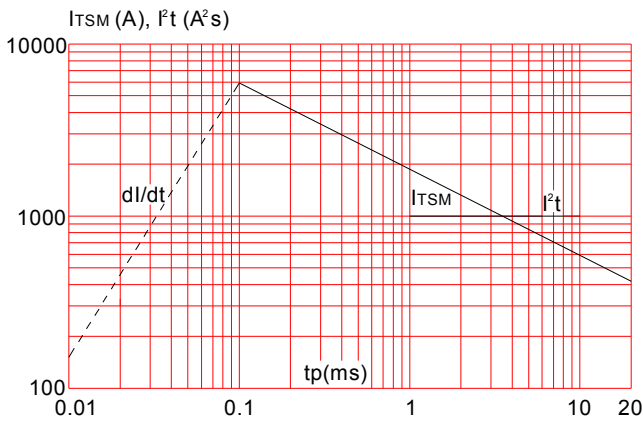


FIG.4: On-state characteristics (maximum values)

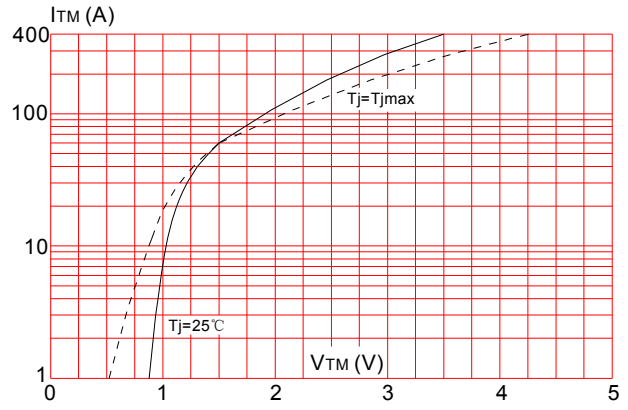
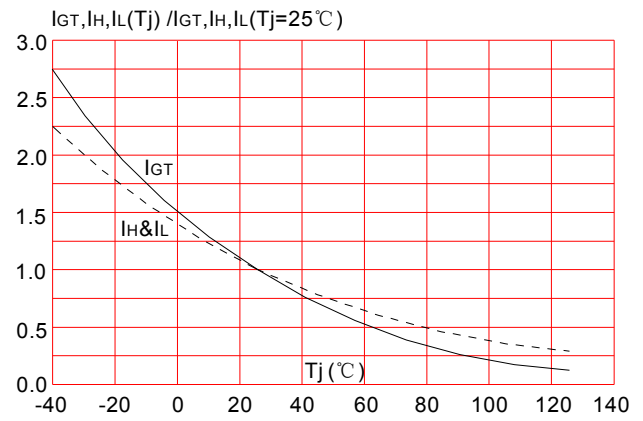


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



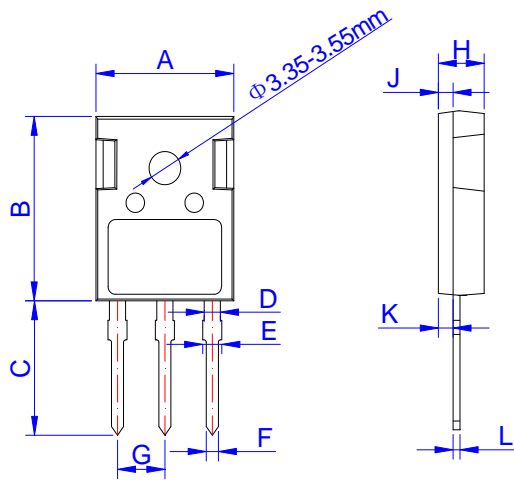
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
JST41T-600/800/1200TW	600/800/ 1200	5		TG-C	10	Tube
JST41T-600/800/1200CW		35				
JST41T-600/800/1200BW		50				
JST41T-600/800/1200GW		70				
JST41SJ-600/800/1200TW		5		TO-247J	30	
JST41SJ-600/800/1200CW		35				
JST41SJ-600/800/1200BW		50				
JST41SJ-600/800/1200GW		70				
JST41Z-600/800/1200TW		5		TO-3P	30	
JST41Z -600/800/1200CW		35				
JST41Z -600/800/1200BW		50				
JST41Z -600/800/1200GW		70				
Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		I - II -III	IV			
JST41T-600/800/1200B	600/800/ 1200	50	70	TG-C	10	Tube
JST41T-600/800/1200C		25	50			
JST41SJ-600/800/1200B		50	70	TO-247J	30	
JST41SJ-600/800/1200C		25	50			
JST41Z-600/800/1200B		50	70	TO-3P	30	
JST41Z-600/800/1200C		25	50			

Document Revision History

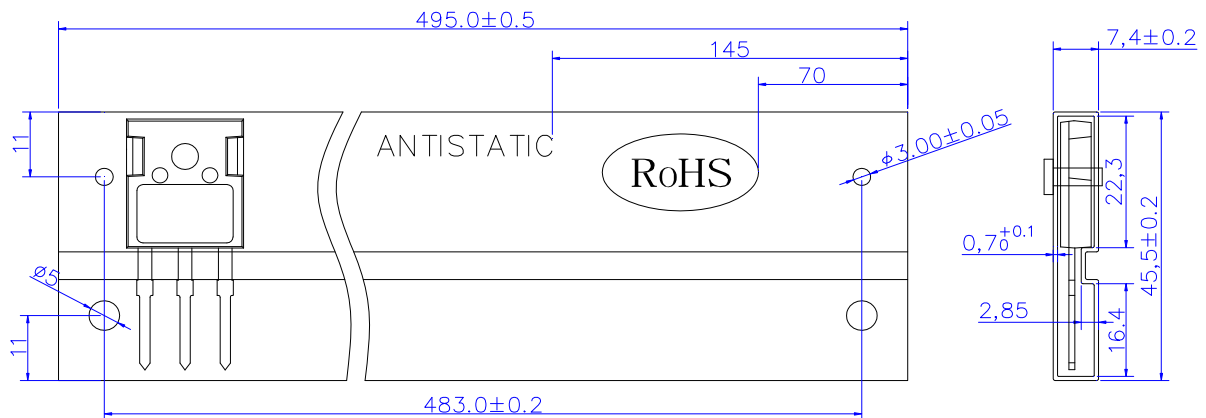
Date	Revision	Changes
July 22, 2021	16	Add V_{to} & R_d
Oct 11, 2021	17	Delete 1600V V_{DRM}/V_{RRM}
Dec 30, 2021	18	Renew I_{TSM} IL & IH

PACKAGE MECHANICAL DATA



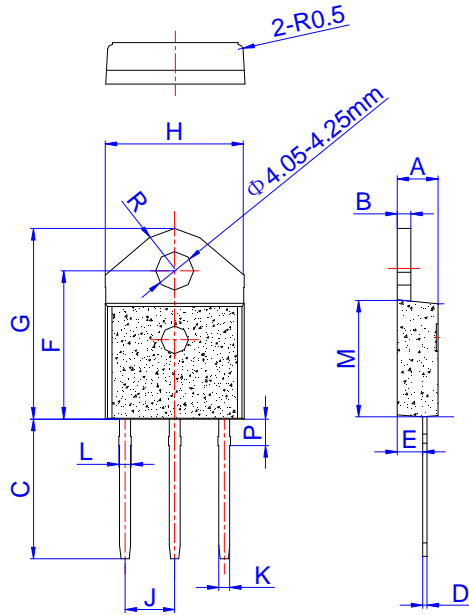
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.50	15.80	16.10	0.610	0.622	0.634
B	20.80	21.00	22.20	0.819	0.827	0.835
C	19.70	20.00	20.30	0.776	0.787	0.799
D	1.80	2.00	2.20	0.071	0.079	0.087
E	1.90	2.10	2.30	0.075	0.083	0.091
F	1.00	1.20	1.40	0.039	0.047	0.055
G		5.44			0.214	
H	4.80	5.00	5.20	0.189	0.197	0.205
J	1.90	2.00	2.10	0.075	0.079	0.083
K	2.20	2.35	2.50	0.087	0.093	0.098
L	0.41	0.60	0.79	0.016	0.024	0.031

DELIVERY MODE



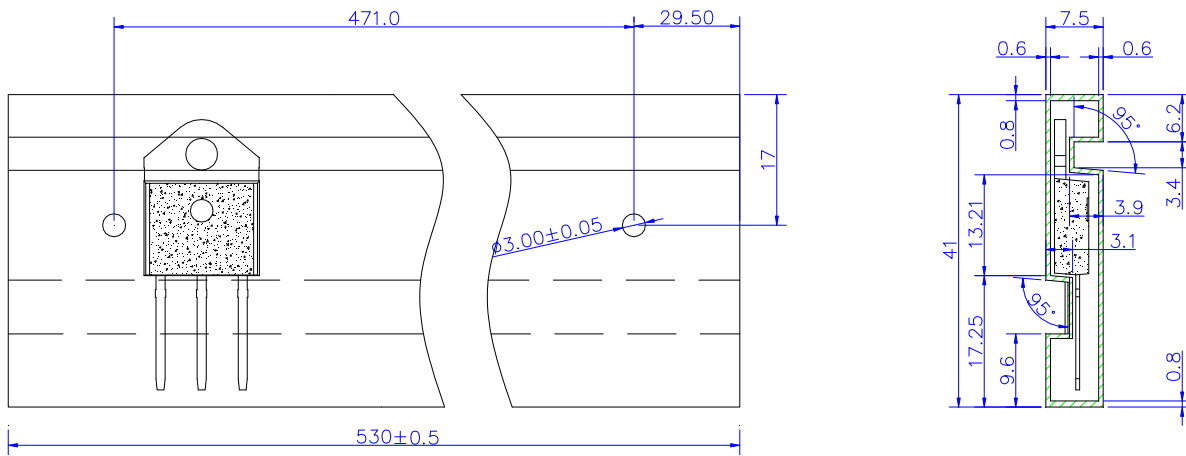
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-247J	TUBE	30	450	2,250

PACKAGE MECHANICAL DATA



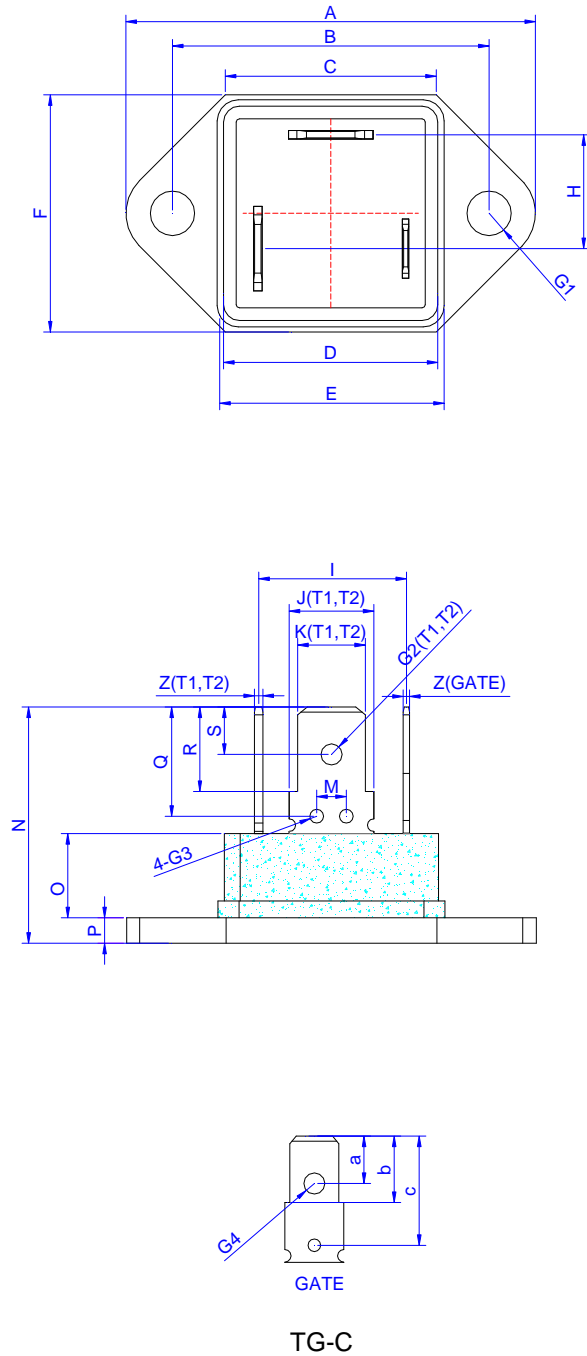
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	0.213		0.222
K	1.10		1.40	0.043		0.055
L	1.25		1.45	0.049		0.057
M	12.37		12.77	0.487		0.503
P	2.80		3.00	0.110		0.118
R		4.35			0.171	

DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-3P	TUBE	30	450	2,250

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	

DELIVERY MODE

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON (PCS)
TG-C	TUBE	10	100	500



Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics 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 supersedes and replaces all information previously supplied.



is a registered trademark of Jiangsu JieJie Microelectronics Co.,Ltd.
Copyright ©2021 Jiangsu JieJie Microelectronics Co.,Ltd. Printed All rights reserved.