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) (Tc=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)	Vpp	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
[redacted]		-	-	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 T_j=25	-	-	4	s
t_{off}		-	-	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
Rd	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

ORDERING INFORMATION

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

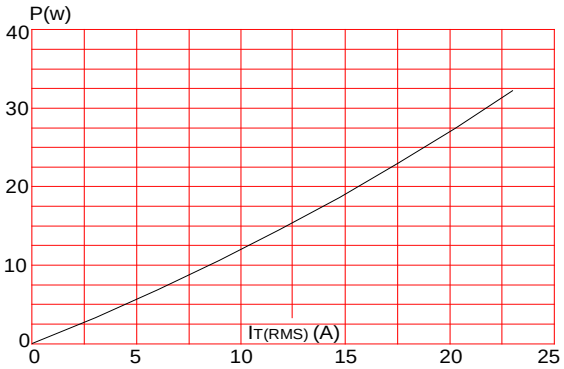

FIG.2: RMS on-state current versus case temperature

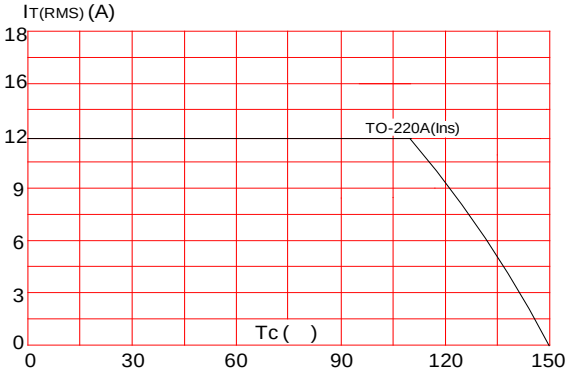

FIG.3: Surge peak on-state current versus number of cycles

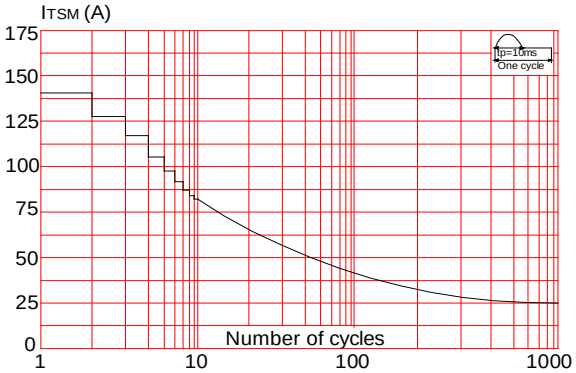

FIG.4: On-state characteristics (maximum values)

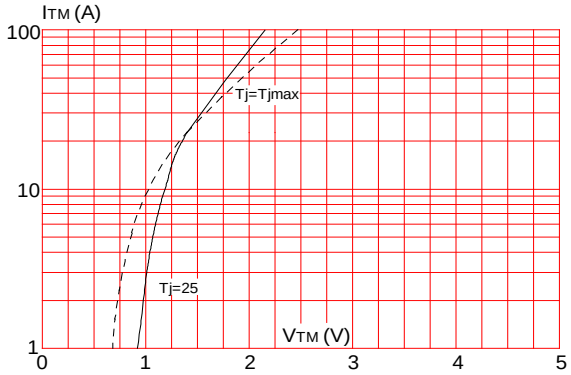

FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponging value of I t (dI/dt < 100A s)

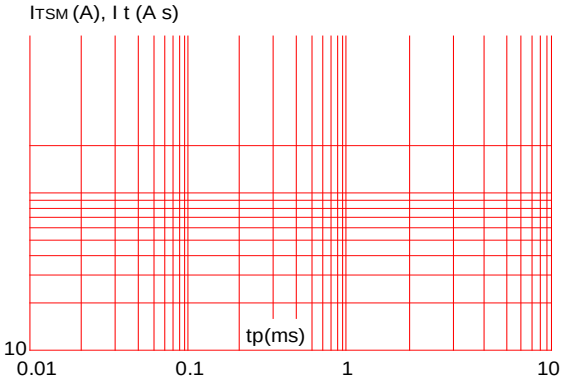

FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

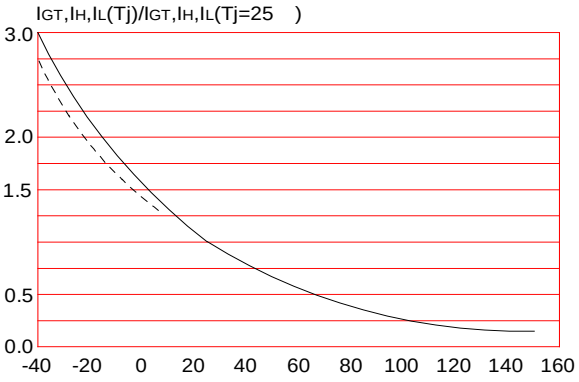

FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards

PACKAGE MECHANICAL DATA