

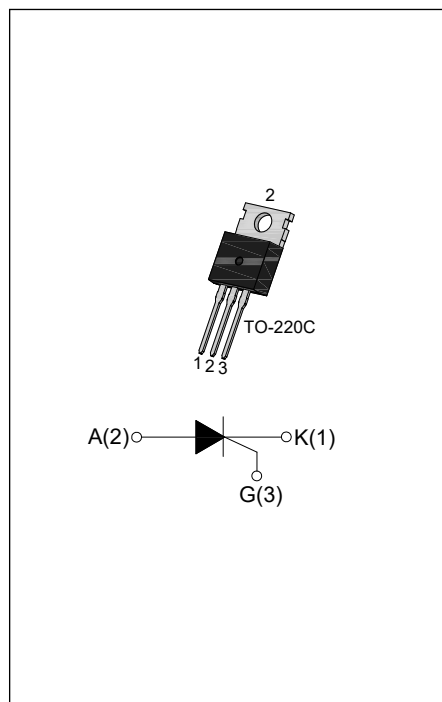


DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT1231C SCRs provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc. complying with UL standards (File ref: E252906). Package TO-220C is RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Symbol
V_{DRM}/V_{RRM}	1200	V
$I_{T(RMS)}$	30	A
I_{GT}	≤40	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($T_j=25^{\circ}C$)	V_{DRM}	1200	V	
Repetitive peak reverse voltage($T_j=25^{\circ}C$)	V_{RRM}	1200	V	
Non repetitive surge peak Off-state voltage	V_{DSM}	$V_{DRM} +100$	V	
Non repetitive peak reverse voltage	V_{RSM}	$V_{RRM} +100$	V	
RMS on-state current	TO-220C ($T_c=95^{\circ}C$)	$I_{T(RMS)}$	30	A
Non repetitive surge peak on-state current ($t_p=10ms$)	I_{TSM}	300	A	
I^2t value for fusing ($t_p=10ms$)	I^2t	450	A^2s	
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	150	$A/\mu s$	
Peak gate current	I_{GM}	1.5	A	

Average gate power dissipation	$P_{G(AV)}$	2.0	W
Peak gate power	P_{GM}	5	W

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	-	-	40	mA
V_{GT}		-	-	1.3	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	$I_G=1.2I_{GT}$	-	-	90	mA
I_H	$I_T=500\text{mA}$	-	-	50	mA
dv/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$	500	-	-	V/ μs

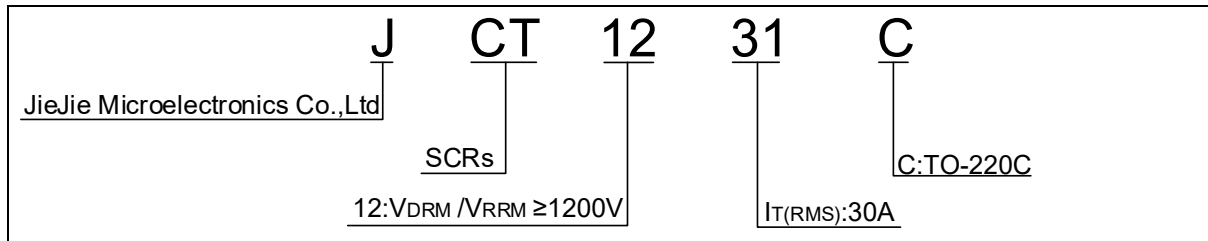
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=45\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.8	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	10	μA
I_{RRM}		$T_j=125^\circ\text{C}$	6	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220C	1.3	$^\circ\text{C/W}$

ORDERING INFORMATION



MARKING

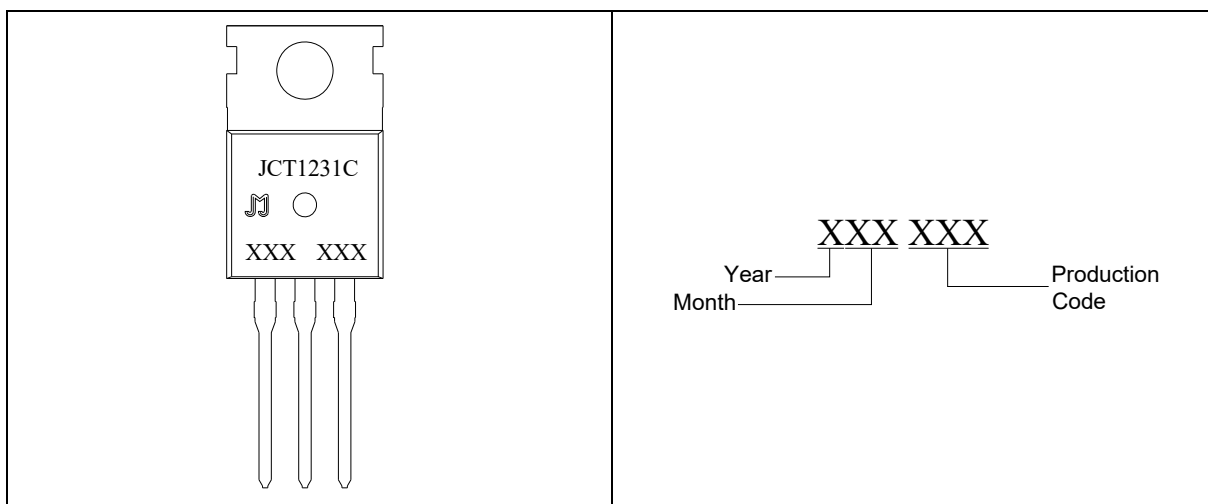


FIG.1 Maximum power dissipation versus RMS on-state current

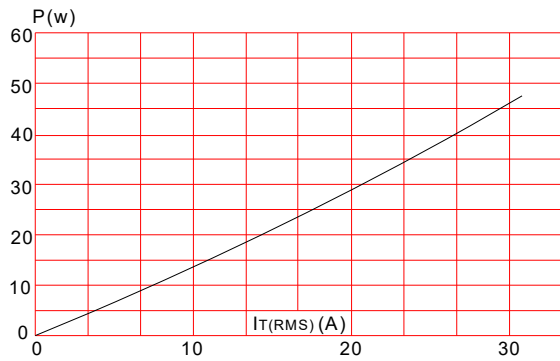


FIG.2: RMS on-state current versus case temperature

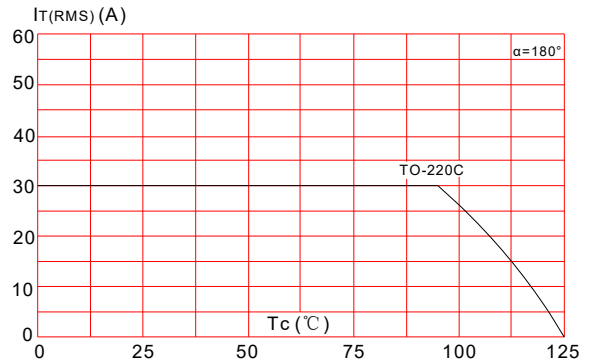


FIG.3: Surge peak on-state current versus number of cycles

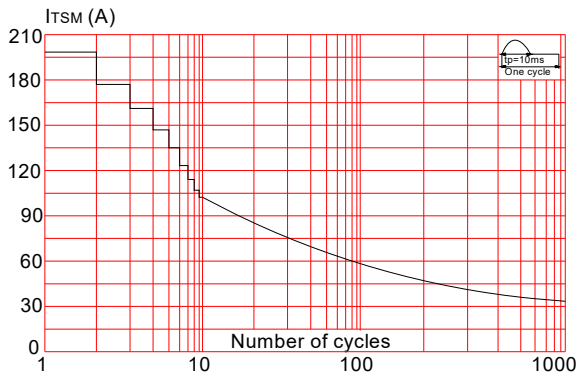


FIG.4: On-state characteristics (maximum values)

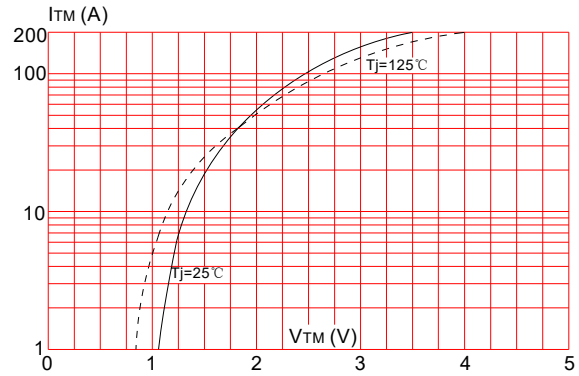


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 150\text{A}/\mu\text{s}$)

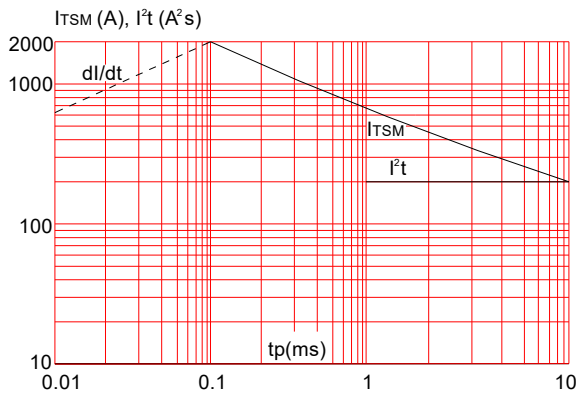
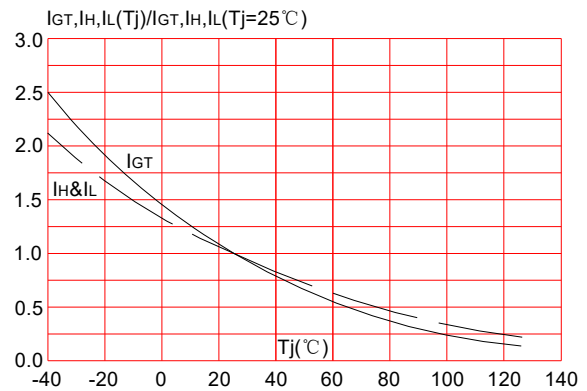


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



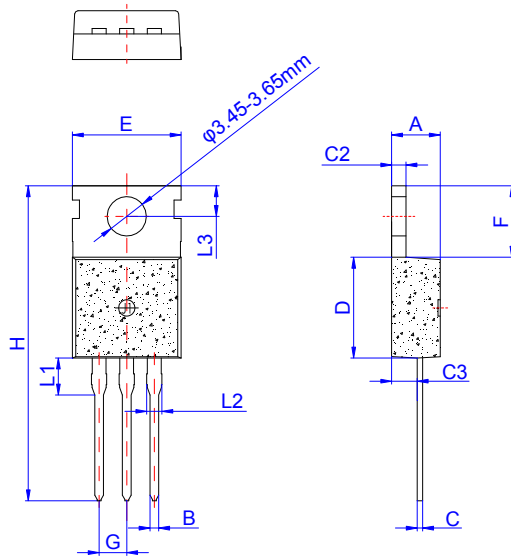
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT1231C	1200	40	TO-220C	50	Tube

Document Revision History

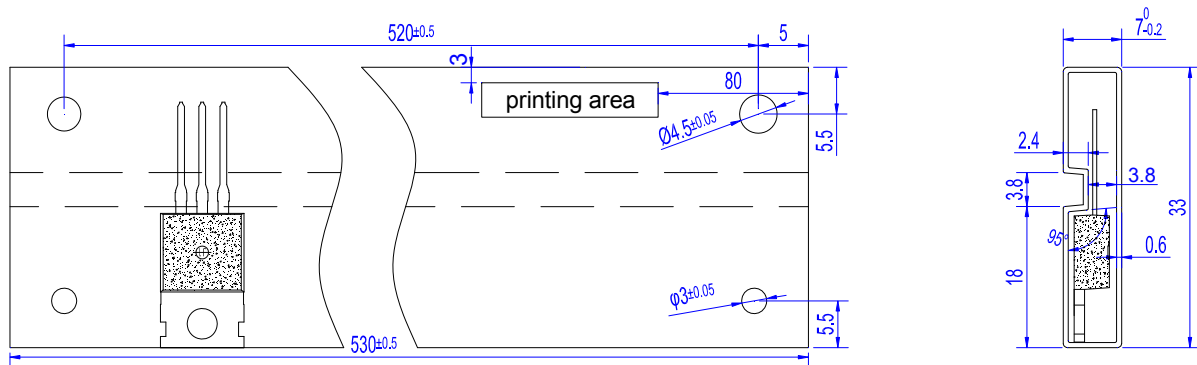
Date	Revision	Changes
Mar 19, 2022	1	Last update

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.39			0.133	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116

DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220C	TUBE	50	1,000	5,000



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