

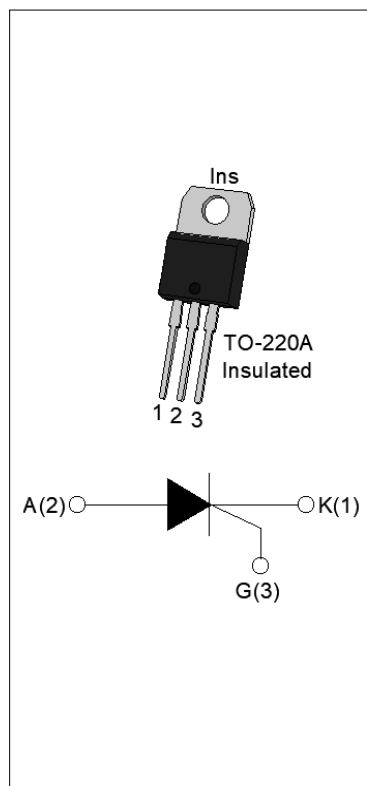


JCT610A 10A SCR

Rev.A.1.0

DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT610A of silicon controlled rectifiers 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. From all three terminals to external heatsink, JCT610A provides a rated insulation voltage of 2500 V_{RMS} , complying with UL standards (File ref: E252906). Package TO-220A is RoHS compliant.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	10	A
V_{DRM}/V_{RRM}	600	V
I_{GT}	10	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 ($T_j=25^\circ C$)	V_{DRM}	600	V
Repetitive peak reverse voltage ($T_j=25^\circ C$)	V_{RRM}	600	V
Average on-state current ($T_C = 89^\circ C$)	$I_{T(AV)}$	6.5	A
RMS on-state current ($T_C = 89^\circ C$)	$I_{T(RMS)}$	10	A
Non repetitive surge peak on-state current ($t_p=10ms, T_j=25^\circ C$)	I_{TSM}	110	A
Non repetitive surge peak on-state current ($t_p=8.3ms, T_j=25^\circ C$)		120	
I^2t value for fusing ($t_p=10ms, T_j=25^\circ C$)	I^2t	61	A^2s
Critical rate of rise of on-state current ($I_G=2 I_{GT}, f=100Hz, T_j=125^\circ C$)	di/dt	100	A/s

Peak gate current ($t_p=20\text{ s}$, $T_j=125\text{ }^\circ\text{C}$)	I_{GM}	4	A
Average gate power dissipation ($T_j=125\text{ }^\circ\text{C}$)	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W
Peak pulse voltage ($T_j=25\text{ }^\circ\text{C}$; non-repetitive,off-state;FIG.7)	V_{pp}	0.7	kV

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12V\ R_L=33$	-	-	10	mA
V_{GT}		-	-	1	V
V_{GD}	$V_D=V_{DRM}\ T_j=125\text{ }^\circ\text{C}\ R_L=3.3K$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	40	mA
I_H	$I_T=500mA$	-	-	30	mA
dV/dt	$V_D=400V$ Gate Open $T_j=125\text{ }^\circ\text{C}$	1000	-	-	V/s
t_{on}	$I_G=20mA\ I_A=200mA\ I_R=20mA$ $T_j=25\text{ }^\circ\text{C}$	-	3	-	s
t_{off}		-	50	-	

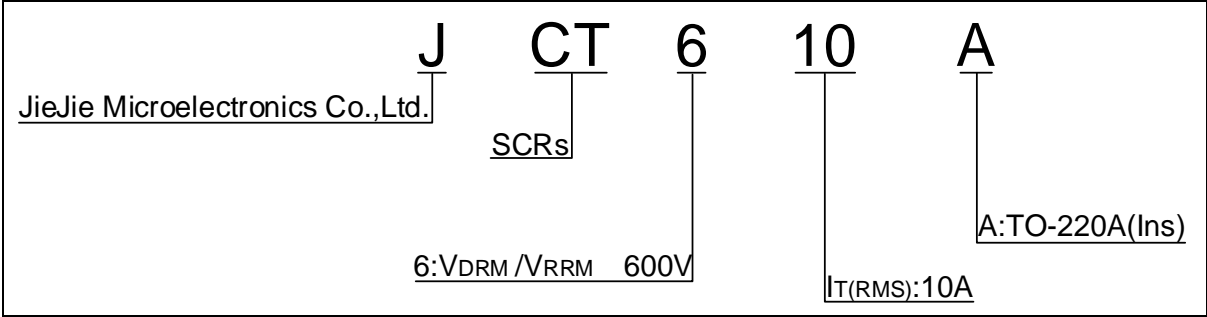
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=20A\ t_p=380\text{ s}$	$T_j=25\text{ }^\circ\text{C}$	1.55	V
V_{TO}	Threshold voltage	$T_j=125\text{ }^\circ\text{C}$	0.772	V
R_D	Dynamic resistance	$T_j=125\text{ }^\circ\text{C}$	26.5	
I_{DRM}	$V_D=V_{DRM}\ V_R=V_{RRM}$	$T_j=25\text{ }^\circ\text{C}$	5	A
I_{RRM}		$T_j=125\text{ }^\circ\text{C}$	0.2	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case(DC)	2.5	/W
$R_{th(j-a)}$	junction to ambient (DC)	60	/W

ORDERING INFORMATION



MARKING

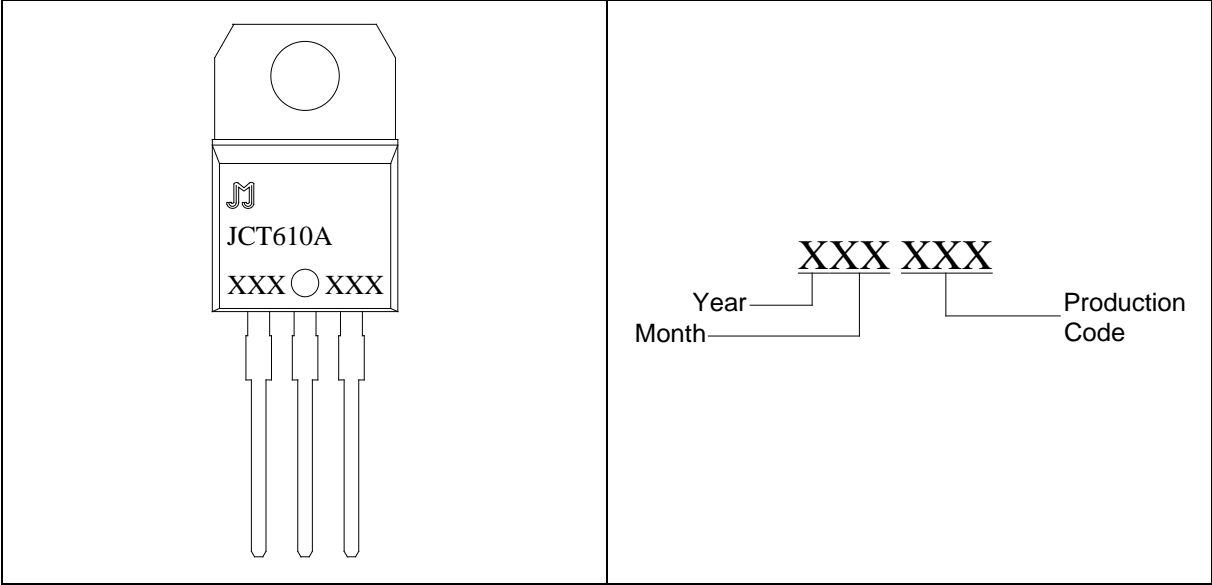
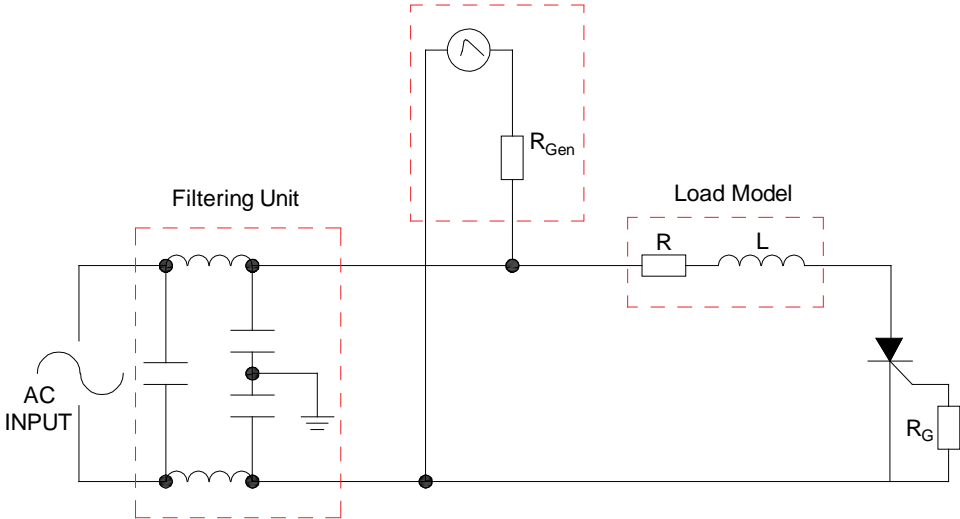


FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.

IEC61000-4-5 Standards
Surge Generator



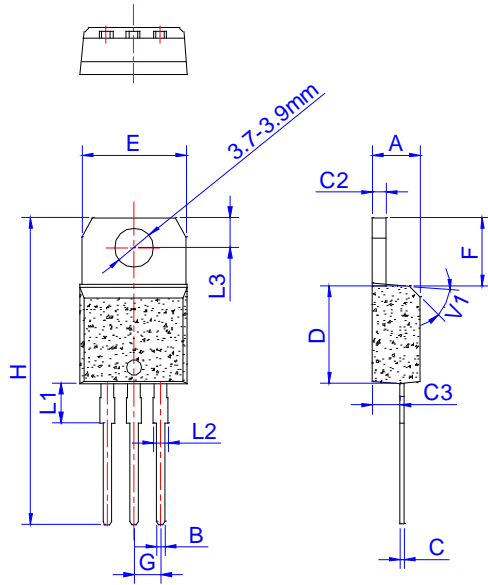
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT610A	600	10	TO-220A(Ins)	50	Tube

Document Revision History

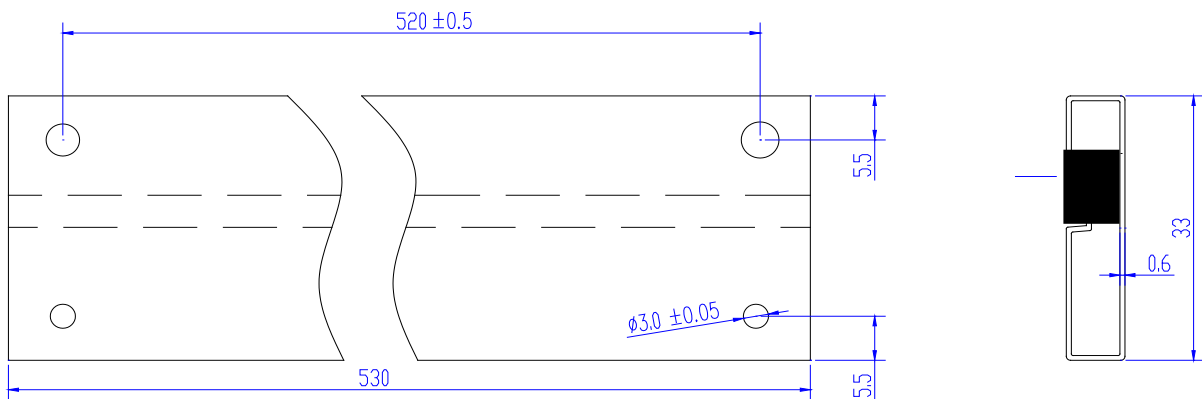
Date	Revision	Changes
Apr.12, 2023	A.1.0	Last update

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.25		6.85	0.246		0.270
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1	3.45		4.05	0.136		0.159
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

DELIVERY MODE



TEL

