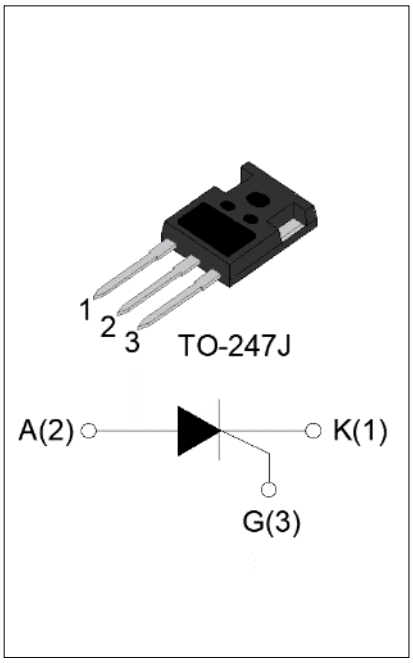
JCT1675SJ 75A SCR

Rev.A.1.0

DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT1675SJ SCR provides high dV/dt rate with strong resistance to electromagnetic interference.It is especially recommended for use on solid state relay, UPS, SVC, power charger, T-tools etc. Package TO-247J is RoHS compliant.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	75	A
V_{DRM}/V_{RRM}	1600	V
I_{GT}	10-80	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}	1600	V
Repetitive peak reverse voltage (T_j=25℃)	V_{RRM}	1600	V
Average on-state current (T_C≤68℃)	$I_{T(AV)}$	48	A
RMS on-state current (T_C≤68℃)	$I_{T(RMS)}$	75	A
Non repetitive surge peak on-state current (t_p=10ms, T_j=25℃)	I_{TSM}	1000	A
Non repetitive surge peak on-state current (t_p=8.3ms, T_j=25℃)		1100	
I^2t value for fusing (t_p=10ms , T_j=25℃)	I^2t	5000	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}	12	A
Average gate power dissipation (T_j=125℃)	$P_{G(AV)}$	1	W

Peak gate power	P_{GM}	22	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	10	-	80	mA
V_{GT}		-	-	1.3	V
V_{GD}	V_D=V_{DRM} T_j=125℃ R_L=3.3KΩ	0.25	-	-	V
I_L	I_G=1.2I_{GT}	-	-	250	mA
I_H	I_T=500mA	-	-	200	mA
dV/dt	V_D=1070V Gate Open T_j=125℃	2000	-	-	V/μs
t_{on}	I_G=100mA I_A=1A I_R=100mA T_j=25℃	-	8	-	μs
t_{off}		-	150	-	

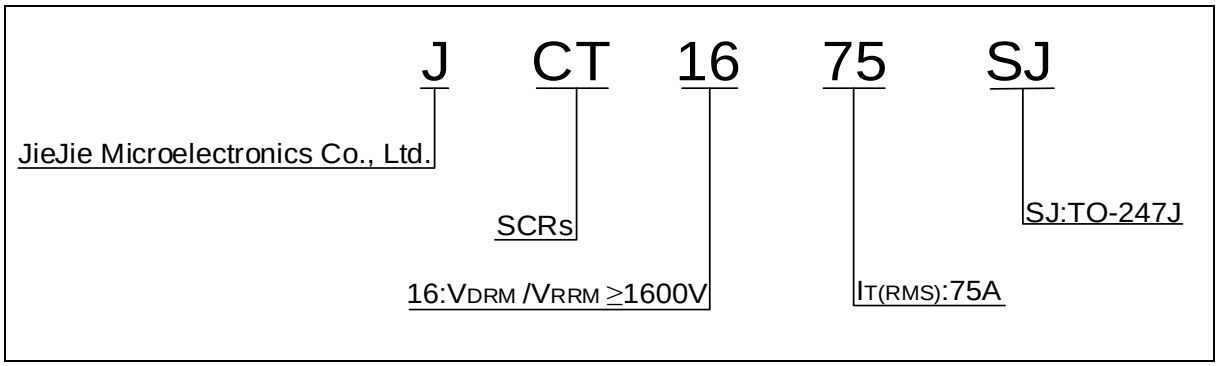
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=100A t_p=380μs	T_j=25℃	1.8	V
V_{TO}	Threshold voltage	T_j=125℃	0.93	V
R_D	Dynamic resistance	T_j=125℃	6	mΩ
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	20	μA
I_{RRM}		T_j=125℃	8	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case(DC)	0.45	℃/W
$R_{th(j-a)}$	junction to ambient (DC)	55	℃/W

ORDERING INFORMATION



MARKING

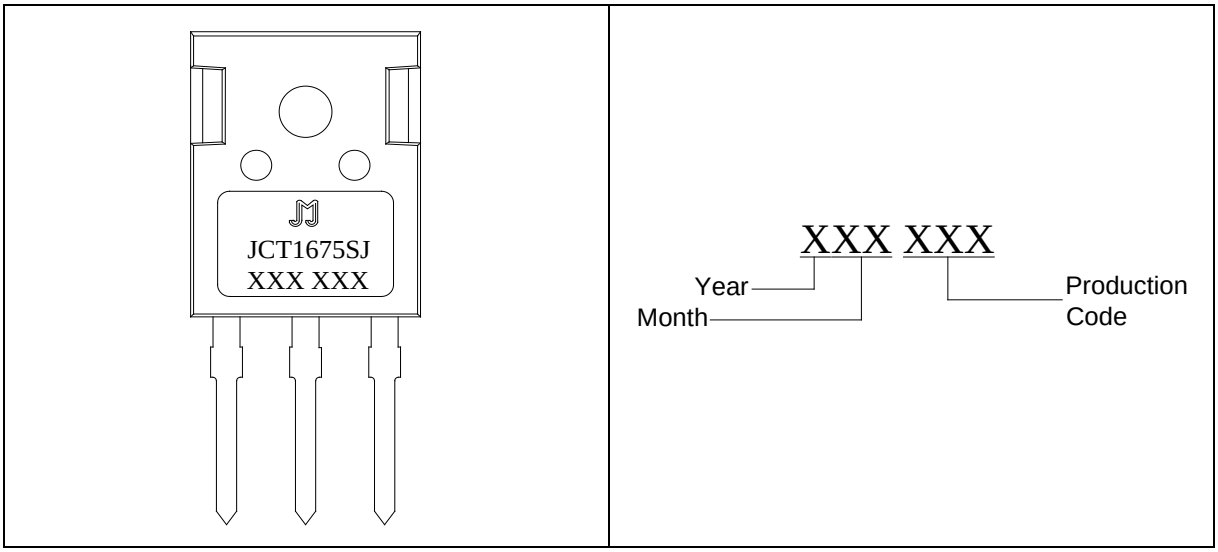


FIG.1 Maximum power dissipation versus RMS on-state current

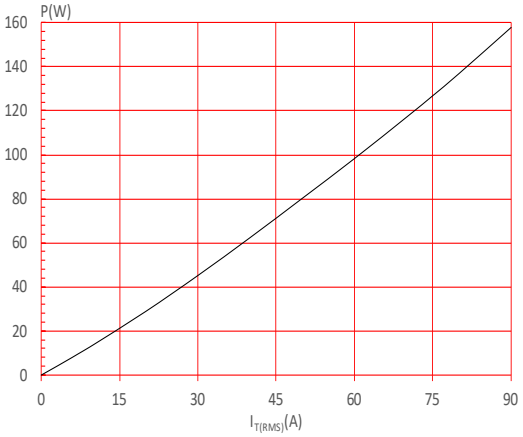


FIG.2: RMS on-state current versus case temperature

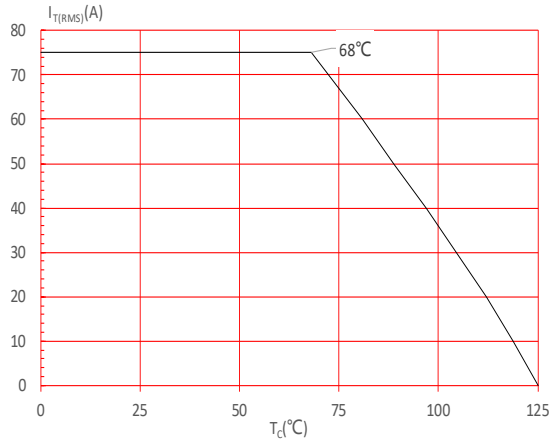


FIG.3: Surge peak on-state current versus number of cycles

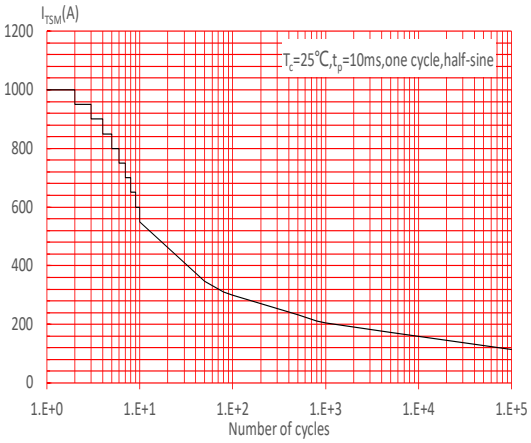


FIG.4: On-state characteristics

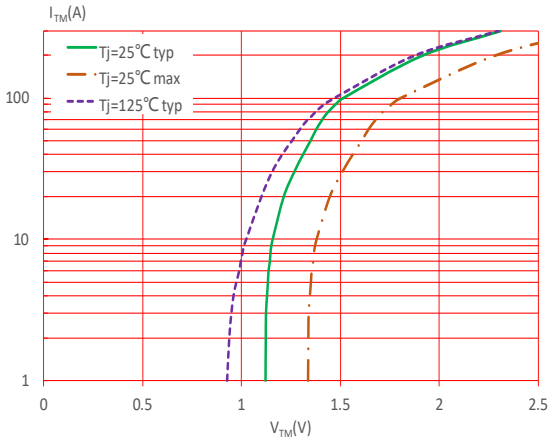


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width t_p<10ms, and corresponding value of I^2t (dI/dt<200A/μs)

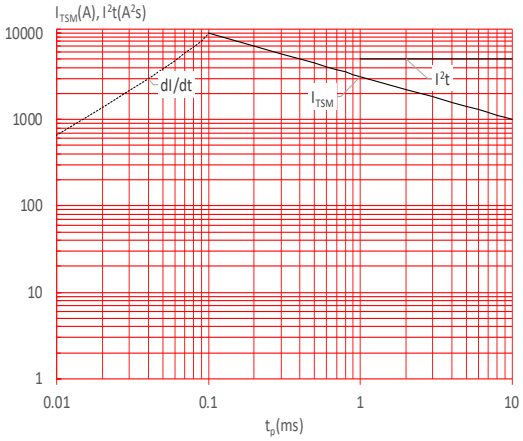


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

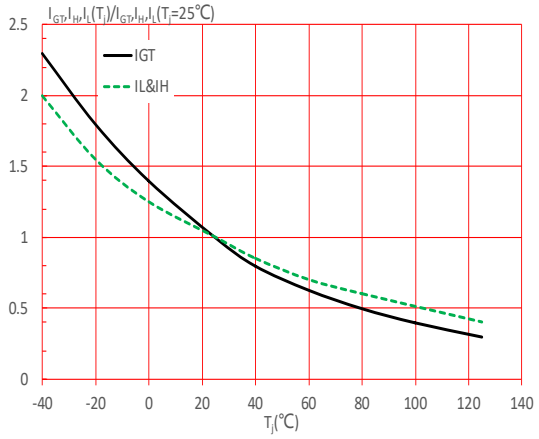
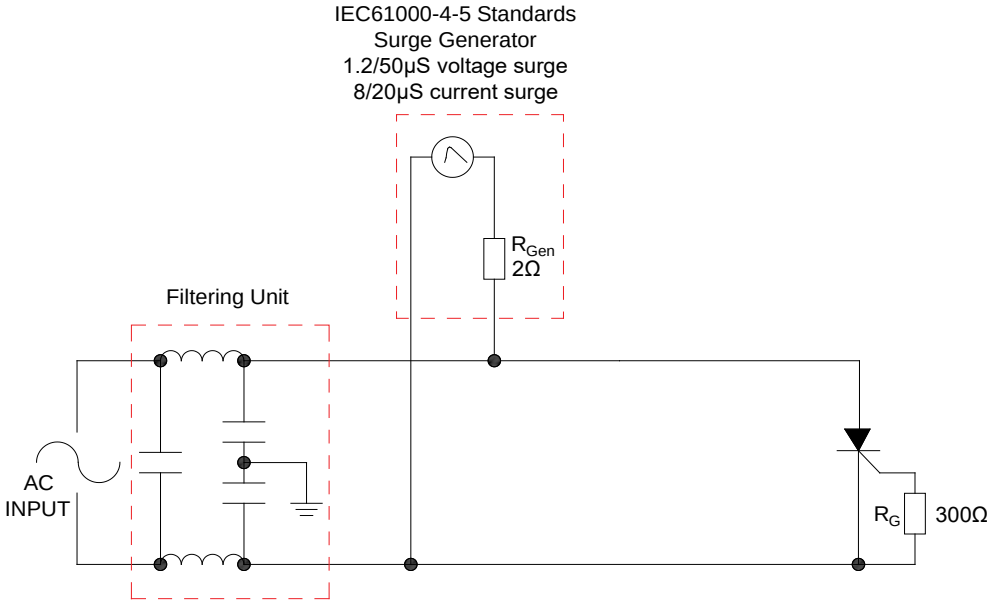


FIG.7：Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



LEAD FORMING AND SOLDERING

Refer to the application note “Assembly Instructions for Power Discretes in Through-hole Packages” released by JieJie Microelectronics

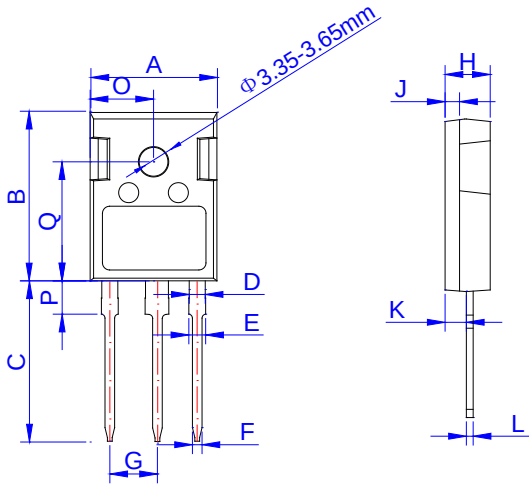
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT1675SJ	1600	10-80	TO-247J	30	Tube

Document Revision History

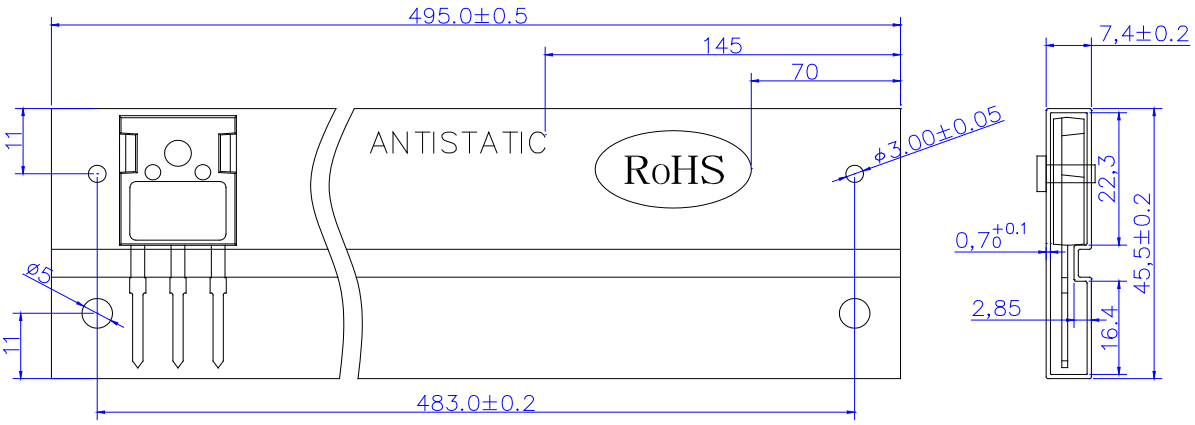
Date	Revision	Changes
Apr.13, 2023	A.1.0	Last update

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.50	15.80	16.10	0.610	0.622	0.634
B	20.80	21.00	21.20	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
O		7.90			0.312	
P	4.05	4.15	4.25	0.016	0.024	0.031
Q		14.85			0.587	

DELIVERY MODE



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

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