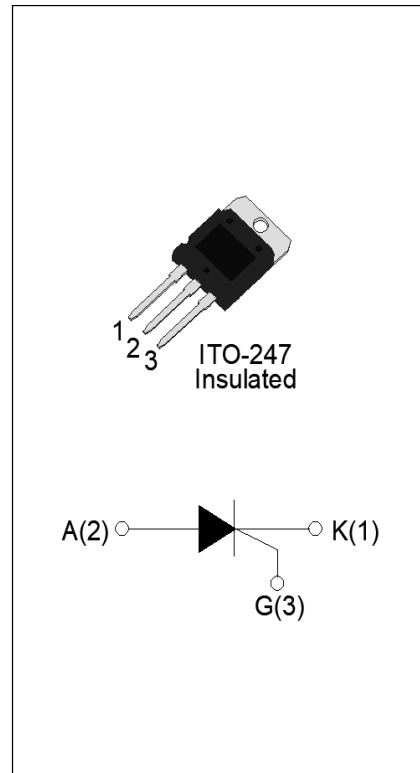


**DESCRIPTION:**

With high ability to withstand the shock loading of large current, SCT16130IS 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, SCT16130IS provides a rated insulation voltage of  $2500 V_{RMS}$ , complying with UL standards (File ref: E252906). 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	°C
Operating junction temperature range	$T_j$	-40-125	°C
Repetitive peak off-state voltage ( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	1600	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	1600	V
Average on-state current ( $T_c \leq 46^\circ\text{C}$ )	$I_{T(AV)}$	83	A
RMS on-state current ( $T_c \leq 46^\circ\text{C}$ )	$I_{T(RMS)}$	130	A
Non repetitive surge peak on-state current ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I_{TSM}$	1500	A
Non repetitive surge peak on-state current ( $t_p=8.3\text{ms}$ , $T_j=25^\circ\text{C}$ )		1650	
$I^2t$ value for fusing ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )		11250	$\text{A}^2\text{s}$
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ , $f=100\text{Hz}$ , $T_j=125^\circ\text{C}$ )	$di/dt$	250	$\text{A}/\mu\text{s}$

Peak gate current ( $t_p=20\mu s$ , $T_j=125^\circ C$ )	$I_{GM}$	15	A
Average gate power dissipation ( $T_j=125^\circ C$ )	$P_{G(AV)}$	1	W
Peak gate power	$P_{GM}$	25	W
Peak pulse voltage ( $T_j=25^\circ C$ ; non-repetitive, off-state; FIG.7)	$V_{pp}$	1.3	kV

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
$I_{GT}$	$V_D=12V$ $R_L=33\Omega$	20	-	80	mA
$V_{GT}$		-	-	1.3	V
$V_{GD}$	$V_D=V_{DRM}$ $T_j=125^\circ C$ $R_L=3.3k\Omega$	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 $T_j=125^\circ C$	2000	-	-	V/ $\mu s$
$t_{on}$	$I_G=100mA$ $I_A=1A$ $I_R=100mA$ $T_j=25^\circ C$	-	7	-	$\mu s$
$t_{off}$		-	200	-	

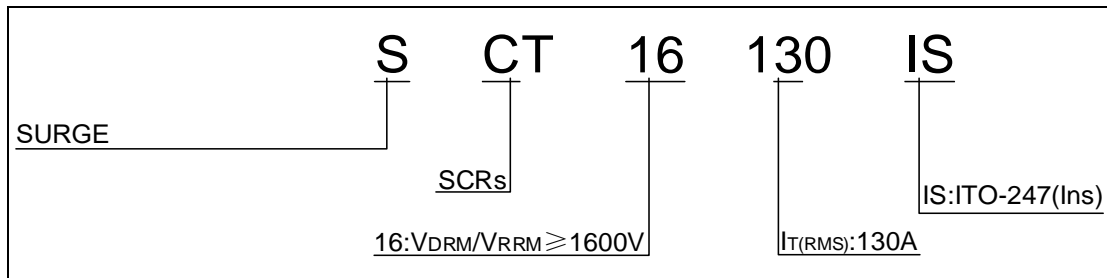
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=180A$ $t_p=380\mu s$	$T_j=25^\circ C$	1.6	V
$V_{TO}$	Threshold voltage	$T_j=125^\circ C$	0.86	V
$R_D$	Dynamic resistance	$T_j=125^\circ C$	4.5	m $\Omega$
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	20	$\mu A$
$I_{RRM}$		$T_j=125^\circ C$	12	mA

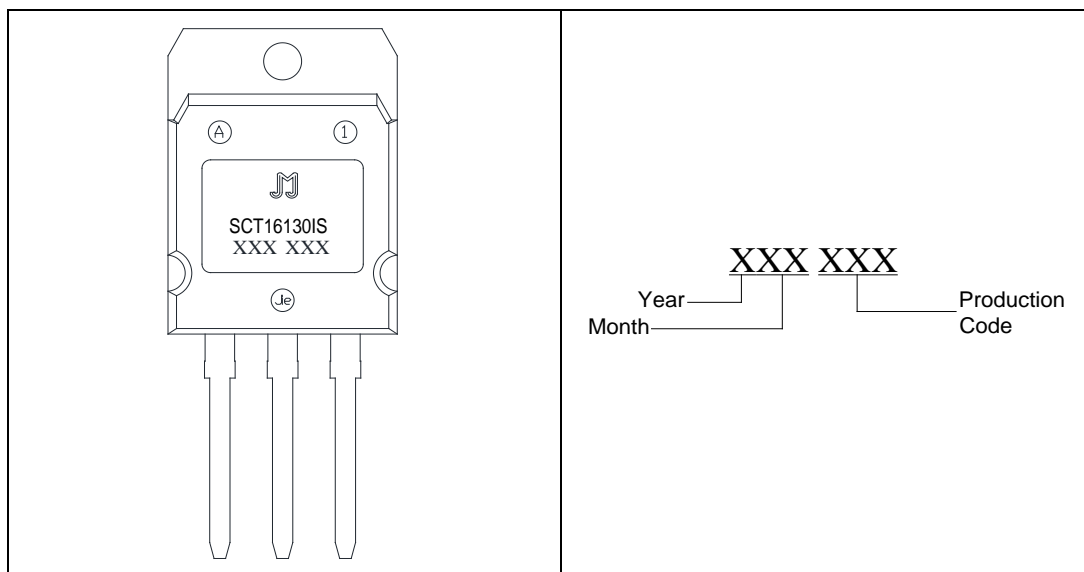
**THERMAL RESISTANCES**

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

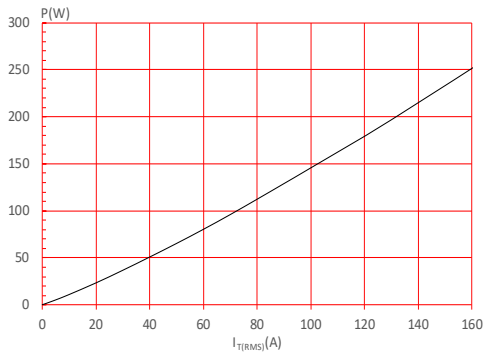
## ORDERING INFORMATION



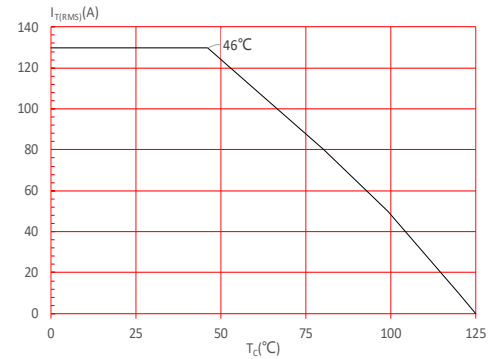
## MARKING



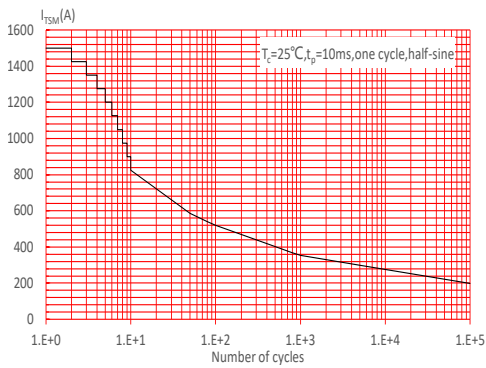
**FIG.1:** Maximum power dissipation versus RMS on-state current



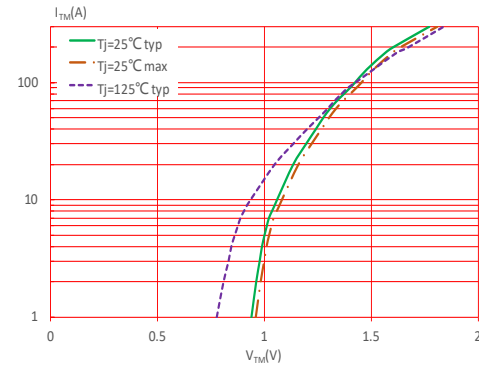
**FIG.2:** RMS on-state current versus case temperature



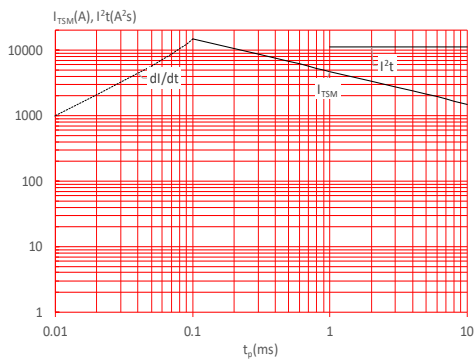
**FIG.3:** Surge peak on-state current versus number of cycles



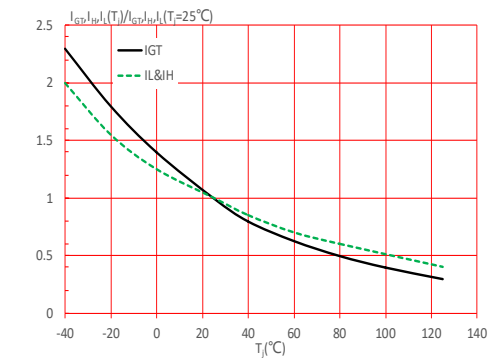
**FIG.4:** On-state characteristics



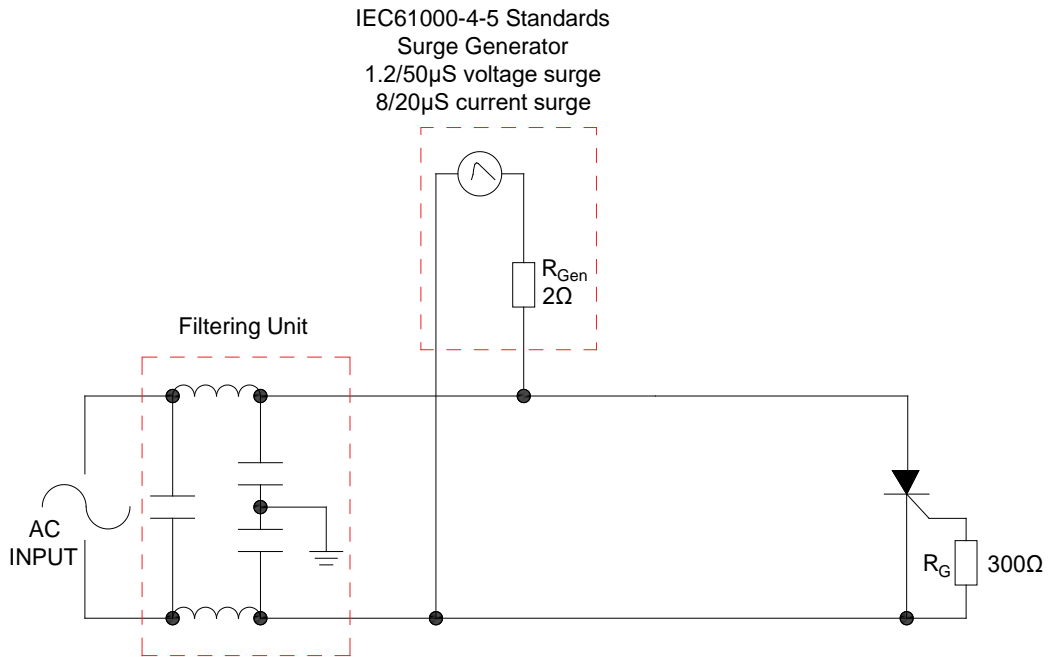
**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 250\text{A}/\mu\text{s}$ )



**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.



## LEAD FORMING AND SOLDERING

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

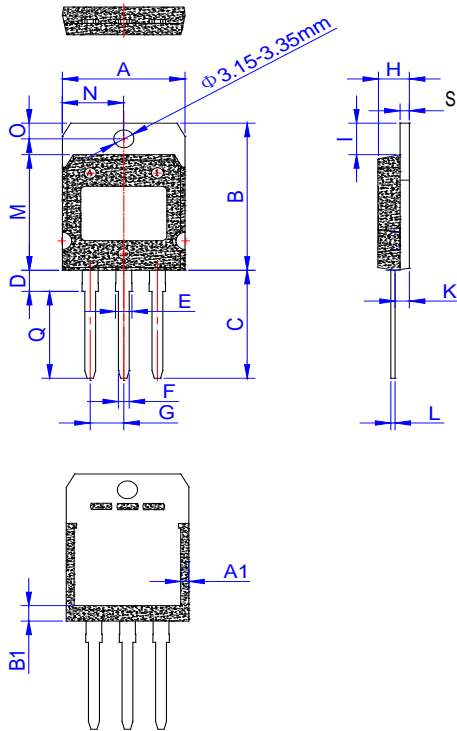
**ORDERING INFORMATION**

Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
SCT16130IS	1600	20-80	ITO-247(Ins)	25	Tube

**Document Revision History**

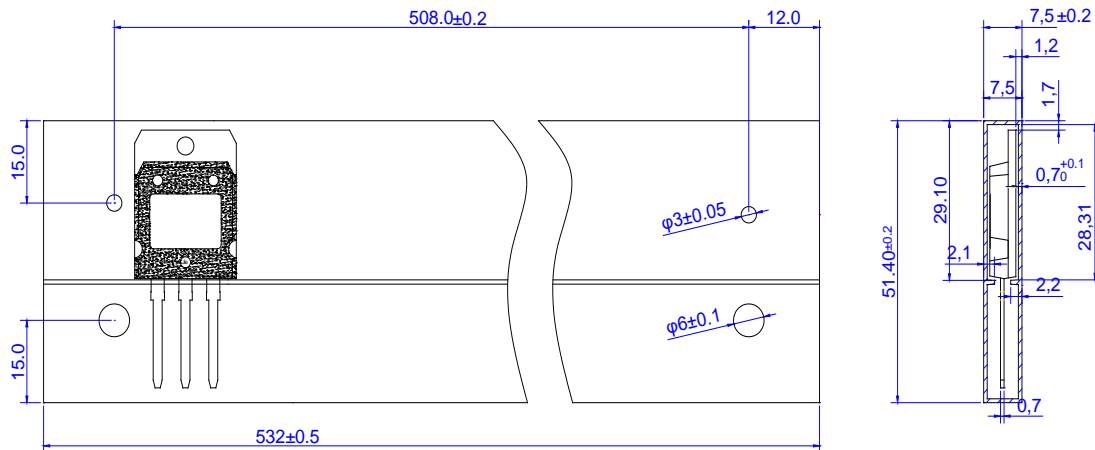
Date	Revision	Changes
Apr.13, 2023	A.1.0	Last update
Feb.19, 2024	A.1.1	Renew $R_{th(j-c)}$ & $V_{TM}$
Oct.16, 2025	A.1.2	Revise PACKAGE MECHANICAL DATA

## 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
S	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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