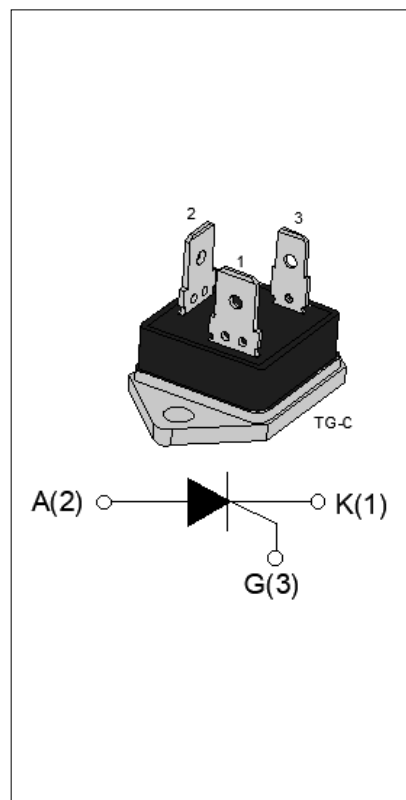




### DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT1255T SCR provides high dV/dt rate with strong resistance to electromagnetic interference. It is especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc. From all three terminals to external heatsink, JCT1255T provides a rated insulation voltage of 2500 V<sub>RMS</sub>, complying with UL standards (File ref: E252906). Package TG-C is RoHS compliant.



### MAIN FEATURES

Symbol	Value	Unit
I <sub>T(RMS)</sub>	55	A
V <sub>DRM</sub> /V <sub>RPM</sub>	1200	V
I <sub>GT</sub>	≤50	mA

### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T <sub>stg</sub>	-40-150	°C
Operating junction temperature range	T <sub>j</sub>	-40-125	°C
Repetitive peak off-state voltage (T <sub>j</sub> =25°C)	V <sub>DRM</sub>	1200	V
Repetitive peak reverse voltage (T <sub>j</sub> =25°C)	V <sub>RPM</sub>	1200	V
Average on-state current (T <sub>c</sub> ≤71°C)	I <sub>T(AV)</sub>	35	A
RMS on-state current (T <sub>c</sub> ≤71°C)	I <sub>T(RMS)</sub>	55	A
Non repetitive surge peak on-state current (t <sub>p</sub> =10ms, T <sub>j</sub> =25°C)	I <sub>TSM</sub>	700	A
Non repetitive surge peak on-state current (t <sub>p</sub> =8.3ms, T <sub>j</sub> =25°C)		750	
I <sup>2</sup> t value for fusing (t <sub>p</sub> =10ms, T <sub>j</sub> =25°C)	I <sup>2</sup> t	2450	A <sup>2</sup> s
Critical rate of rise of on-state current (I <sub>G</sub> =2×I <sub>GT</sub> , f=100Hz, T <sub>j</sub> =125°C)	di/dt	200	A/μs

Peak gate current ( $t_p=20\mu s$ , $T_j=125^\circ C$ )	$I_{GM}$	10	A
Average gate power dissipation ( $T_j=125^\circ C$ )	$P_{G(AV)}$	1	W
Peak gate power	$P_{GM}$	20	W
Peak pulse voltage ( $T_j=25^\circ C$ ; non-repetitive, off-state; FIG.7)	$V_{pp}$	0.7	kV

**ELECTRICAL CHARACTERISTICS** ( $T_j=25^\circ C$  unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
$I_{GT}$	$V_D=12V$ $R_L=33\Omega$	-	-	50	mA
$V_{GT}$		-	-	1	V
$V_{GD}$	$V_D=V_{DRM}$ $T_j=125^\circ C$ $R_L=3.3K\Omega$	0.2	-	-	V
$I_L$	$I_G=1.2I_{GT}$	-	-	120	mA
$I_H$	$I_T=500mA$	-	-	100	mA
dV/dt	$V_D=800V$ Gate Open $T_j=125^\circ C$	1200	-	-	V/ $\mu s$
$t_{on}$	$I_G=50mA$ $I_A=500mA$ $I_R=50mA$ $T_j=25^\circ C$	-	4	-	$\mu s$
$t_{off}$		-	130	-	

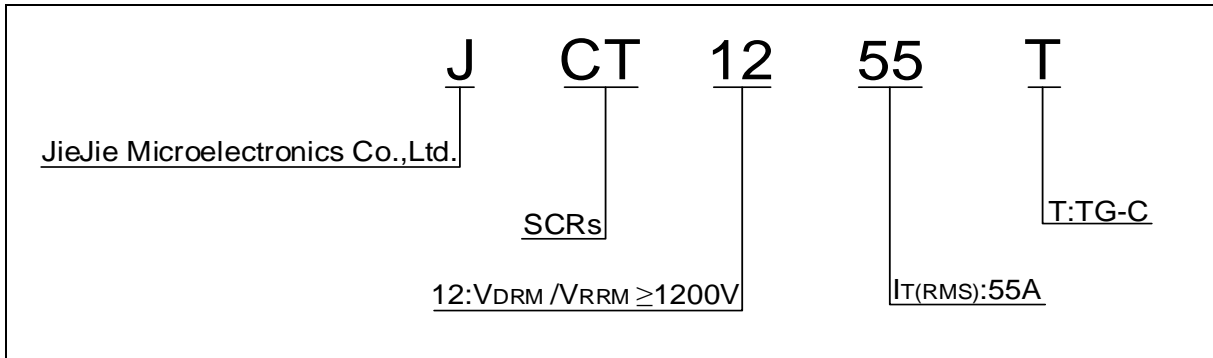
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=80A$ $t_p=380\mu s$	$T_j=25^\circ C$	1.5	V
$V_{TO}$	Threshold voltage	$T_j=125^\circ C$	0.76	V
$R_D$	Dynamic resistance	$T_j=125^\circ C$	8.5	m $\Omega$
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	10	$\mu A$
$I_{RRM}$		$T_j=125^\circ C$	6	mA

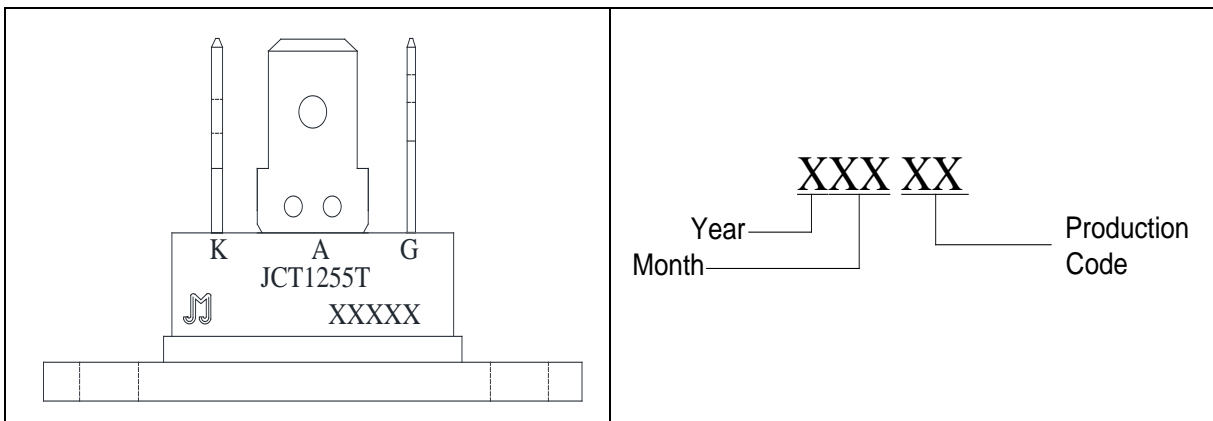
**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case(DC)	0.7	$^\circ C/W$
$R_{th(j-a)}$	junction to ambient (DC)	45	$^\circ C/W$

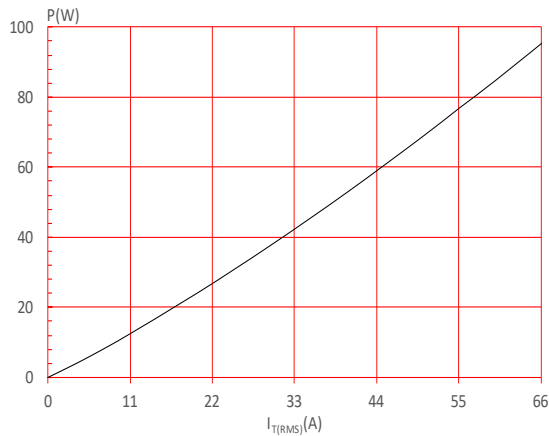
**ORDERING INFORMATION**



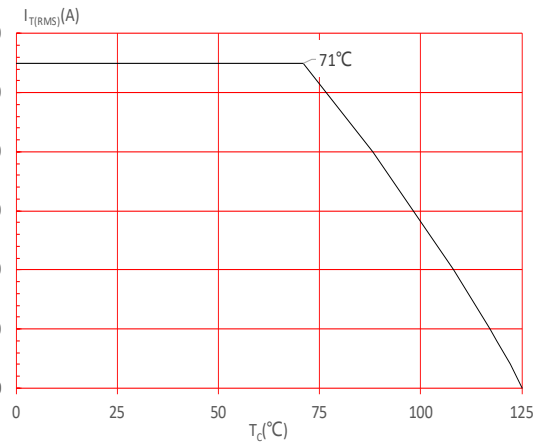
**MARKING**



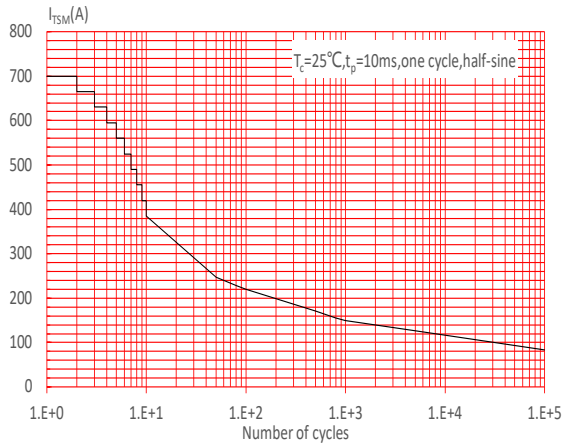
**FIG.1** Maximum power dissipation versus RMS on-state current



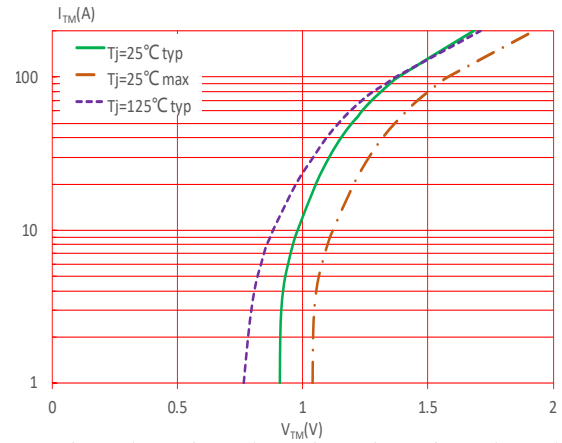
**FIG.2:** RMS on-state current versus case temperature



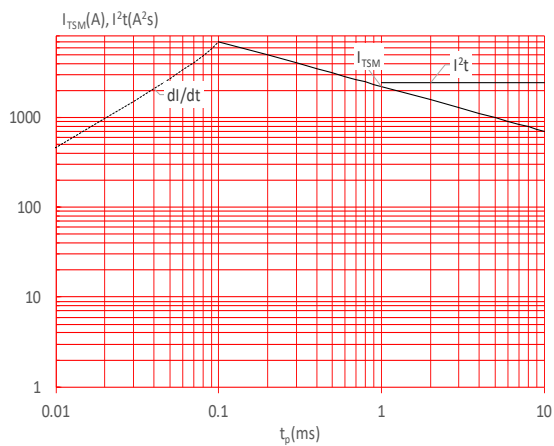
**FIG.3:** Surge peak on-state current versus number of cycles



**FIG.4:** On-state characteristics



**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 200\text{A}/\mu\text{s}$ )



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

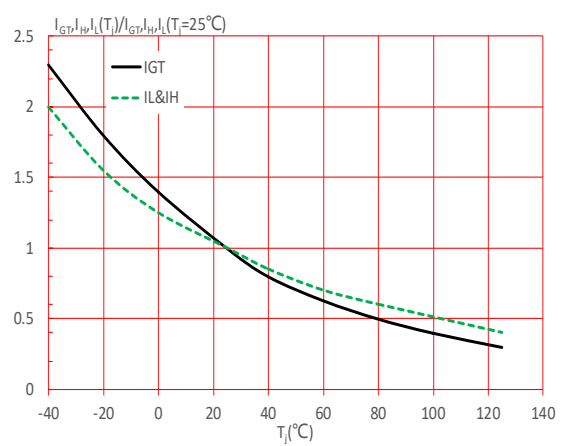
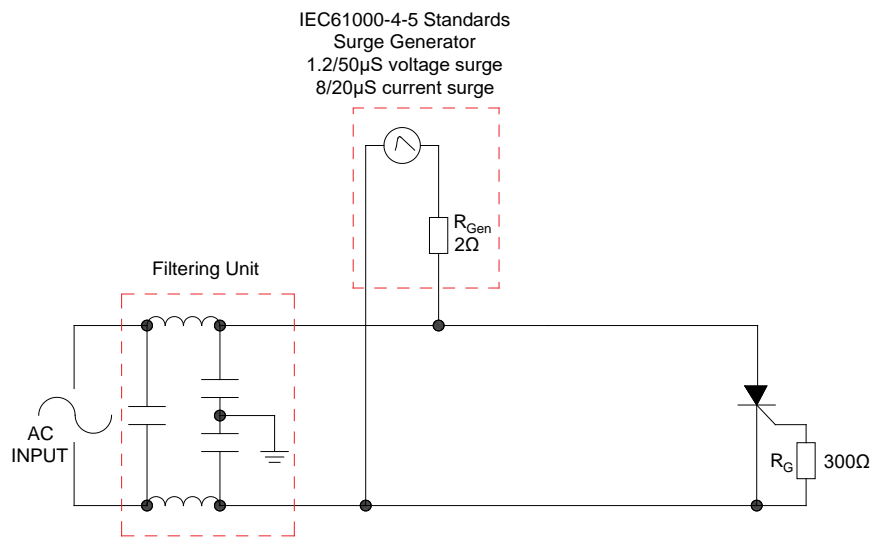


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



## SHAPING AND SOLDERING PARAMETERS

Refer to 《Instructions for installation of plastic-sealed in-line power devices》 released by JieJie

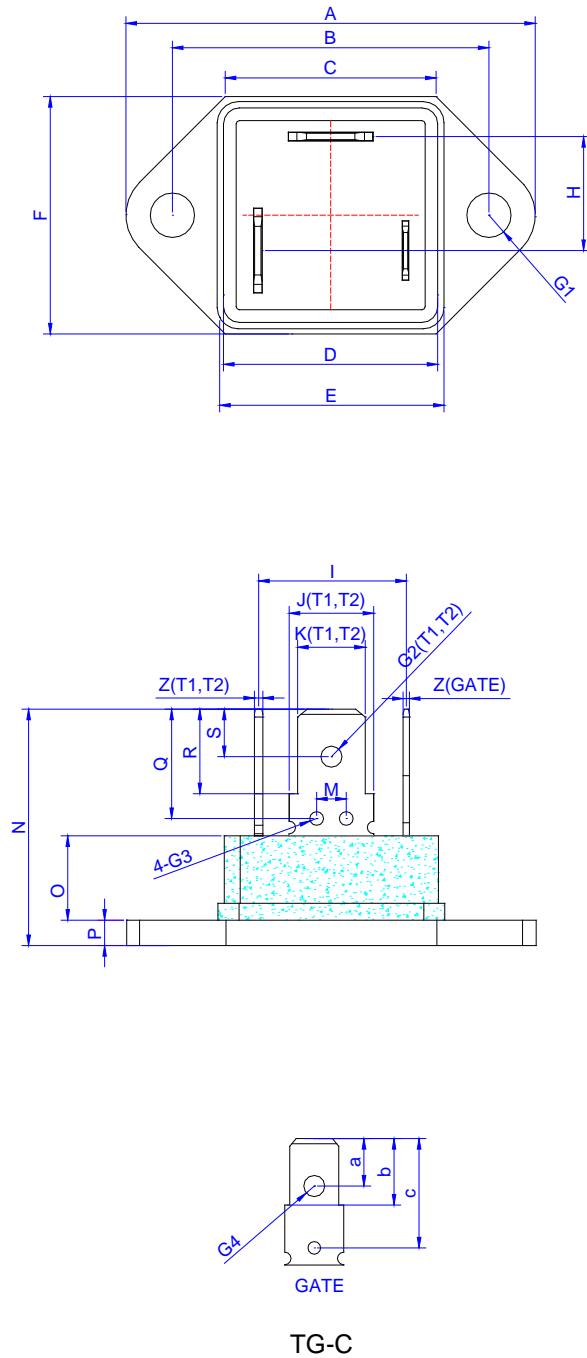
**ORDERING INFORMATION**

Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT1255T	1200	50	TG-C	10	Tube

**Document Revision History**

Date	Revision	Changes
Apr.13, 2023	A.1.0	Last update

**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

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