



JCT616C 16A SCR

Rev.A.1.1

DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT616C 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. Package TO-220C is RoHS compliant.



MAIN FEATURES

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T <sub>stg</sub>	-40-150	
Operating junction temperature range	T <sub>j</sub>	-40-125	
Repetitive peak off-state voltage (T <sub>j</sub> =25 °C)	V <sub>DRM</sub>	600	V
Repetitive peak reverse voltage (T <sub>j</sub> =25 °C)	V <sub>RRM</sub>	600	V
Average on-state current (T <sub>c</sub> 102 °C)	I <sub>T(AV)</sub>	10	A
RMS on-state current (T <sub>c</sub> 102 °C)	I <sub>T(RMS)</sub>	16	A
Non repetitive surge peak on-state current (t <sub>p</sub> =10ms, T <sub>j</sub> =25 °C)	I <sub>TSM</sub>	150	A
Non repetitive surge peak on-state current (t <sub>p</sub> =8.3ms, T <sub>j</sub> =25 °C)		165	

I<sup>2</sup>t value fore f7 (e fc 0.006 Tw 12 .2 re .149.5 ( )86 (ue (0.00t2.104 0 Td ( )T41.72 168.72 Tm8 3

Average gate power dissipation ( $T_j=125$ )	$P_{G(AV)}$	1	W
Peak gate power	$P_{GM}$	20	W
Peak pulse voltage ( $T_j=25$ ; non-repetitive,off-state;FIG.7)	$V_{pp}$	0.5	kV

**ELECTRICAL CHARACTERISTICS** ( $T_j=25$  unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
$I_{GT}$	$V_D=12V R_L=33$	-	-	15	mA
$V_{GT}$		-	-	1	V
$V_{GD}$	$V_D=V_{DRM} T_j=125 R_L=3.3k$	0.2	-	-	V
$I_L$	$I_G=1.2I_{GT}$	-	-	60	mA
$I_H$	$I_T=500mA$	-	-	50	mA
dV/dt	$V_D=400V$ Gate Open $T_j=125$	1200	-	-	V/ $\mu s$
$t_{on}$	$I_G=20mA I_A=200mA I_R=20mA$ $T_j=25$	-	4	-	$\mu s$
$t_{off}$		-	60	-	

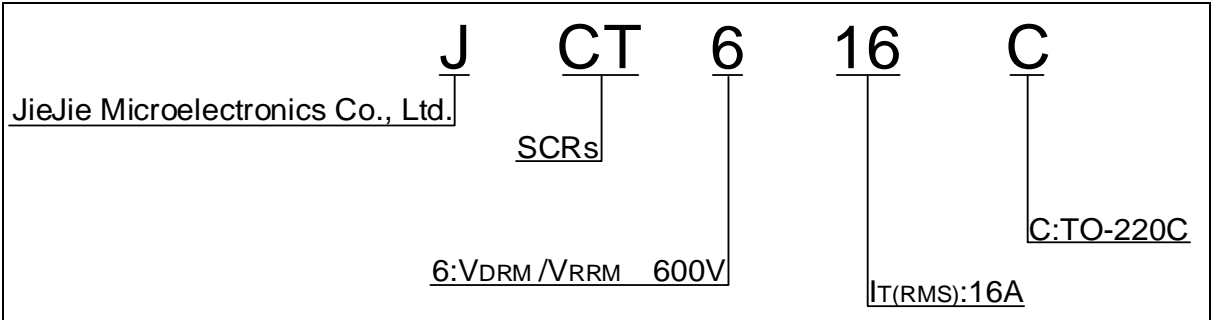
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=32A t_p=380\mu s$	$T_j=25$	1.55	V
$V_{TO}$	Threshold voltage	$T_j=125$	0.77	V
$R_D$	Dynamic resistance	$T_j=125$	24	m
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25$	5	$\mu A$
$I_{RRM}$		$T_j=125$	0.2	mA

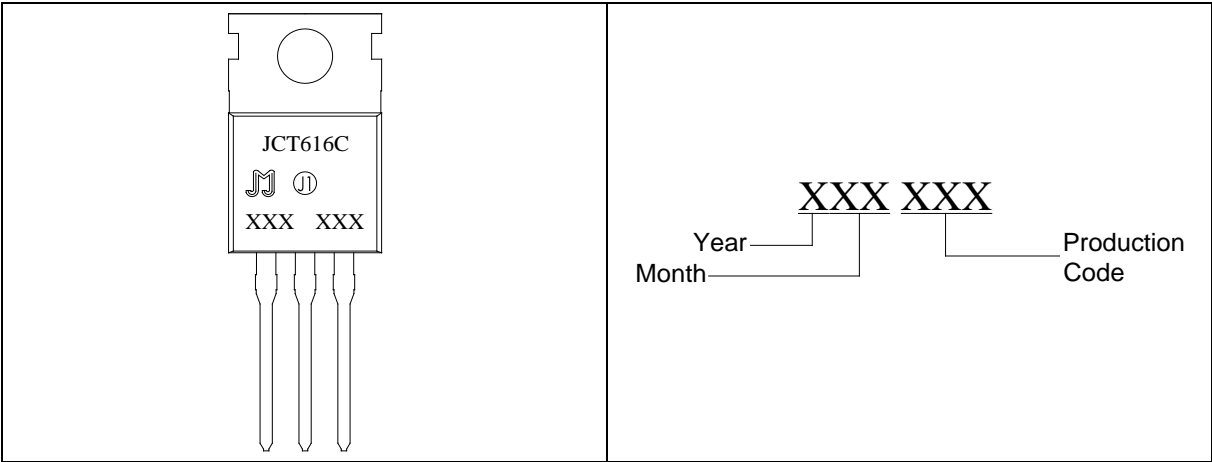
**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (DC)	1.1	$\text{/W}$
$R_{th(j-a)}$	junction to ambient (DC)	50	$\text{/W}$

ORDERING INFORMATION



MARKING

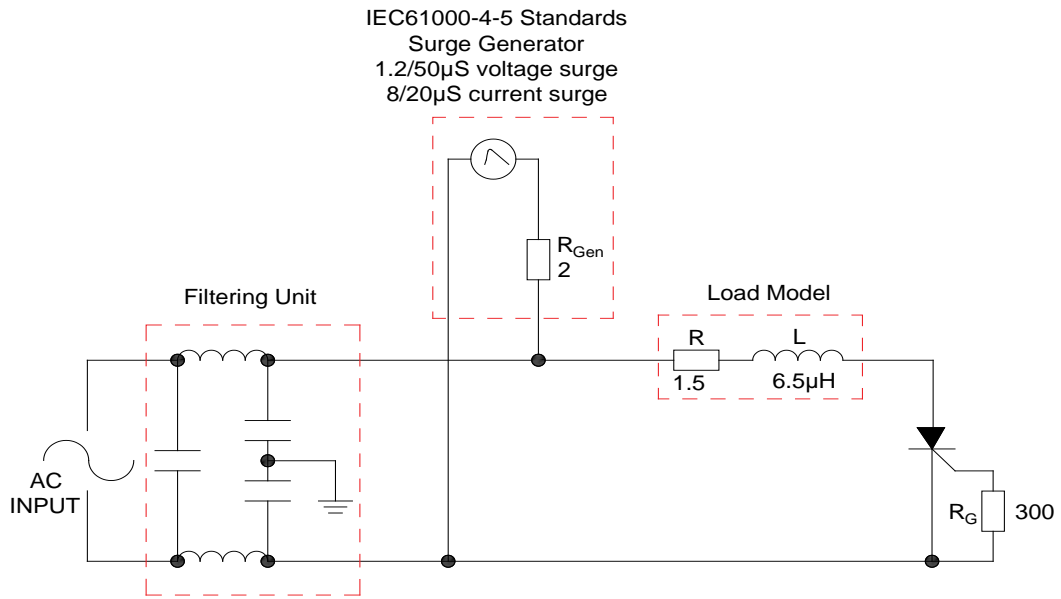


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**FIG.1:** Maximum power dissipation versus RMS on-state current

**FIG.2:** RMS on-state current -0.015 Tc 0.01 Tw -3.102 87.>J

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” released by JieJie Microelectronics



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