

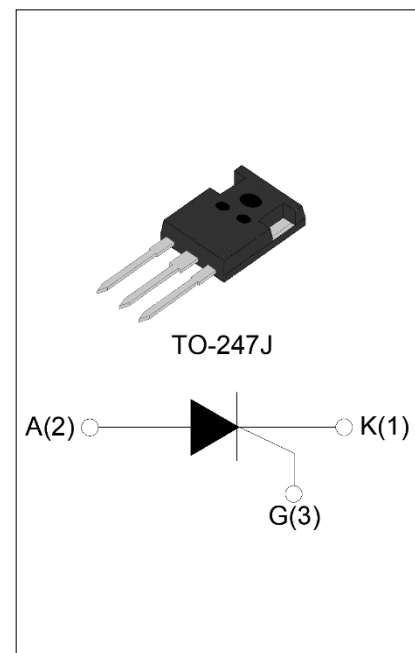


DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT655SJ 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-247J is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	55	A
V_{DRM}/V_{RRM}	600	V
I_{GT}	10-50	mA



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range	T_j	-40-125	$^{\circ}C$
Repetitive peak off-state voltage ($T_j=25^{\circ}C$)	V_{DRM}	600	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)	V_{RRM}	600	V
Average on-state current ($T_c \leq 87^{\circ}C$)	$I_{T(AV)}$	35	A
RMS on-state current ($T_c \leq 87^{\circ}C$)	$I_{T(RMS)}$	55	A
Non repetitive surge peak on-state current ($t_p=10ms$, $T_j=25^{\circ}C$)	I_{TSM}	700	A
Non repetitive surge peak on-state current ($t_p=8.3ms$, $T_j=25^{\circ}C$)		750	
I^2t value for fusing ($t_p=10ms$, $T_j=25^{\circ}C$)	I^2t	2450	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100Hz$, $T_j=125^{\circ}C$)	di/dt	200	$A/\mu s$
Peak gate current ($t_p=20\mu s$, $T_j=125^{\circ}C$)	I_{GM}	10	A
Average gate power dissipation ($T_j=125^{\circ}C$)	$P_{G(AV)}$	1	W

Peak gate power	P_{GM}	20	W
Peak pulse voltage ($T_j=25^{\circ}\text{C}$; non-repetitive, off-state; FIG.7)	V_{pp}	0.7	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	-	50	mA
V_{GT}		-	-	1	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^{\circ}\text{C}$ $R_L=3.3\text{k}\Omega$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	120	mA
I_H	$I_T=500\text{mA}$	-	-	100	mA
dV/dt	$V_D=400\text{V}$ Gate Open $T_j=125^{\circ}\text{C}$	2000	-	-	V/ μs
t_{on}	$I_G=50\text{mA}$ $I_A=500\text{mA}$ $I_R=50\text{mA}$ $T_j=25^{\circ}\text{C}$	-	4	-	μs
t_{off}		-	130	-	

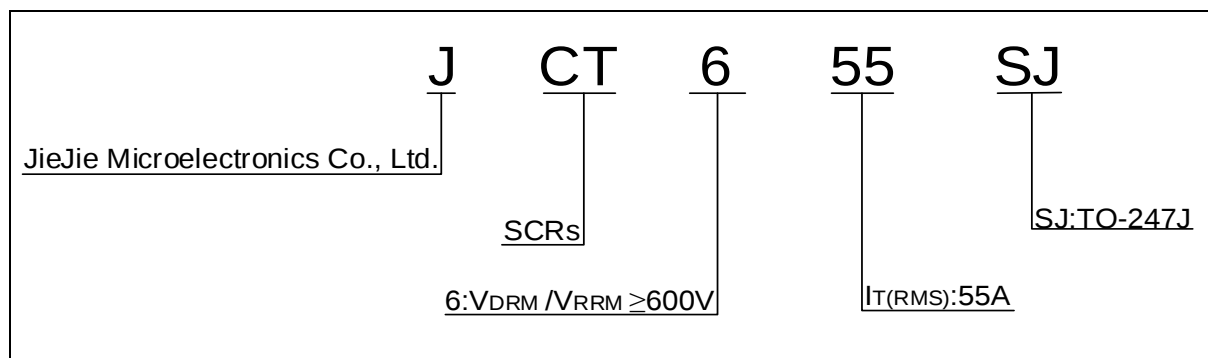
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=80\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.76	V
R_D	Dynamic resistance	$T_j=125^{\circ}\text{C}$	8.5	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	8	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	4	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (DC)	0.5	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (DC)	50	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION



MARKING

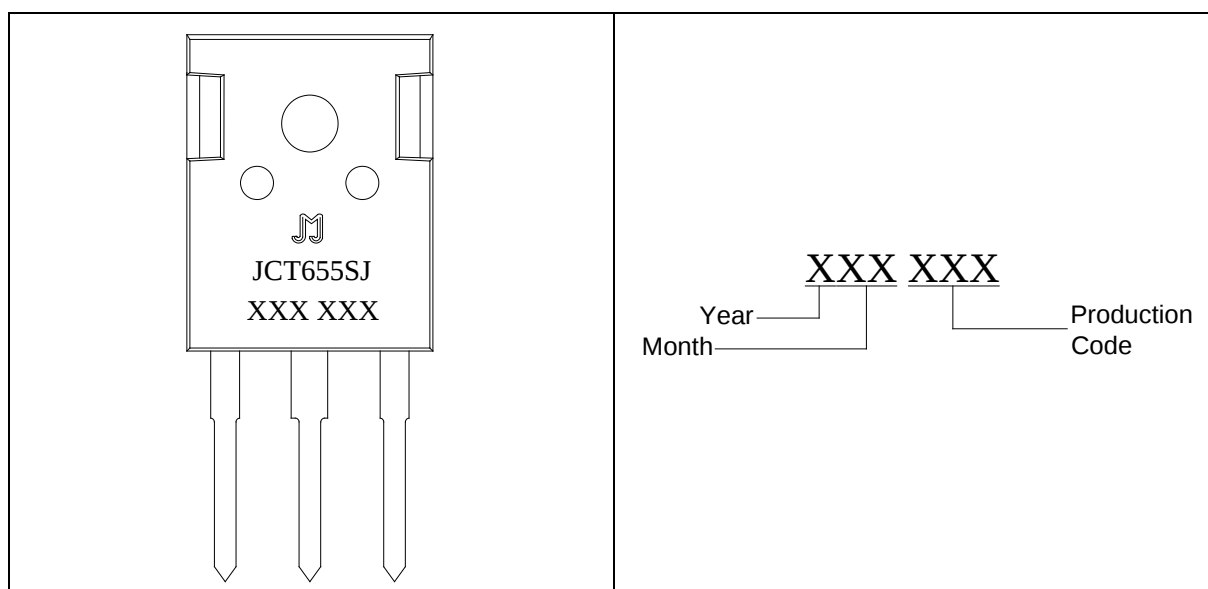


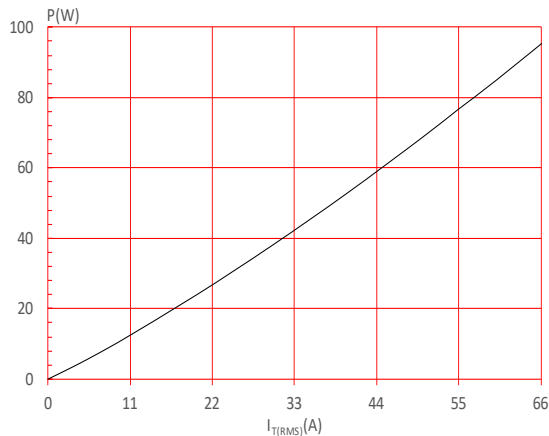
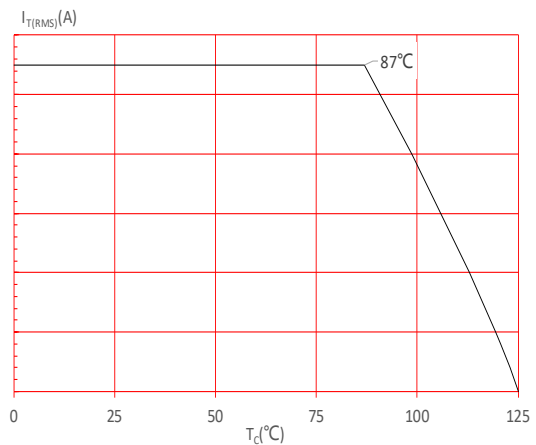
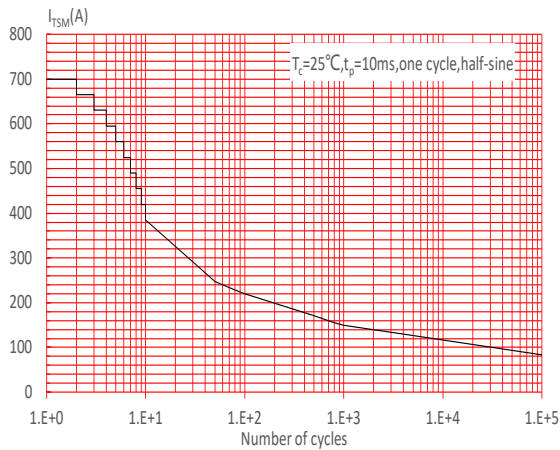
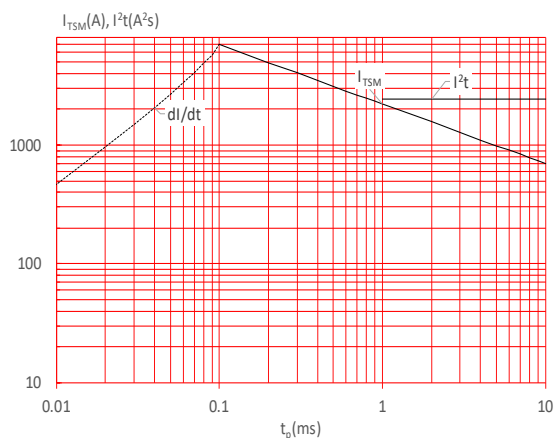
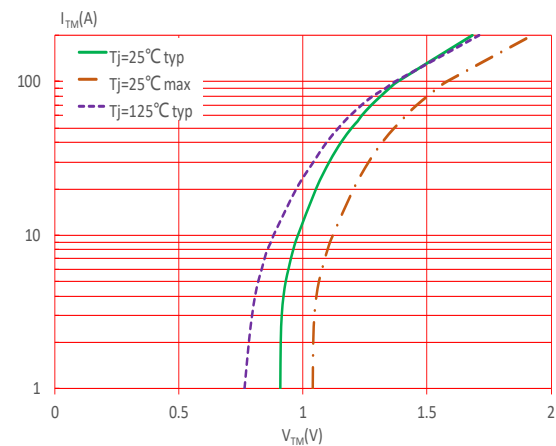
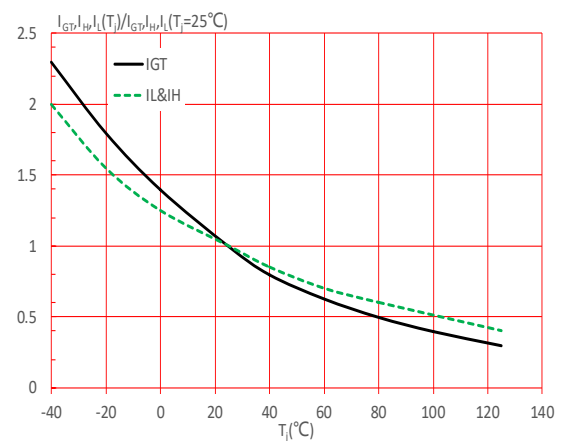
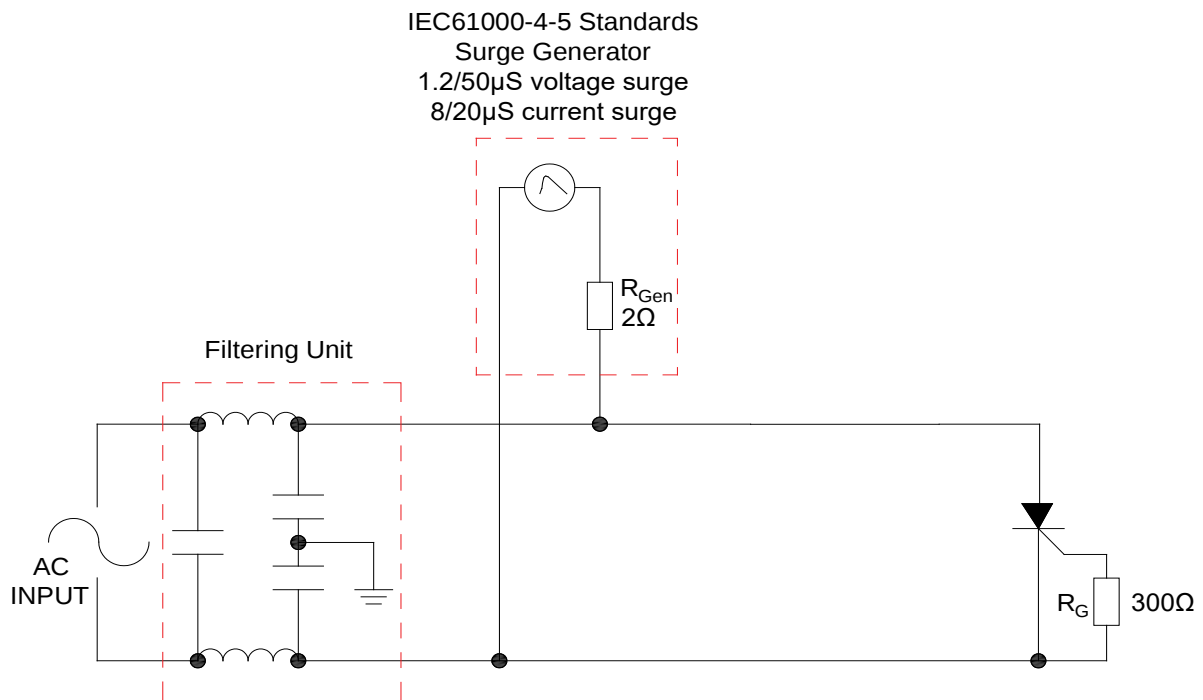
FIG.1: Maximum power dissipation versus RMS on-state current**FIG.2:** RMS on-state current versus case temperature**FIG.3:** Surge peak on-state current versus number of cycles**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$, and corresponding value of I^2t ($di/dt < 200A/\mu s$)**FIG.4:** On-state characteristics**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 $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT655SJ	600	10-50	TO-247J	30	Tube

Document Revision History

Date	Revision	Changes
Apr.13, 2023	A.1.0	Last update
Jan.8, 2025	A.2.0	Update Package
Oct.16, 2025	A.2.1	Revise PACKAGE MECHANICAL DATA

Technical drawing of a 3-pin DIN connector, showing three views: front, side, and top.

Front View (Top): Shows the connector body with three pins. Dimensions include:

- A:** Total width of the connector body.
- O:** Width of the top mounting flange.
- B:** Height of the connector body.
- C:** Total height including the pins.
- C1:** Height of the pins.
- C2:** Height of the connector body.
- D:** Width of the central pin.
- E:** Width of the side pins.
- F:** Distance between the pins.
- G:** Width of the pin base.
- G1:** Width of the pin base.
- H:** Height of the top mounting flange.
- I:** Width of the top mounting flange.
- J:** Width of the top mounting flange.
- K:** Width of the top mounting flange.
- L:** Width of the top mounting flange.
- M:** Width of the top mounting flange.
- N:** Width of the top mounting flange.
- O:** Width of the top mounting flange.
- P:** Width of the top mounting flange.
- Q:** Width of the top mounting flange.
- R:** Width of the top mounting flange.
- S:** Width of the top mounting flange.
- T:** Width of the top mounting flange.

Side View (Right): Shows the profile of the connector. Dimensions include:

- H:** Height of the top mounting flange.
- I:** Width of the top mounting flange.
- J:** Width of the top mounting flange.
- K:** Width of the top mounting flange.
- L:** Width of the top mounting flange.
- M:** Width of the top mounting flange.
- N:** Width of the top mounting flange.
- O:** Width of the top mounting flange.
- P:** Width of the top mounting flange.
- Q:** Width of the top mounting flange.
- R:** Width of the top mounting flange.
- S:** Width of the top mounting flange.
- T:** Width of the top mounting flange.

Top View (Bottom): Shows the top of the connector body. Dimensions include:

- A1:** Width of the top mounting flange.
- B1:** Height of the top mounting flange.

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.50		16.10	0.610		0.634
A1	1.15		1.55	0.045		0.061
B	20.80		21.20	0.819		0.835
B1	3.10		3.50	0.122		0.138
C	19.70		20.30	0.776		0.799
C1	15.50		16.10	0.610		0.634
C2	40.60		41.40	1.598		1.630
D	2.90		3.30	0.114		0.130
E	1.90		2.30	0.075		0.091
F	1.00		1.40	0.039		0.055
G		5.44			0.214	
G1	10.68		11.08	0.420		0.436
H	4.80		5.20	0.189		0.205
J	1.90		2.10	0.075		0.083
K	2.20		2.50	0.087		0.098
L	0.41		0.79	0.016		0.031
M	3.70		3.90	0.146		0.154
N	3.55		3.70	0.140		0.146
O	7.60		8.20	0.299		0.323
P	4.05		4.25	0.159		0.167
Q	5.85		6.45	0.230		0.254

[illegible]

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

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