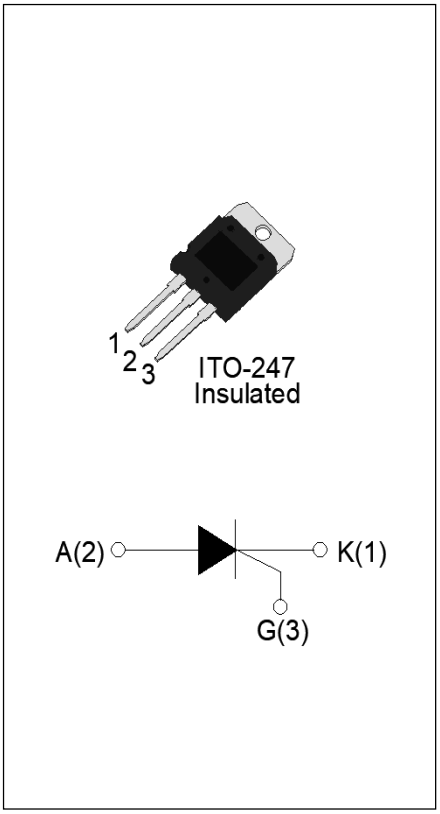
JCT16130IS 130A SCR

Rev.A.1.2

DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT16130IS 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. From all three terminals to external heatsink,JCT16130IS provides a rated insulation voltage of 2500 V_{RMS}, Package ITO-247 is RoHS compliant.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	130	A
V_{DRM} /V_{RRM}	1600	V
I_{GT}	20-80	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≤46℃)	$I_{T(AV)}$	83	A
RMS on-state current (T_C≤46℃)	$I_{T(RMS)}$	130	A
Non repetitive surge peak on-state current (t_p=10ms , T_j=25℃)	I_{TSM}	1500	A
Non repetitive surge peak on-state current (t_p=8.3ms , T_j=25℃)		1650	
I^2t value for fusing (t_p=10ms , T_j=25℃)	I^2t	11250	A^2s
Critical rate of rise of on-state current (I_G=2×I_{GT} , f=100Hz , T_j=125℃)	dI/dt	250	A/μs

Peak gate current (t_p=20μs , T_j=125℃)	I_{GM}	15	A
Average gate power dissipation (T_j=125℃)	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	25	W
Peak pulse voltage (T_j=25℃; non-repetitive,off-state;FIG.7)	V_{pp}	1.3	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	20	-	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}	-	-	280	mA
I_H	I_T=1A	-	-	250	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℃	-	7	-	μs
t_{off}		-	200	-	

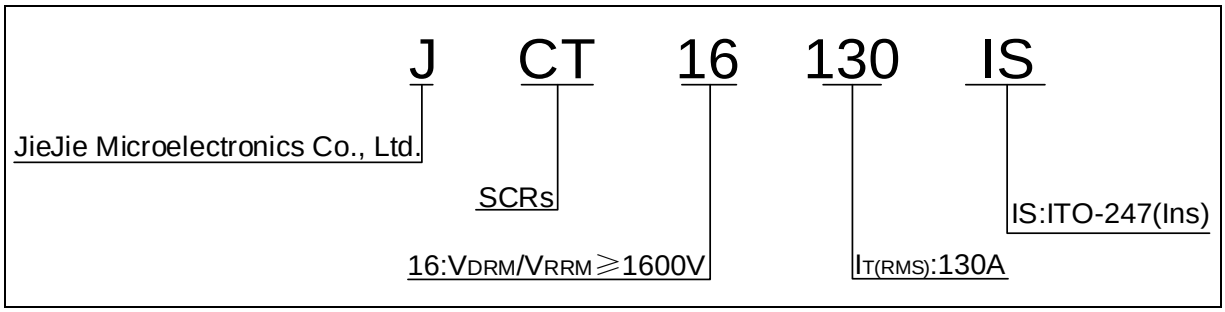
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=180A t_p=380μs	T_j=25℃	1.6	V
V_{TO}	Threshold voltage	T_j=125℃	0.86	V
R_D	Dynamic resistance	T_j=125℃	4.5	mΩ
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	20	uA
I_{RRM}		T_j=125℃	12	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (DC)	0.4	℃/W
$R_{th(j-a)}$	junction to ambient (DC)	50	℃/W

ORDERING INFORMATION



MARKING

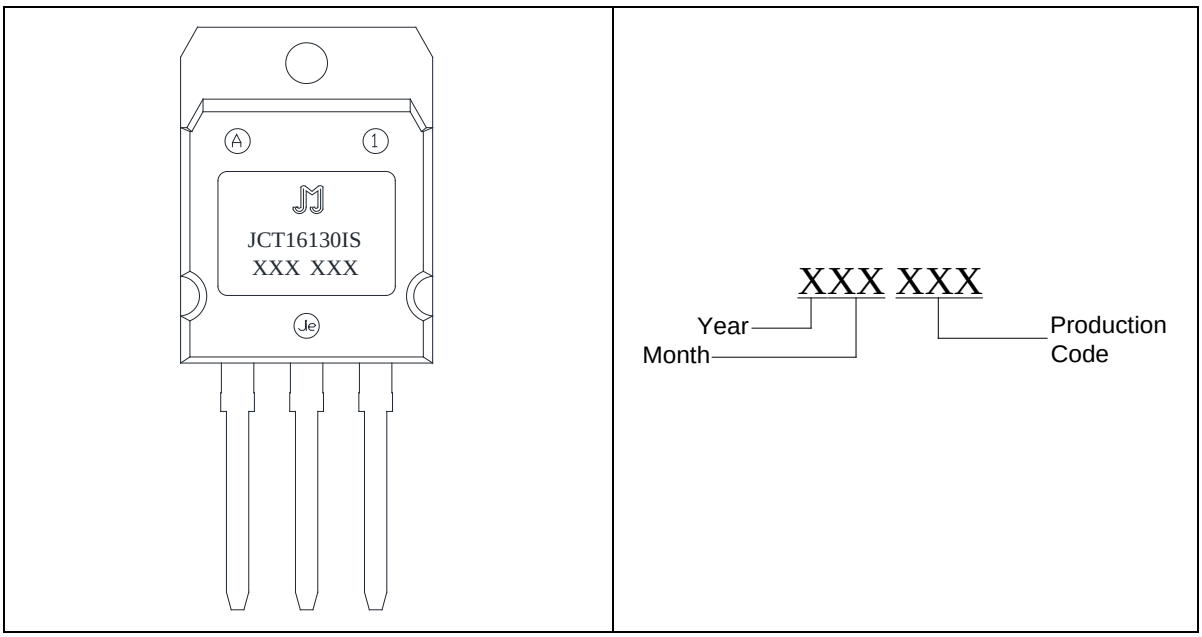


FIG.1: Maximum power dissipation versus RMS on-state current

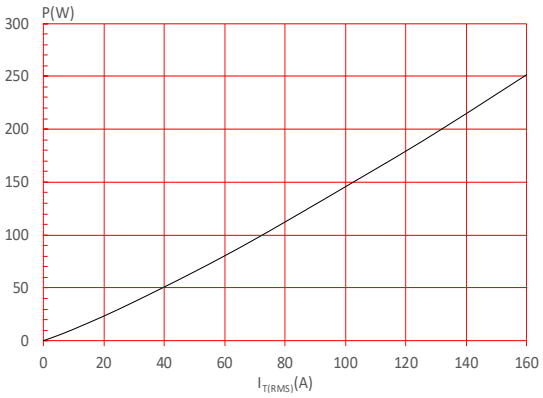


FIG.2: RMS on-state current versus case temperature

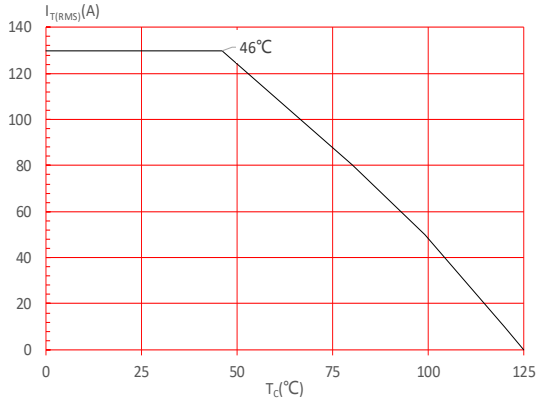


FIG.3: Surge peak on-state current versus number of cycles

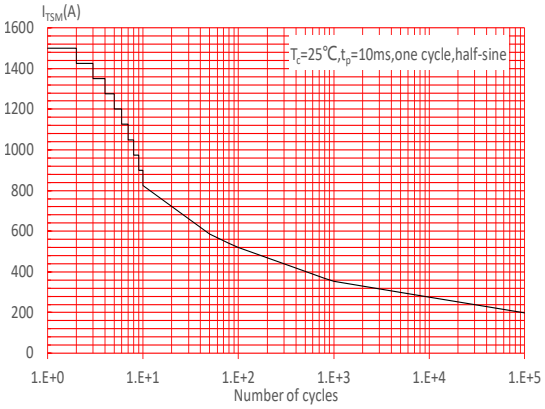


FIG.4: On-state characteristics

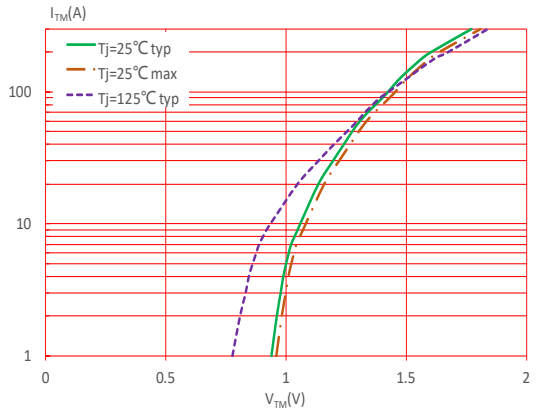


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width t_p<20ms, and corresponding value of I^2t (dI/dt<250A/μs)

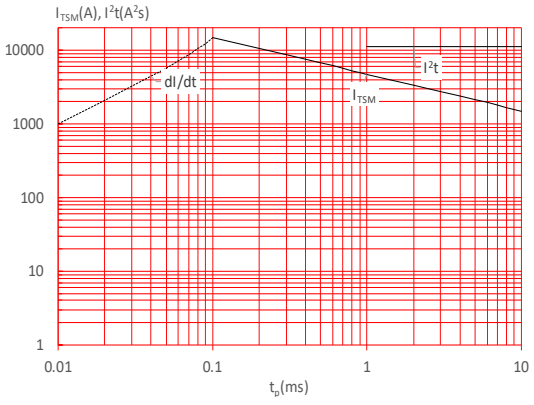


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

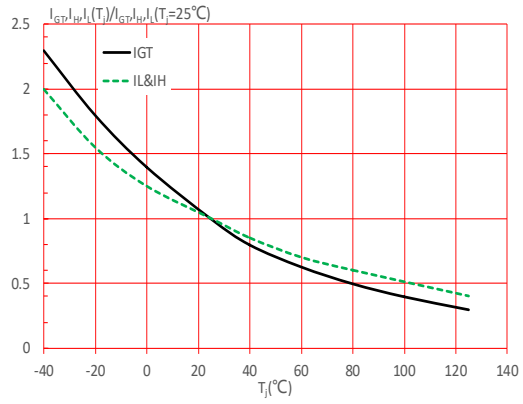
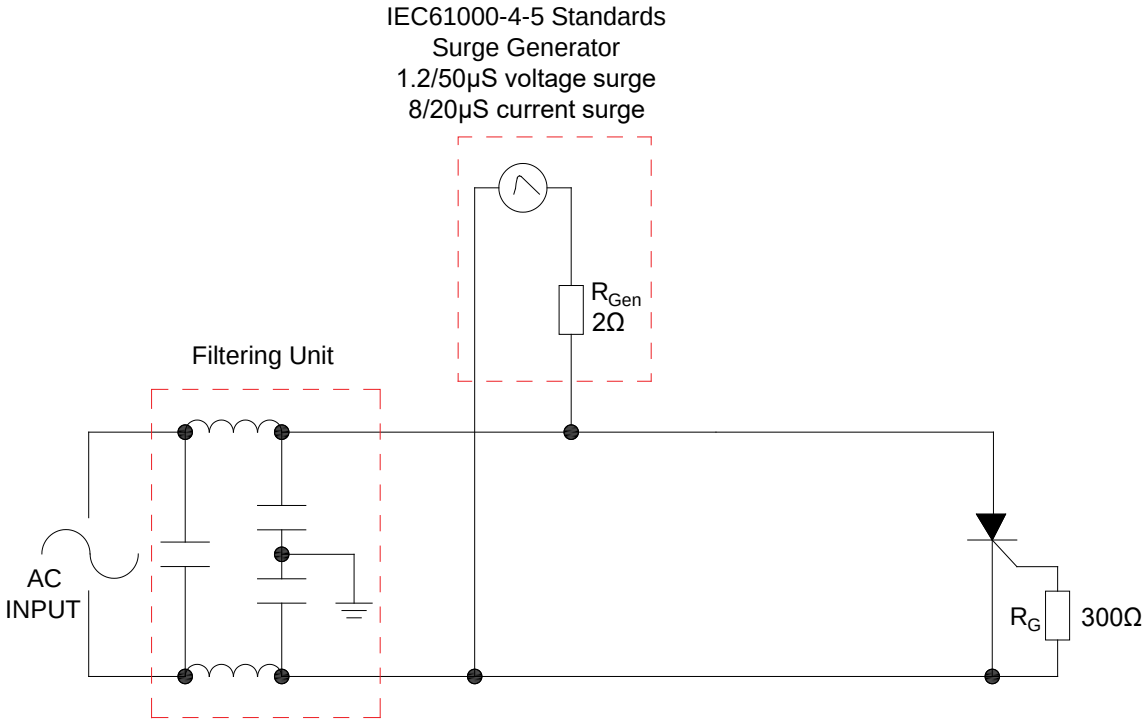


FIG.7：Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



LEAD FORMING AND SOLDERING

Refer to the application note “Assembly Instructions for Thyristors in Through-hole Package” released by JieJie Microelectronics

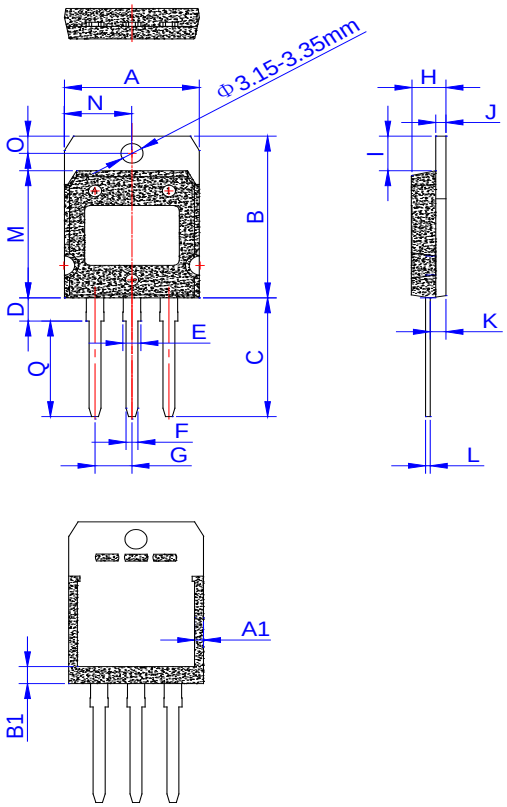
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT16130IS	1600	20-80	ITO-247(Ins)	25	Tube

Document Revision History

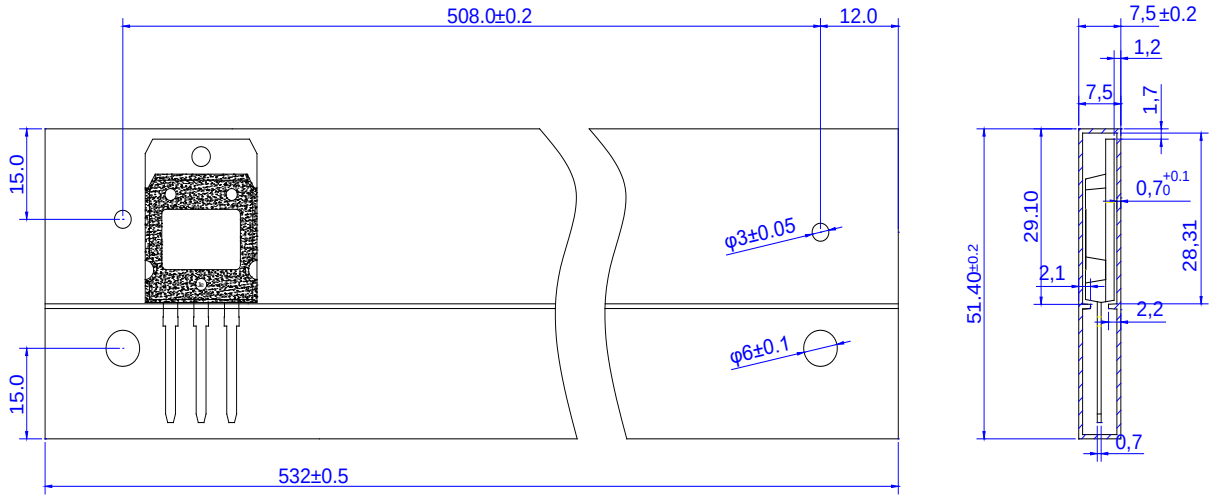
Date	Revision	Changes
Apr.13, 2023	A.1.0	Last update
Feb.19, 2024	A.1.1	Renew $R_{th(j-c)}$ & V_{TM}
Oct.16, 2025	A.1.2	Revise PACKAGE MECHANICAL DATA

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	19.70		20.10	0.776		0.791
A1	1.10		1.50	0.043		0.059
B	26.90		27.30	1.059		1.075
B1	2.65		3.05	0.104		0.120
C	19.40		20.40	0.764		0.803
D	3.80		4.00	0.150		0.157
E	2.56		2.76	0.101		0.109
F	1.66		1.86	0.065		0.073
G	5.25		5.65	0.207		0.222
H	5.05		5.50	0.199		0.217
I	5.60		6.00	0.220		0.236
J	1.45		1.55	0.057		0.061
K	2.20		2.40	0.087		0.094
L	0.60		0.80	0.024		0.031
M	21.20		21.40	0.835		0.843
N	9.70		10.30	0.382		0.406
O	2.60		3.20	0.102		0.126
Q	15.80		16.20	0.622		0.638

DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
ITO-247	TUBE	25	400	1,600

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