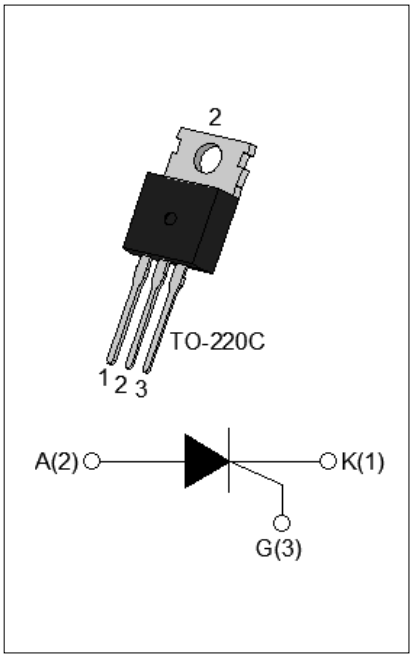
JCT1225C 25A SCR

Rev.A.1.0

DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT1225C 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. Package TO-220C is RoHS compliant.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	25	A
V_{DRM}/V_{RRM}	1200	V
I_{GT}	≤40	mA

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}	1200	V
Repetitive peak reverse voltage (T_j=25℃)	V_{RRM}	1200	V
Average on-state current (T_C≤96℃)	$I_{T(AV)}$	16	A
RMS on-state current (T_C≤96℃)	$I_{T(RMS)}$	25	A
Non repetitive surge peak on-state current (t_p=10ms, T_j=25℃)	I_{TSM}	320	A
Non repetitive surge peak on-state current (t_p=8.3ms, T_j=25℃)		352	
I^2t value for fusing (t_p=10ms , T_j=25℃)	I^2t	512	A^2s
Critical rate of rise of on-state current (I_G=2×I_{GT}, f=100Hz , T_j=125℃)	dI/dt	200	A/μs
Peak gate current (t_p=20μs , T_j=125℃)	I_{GM}	5	A
Average gate power dissipation (T_j=125℃)	$P_{G(AV)}$	1	W

Peak gate power	P_{GM}	20	W
Peak pulse voltage (T_j=25℃; non-repetitive,off-state;FIG.7)	V_{pp}	1	kV

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	V_D=12V R_L=33Ω	-	-	40	mA
V_{GT}		-	-	1	V
V_{GD}	V_D=V_{DRM} T_j=125℃ R_L=3.3KΩ	0.2	-	-	V
I_L	I_G=1.2I_{GT}	-	-	90	mA
I_H	I_T=500mA	-	-	80	mA
dV/dt	V_D=800V Gate Open T_j=125℃	1000	-	-	V/μs
t_{on}	I_G=50mA I_A=500mA I_R=50mA T_j=25℃	-	5	-	μs
t_{off}		-	70	-	

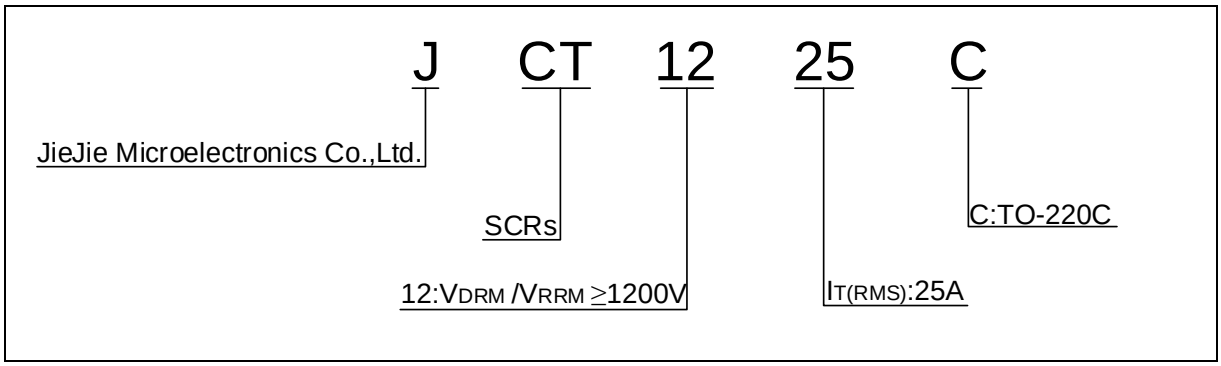
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=50A t_p=380μs	T_j=25℃	1.55	V
V_{TO}	Threshold voltage	T_j=125℃	0.74	V
R_D	Dynamic resistance	T_j=125℃	19	mΩ
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	7	μA
I_{RRM}		T_j=125℃	2	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case(DC)	0.9	℃/W
$R_{th(j-a)}$	junction to ambient (DC)	45	℃/W

ORDERING INFORMATION



MARKING

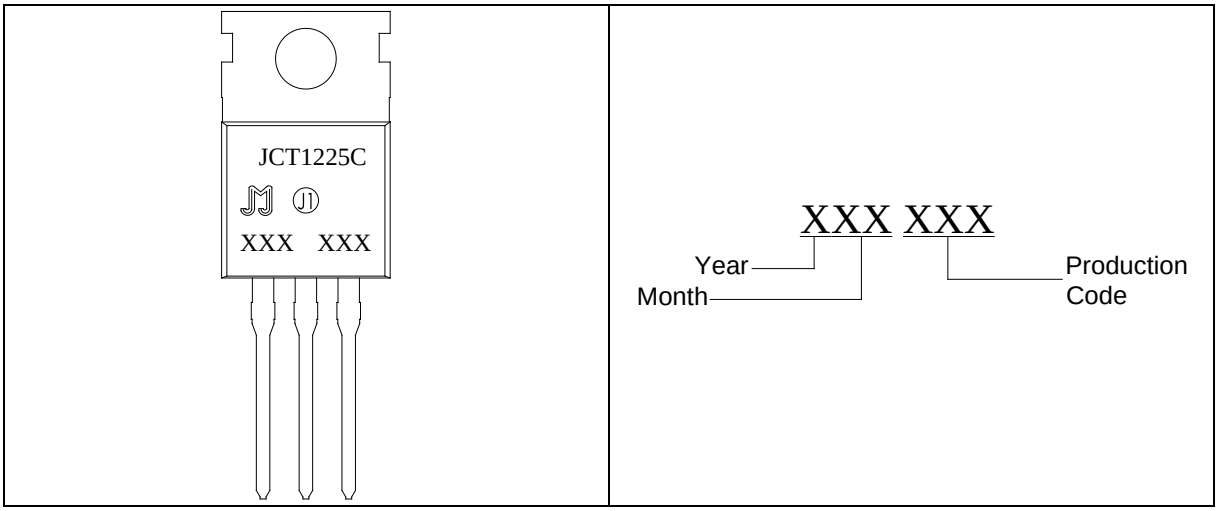


FIG.1 Maximum power dissipation versus RMS on-state current

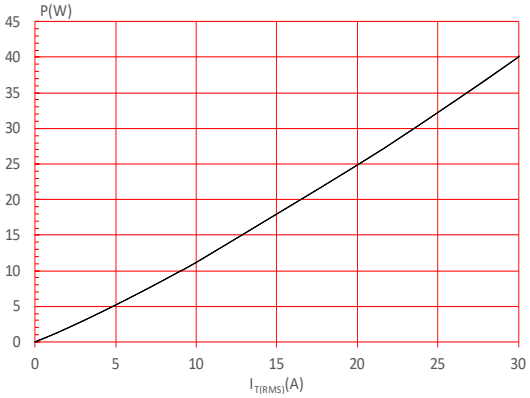


FIG.2: RMS on-state current versus case temperature

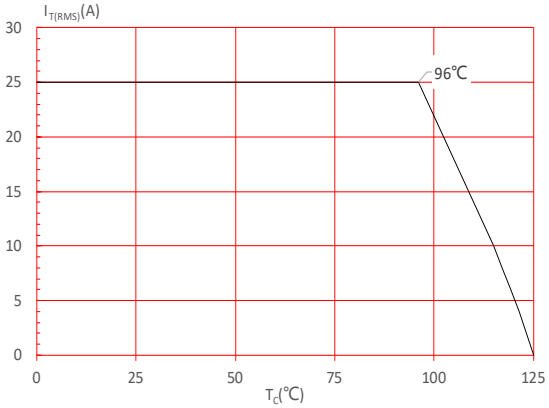


FIG.3: Surge peak on-state current versus number of cycles

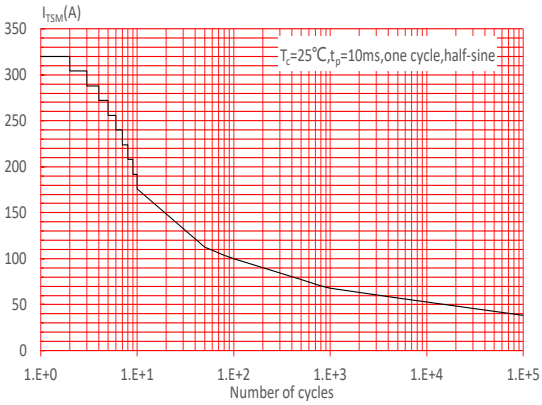


FIG.4: On-state characteristics

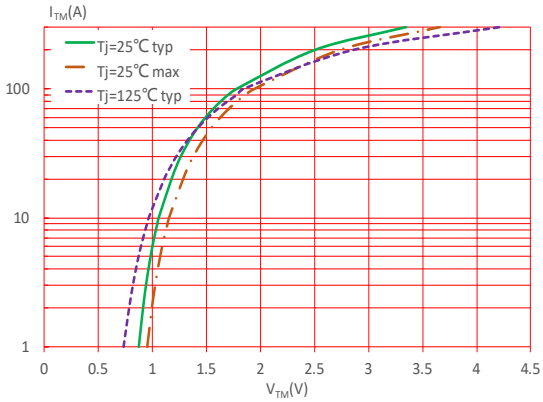
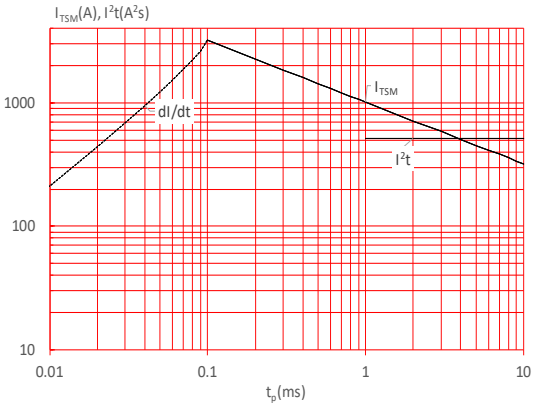


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width t_p<10ms, and corresponding value of I^2t (dI/dt<200A/μs)



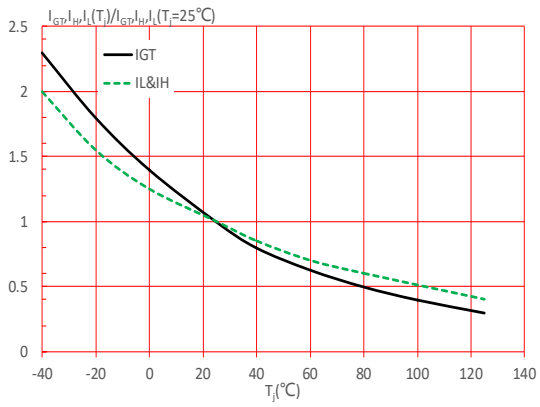
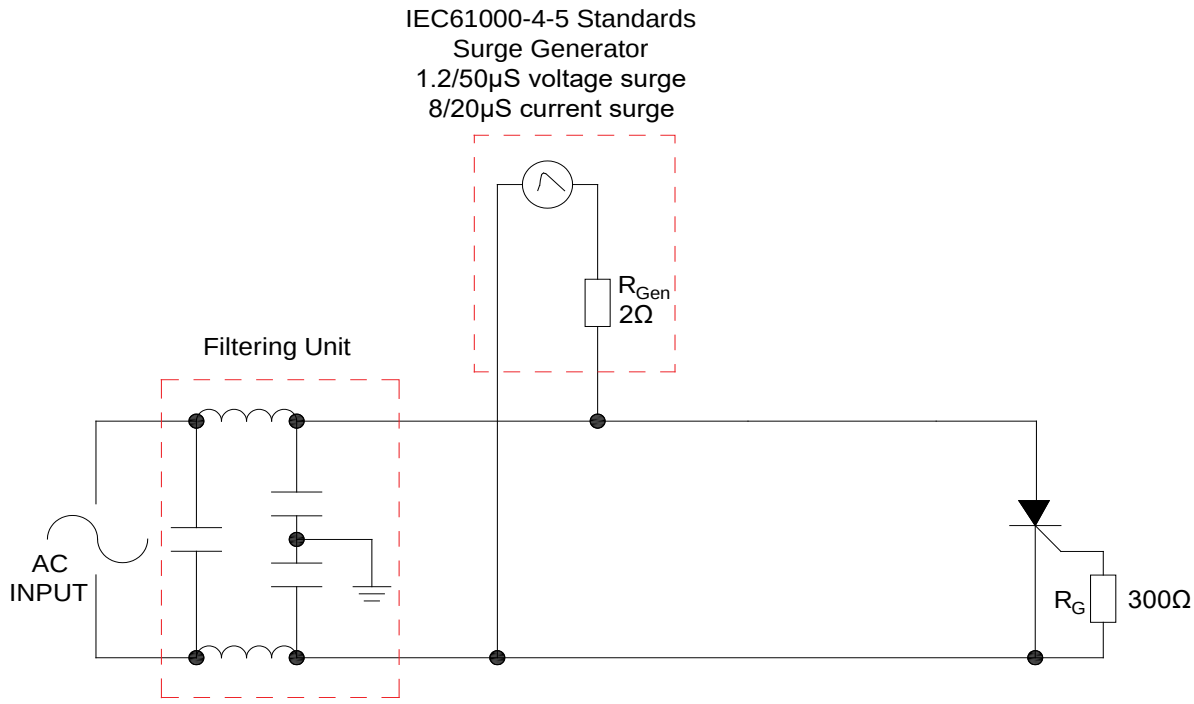


FIG.7：Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



SHAPING AND SOLDERING PARAMETERS

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

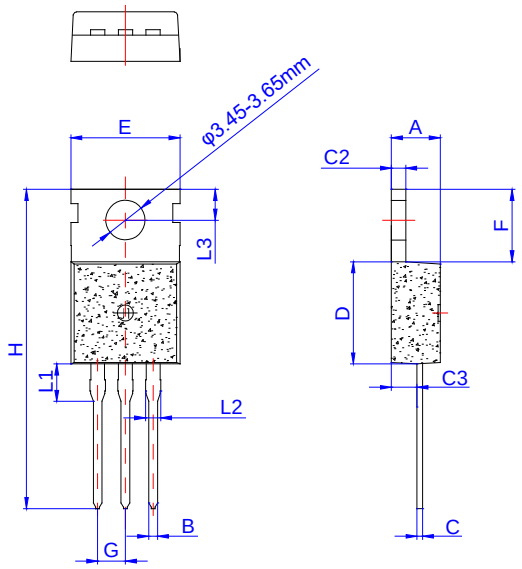
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT1225C	1200	40	TO-220C	50	Tube

Document Revision History

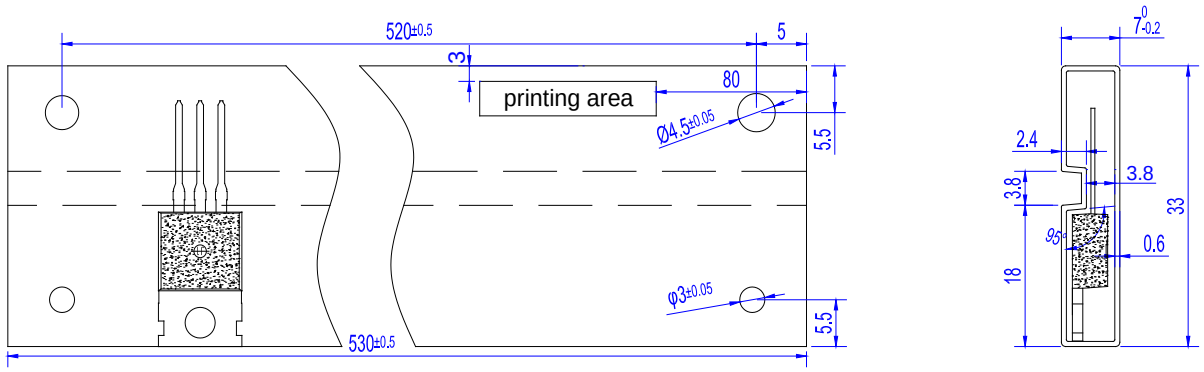
Date	Revision	Changes
Apr.13, 2023	A.1.0	Last update

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.25		1.35	0.049		0.053
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1	2.70		3.30	0.106		0.130
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116

DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220C	TUBE	50	1,000	5,000