

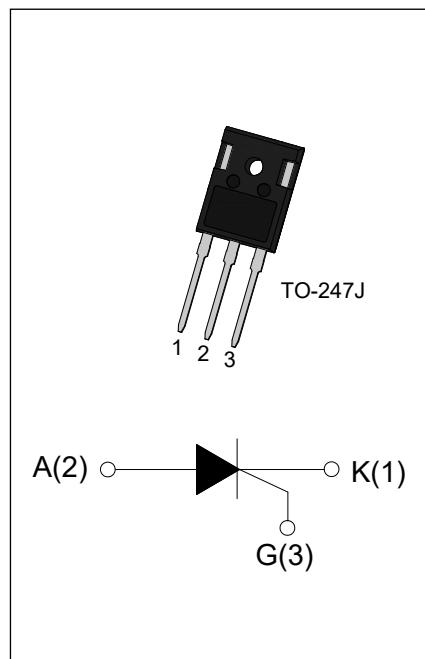


DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT50H-1200SJ SCRs provide high dv/dt rate with high frequency noise immunity. Products are especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc, UPS. Package TO-247J is RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
V_{DRM}/V_{RRM}	1200	V
$I_{T(RMS)}$	79	A
I_{GT}	10~70	mA



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit	
Storage junction temperature range	T_{stg}	-40~150	°C	
Operating junction temperature range	T_j	-40~150	°C	
Operating temperature range	T_{op}	-40~125	°C	
Repetitive peak off-state voltage($T_j=25^\circ\text{C}$)	V_{DRM}	1200	V	
Repetitive peak reverse voltage($T_j=25^\circ\text{C}$)	V_{RRM}	1200	V	
Average on-state current	TO-247J ($T_c=93^\circ\text{C}$)	$I_{T(AV)}$	50	A
RMS on-state current	TO-247J ($T_c=93^\circ\text{C}$)	$I_{T(RMS)}$	79	A
Non repetitive surge peak on-state current ($t_p=10\text{ms}$)	I_{TSM}	600	A	
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	1800	A^2s	
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	200	$\text{A}/\mu\text{s}$	
Peak gate current	I_{GM}	5	A	
Average gate power dissipation	$P_{G(AV)}$	1	W	

Peak gate power	P_{GM}	10	W
Peak pulse voltage ($T_j=25^{\circ}\text{C}$; non-repetitive, off-state; FIG.7)	V_{pp}	1.3	kV

ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	10	-	70	mA
V_{GT}		-	-	1.3	V
V_{GD}	$V_D=V_{DRM}$ $T_j=150^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	200	mA
I_H	$I_T=1\text{A}$	-	-	150	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=150^{\circ}\text{C}$	1500	-	-	V/ μs
t_{on}	$I_G=60\text{mA}$ $I_A=400\text{mA}$ $I_R=40\text{mA}$ $T_j=25^{\circ}\text{C}$	-	5	-	μs
t_{off}		-	150	-	μs

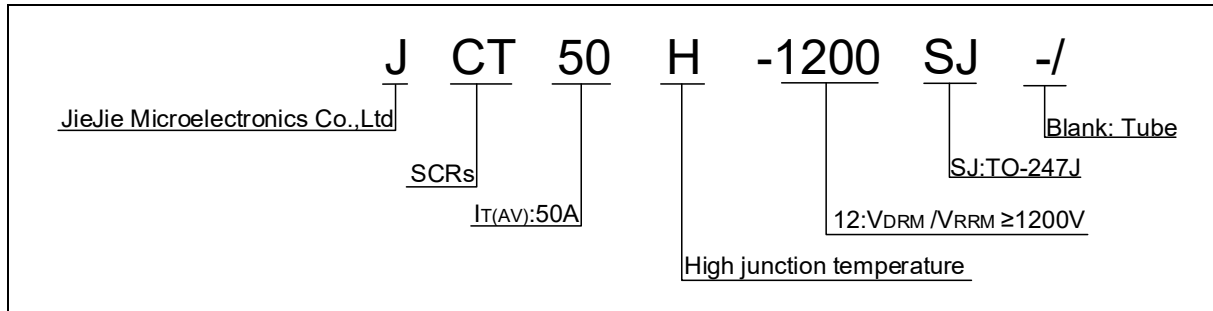
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=100\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
V_{T0}	Threshold voltage	$T_j=150^{\circ}\text{C}$	0.97	V
R_d	Dynamic resistance	$T_j=150^{\circ}\text{C}$	5.4	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	10	μA
I_{RRM}		$T_j=150^{\circ}\text{C}$	3	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-247J	0.5	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION



MARKING

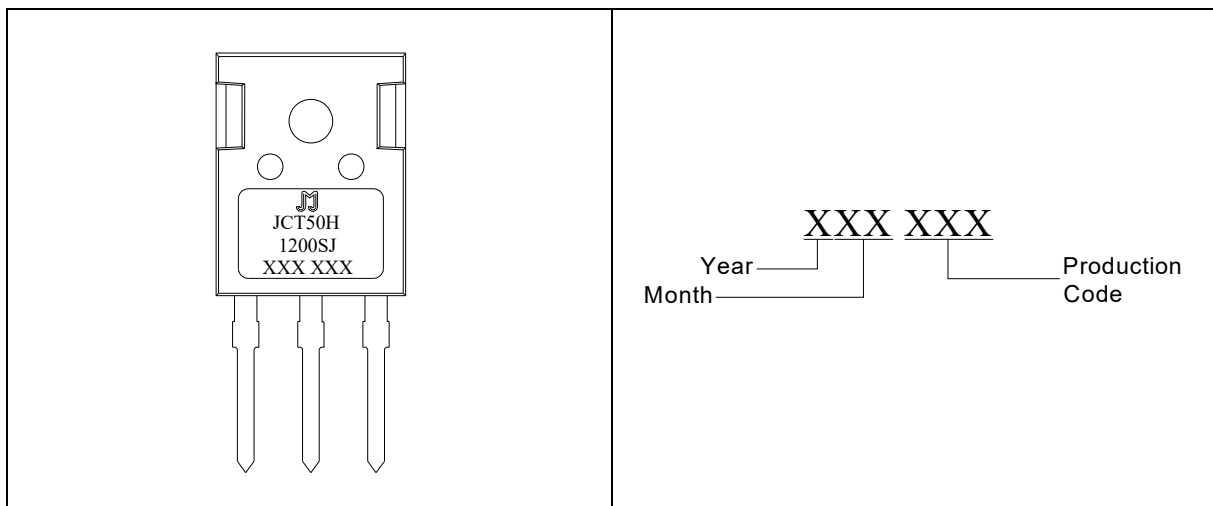


FIG.1: Maximum power dissipation versus RMS on-state current

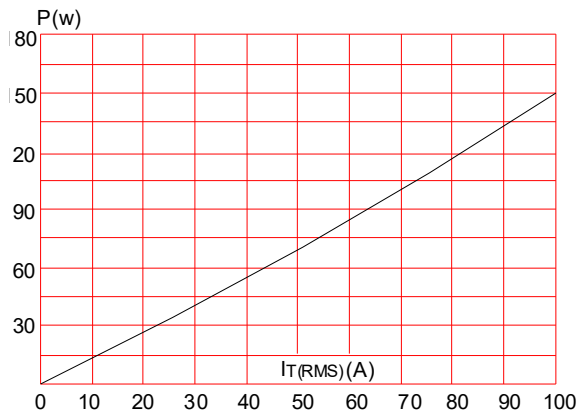


FIG.2: RMS on-state current versus case temperature

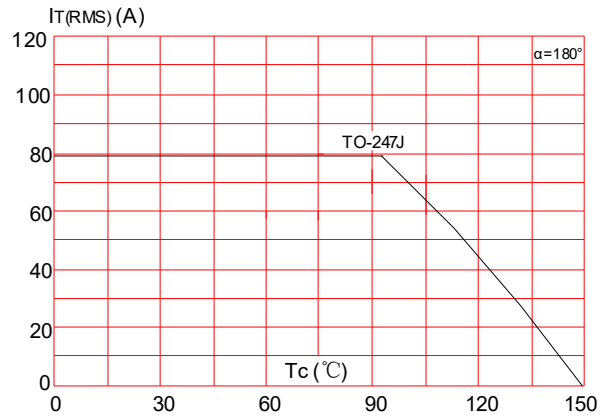


FIG.3: Surge peak on-state current versus number of cycles

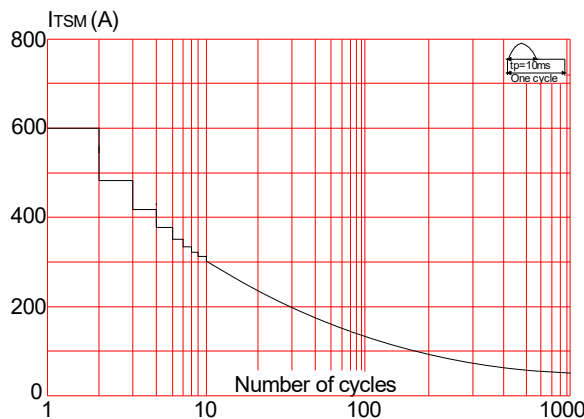


FIG.4: On-state characteristics (maximum values)

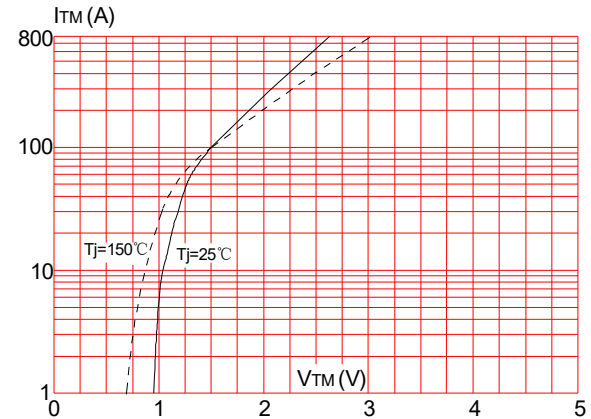


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 200\text{A}/\mu\text{s}$)

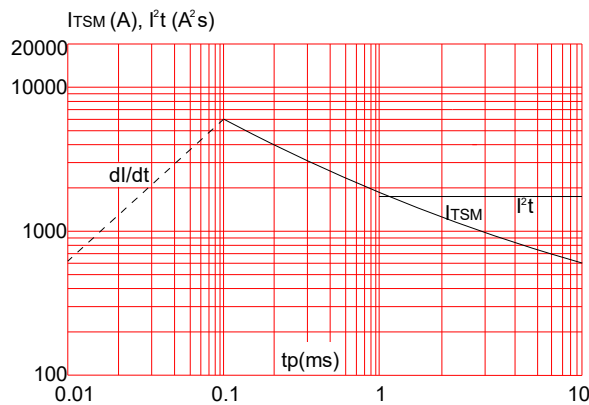


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

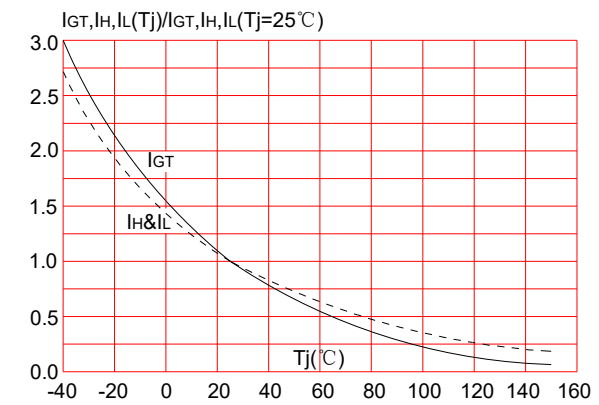
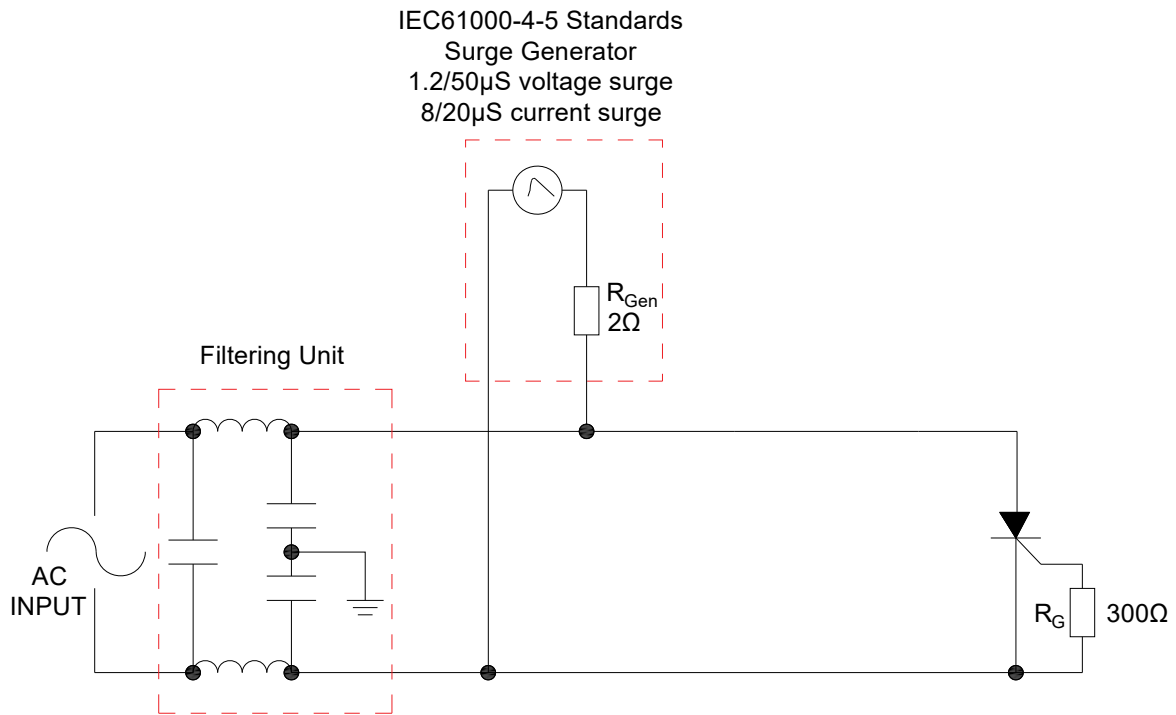


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



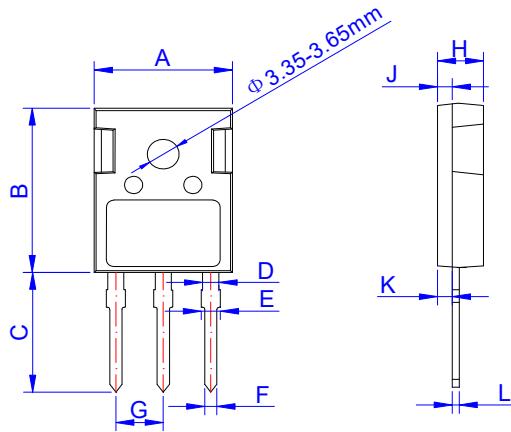
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT50H-1200SJ	1200	10~70	TO-247J	30	Tube

Document Revision History

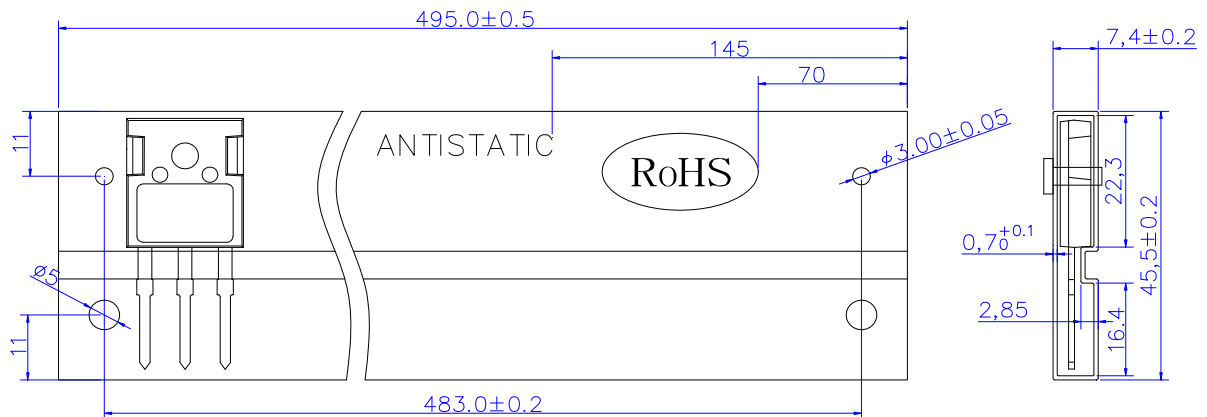
Date	Revision	Changes
Apr 29, 2022	1.1	Last update

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	22.20	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	5.25		5.65	0.207		0.222
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

DELIVERY MODE



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



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