



## 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<sub>RMS</sub>, complying with UL standards (File ref: E252906). Package TO-220A is RoHS compliant. (2011/65/EU)

### MAIN FEATURES

Symbol	JCT612A-FO
V <sub>DRM</sub> / V <sub>RRM</sub>	600V
I <sub>T(RMS)</sub>	12A
I <sub>GT</sub>	3~6mA

### 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>	-40-150	
Repetitive peak off-state voltage(T <sub>j</sub> =150 )	V <sub>DRM</sub>	600	V
Repetitive peak reverse voltage(T <sub>j</sub> =150 )	V <sub>RRM</sub>	600	V

RMS on-state current TO-220A(Ins)  
(T<sub>c</sub>=110

# JCT612A-FO

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Average gate power dissipation	1	W
Peak gate power	5	W
Peak pulse voltage ( $T_j=25$ ; non-repetitive, off-state; FIC)	0.6	kV

## ELECTRICAL CHARACTERISTICS ( $T_j$ as specified)

Symbol	Test Condition	Value		Unit
		TYP.	MAX.	
$I_{GT}$	$V_D=12V R_L=33$	-	6	mA
$V_{GT}$		-	1.5	V
$V_{GD}$	$V_D=V_{DRM} T_j=150 R_L=33$	-	-	V
$I_L$	$I_G=1.2I_{GT}$	-	60	mA
$I_H$	$I_T=500mA$	-	50	mA
dv/dt	$V_D=2/3V_{DRM}$ Gate Open	-	-	V/s
$t_{on}$	$I_G=20mA I_A=200mA I_R=200mA$	-	4	s
$t_{off}$	$T_j=25$	-	12	s

## STATIC CHARACTERISTICS

Symbol	Parameter	Value(MAX)	Unit
$V_{TM}$	$I_{TM}=23A t_p=380 s$	1.4	V
$V_{TO}$	Threshold voltage	0.9	V
$R_d$	Dynamic resistance	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.**

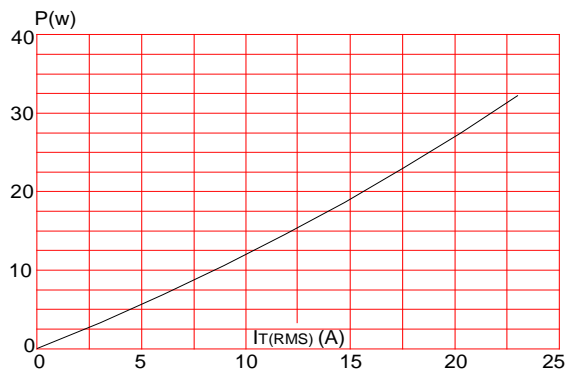
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**ORDERING INFORMATION**

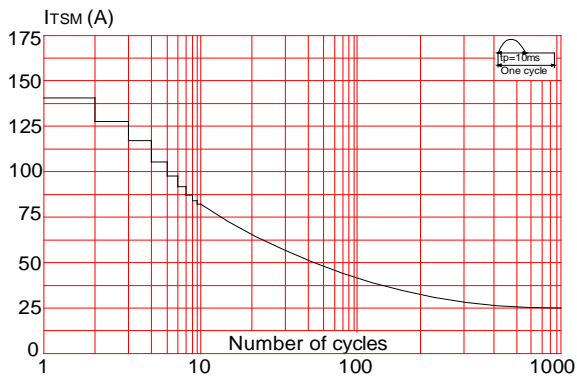
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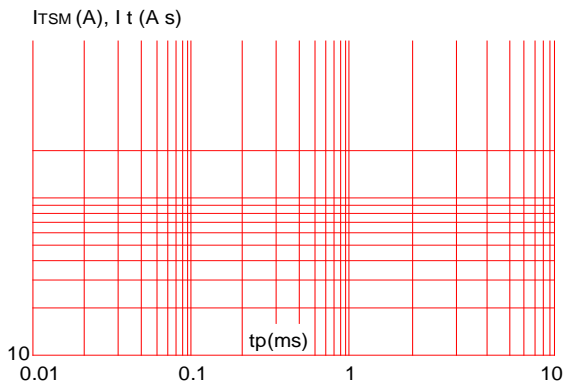
**FIG.1:** Maximum power dissipation versus RMS on-state current



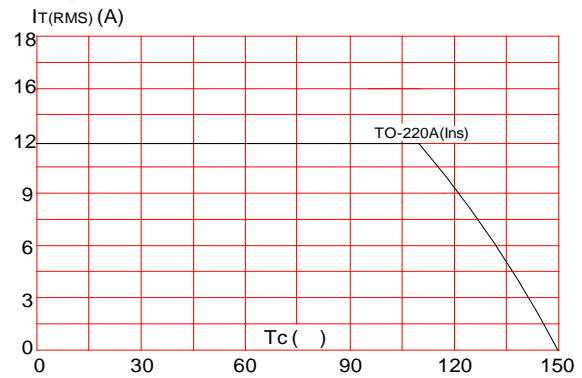
**FIG.3:** Surge peak on-state current versus number of cycles



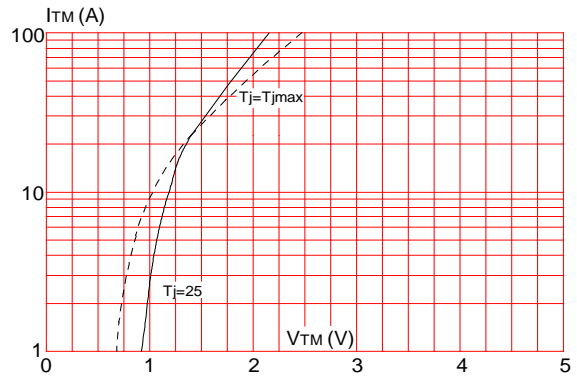
**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I t$  ( $dt/dt < 100\text{A/s}$ )



**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

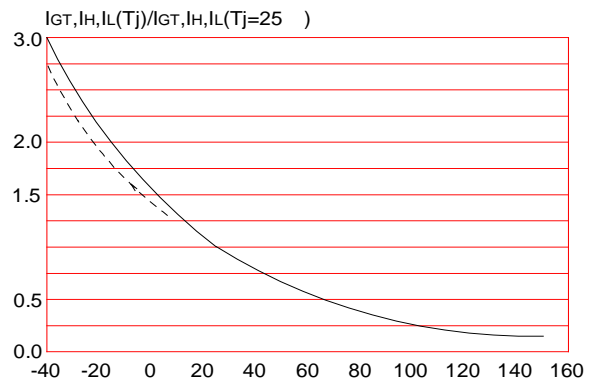
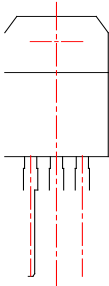



FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards -.167398386581



PACKAGE MECHANICAL DATA



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