



JCT612A-FO 12A SCRs

Rev.1.2

DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT612A-FO of silicon controlled rectifiers 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. From all three terminals to external heatsink, JCT612A-FO provides a rated insulation voltage of 2500 V_{RMS}, complying with UL standards (File ref: E252906). Package TO-220A is RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	JCT612A-FO
V _{DRM} / V _{RRM}	600V
I _{T(RMS)}	12A
I _{GT}	3~6mA

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T _{stg}	-40-150	
Operating junction temperature range	T _j	-40-150	
Repetitive peak off-state voltage(T _j =150)	V _{DRM}	600	V
Repetitive peak reverse voltage(T _j =150)	V _{RRM}	600	V
RMS on-state current	TO-220A(Ins) (T _c =110		

Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	5	W
Peak pulse voltage ($T_j=25$; non-repetitive,off-state;FIG.7)	V_{pp}	0.6	kV

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12V R_L=33$	3	-	6	mA
V_{GT}		-	-	1.5	V
V_{GD}	$V_D=V_{DRM} T_j=150 R_L=3.3k$	0.2	-	-	V
		-	-	60	mA
I_H	$I_T=500mA$	-	-	50	mA
dv/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=150$	300	-	-	V s
t_{on}	$I_G=20mA I_A=200mA I_R=20mA$	-	-	4	s
t_{off}	$T_j=25$	-	-	12	s

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=23A t_p=380 s$	$T_j=25$	1.4	V
V_{TO}	Threshold voltage	$T_j=150$	0.9	V
R_d	Dynamic resistance	$T_j=150$	22.4	m
I_{DRM}/I_{RRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25$	5	A
		$T_j=150$	1	mA

JCT612A-FO

 **JieJie Microelectronics Co., Ltd.**

ORDERING INFORMATION

TEL

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

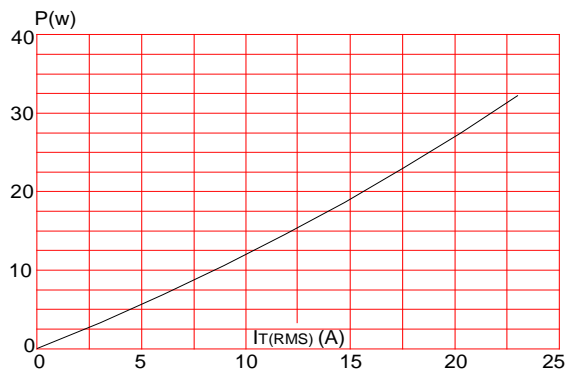


FIG.3: Surge peak on-state current versus number of cycles

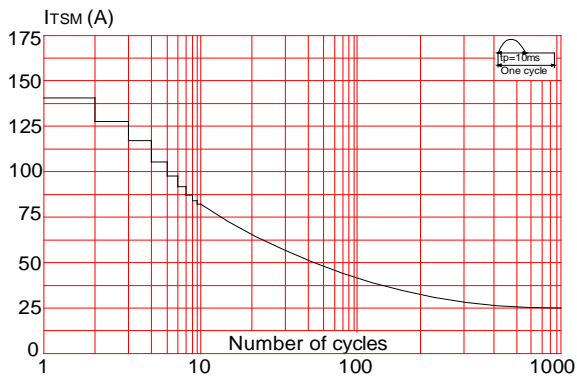


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of $\int I t$ ($dI/dt < 100\text{A/s}$)

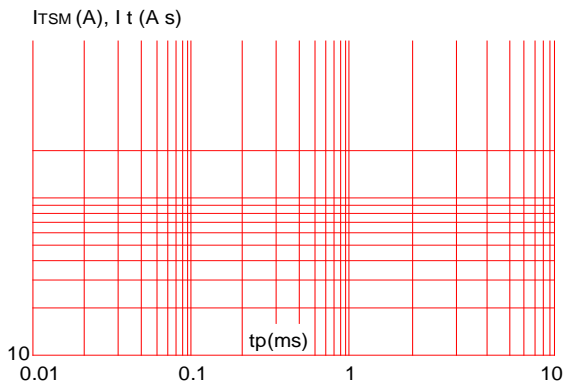


FIG.2: RMS on-state current versus case temperature

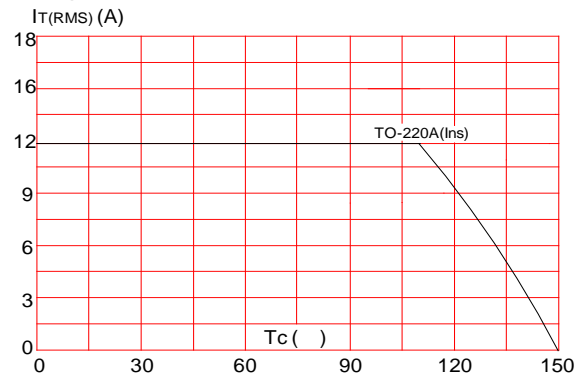


FIG.4: On-state characteristics (maximum values)

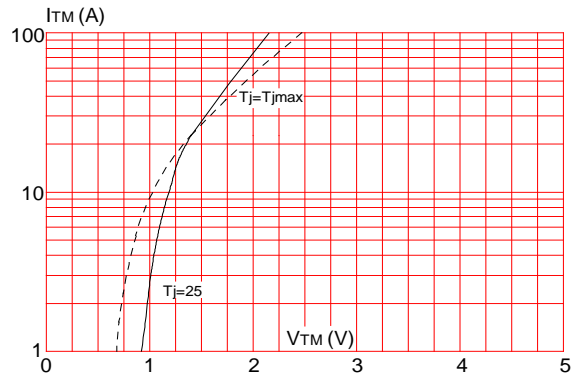


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

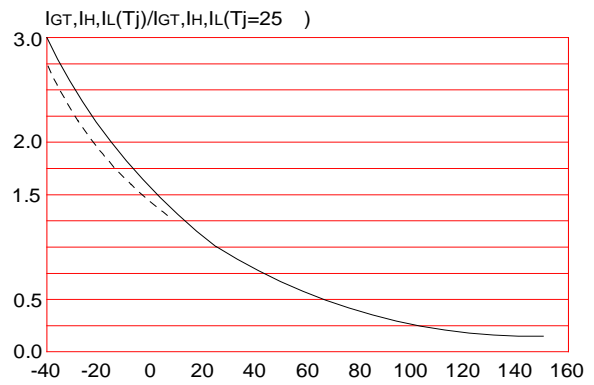
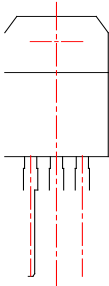



FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



PACKAGE MECHANICAL DATA



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