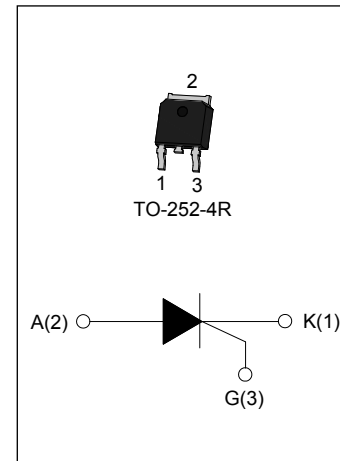




DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT610/810 series 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. Package TO-252-4R is RoHS compliant. (2011/65/EU)



MAIN FEATURES

Symbol	JCT610	JCT810
V_{DRM}/V_{RRM}	600V	800V
$I_{T(RMS)}$	10A	
I_{GT}	$\leq 10mA$	

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range	T_j	-40-150	$^{\circ}C$
Repetitive peak off-state voltage($T_j=25^{\circ}C$)	V_{DRM}	600/800	V
Repetitive peak reverse voltage($T_j=25^{\circ}C$)	V_{RRM}	600/800	V
RMS on-state current	TO-252-4R ($T_C=105^{\circ}C$) $I_{T(RMS)}$	10	A
Non repetitive surge peak on-state current ($t_p=10ms$)	I_{TSM}	120	A
I^2t value for fusing ($t_p=10ms$)	I^2t	72	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	50	$A/\mu s$
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	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}	$V_D=12\text{V } R_L=33\Omega$	-	-	10	mA
V_{GT}		-	-	1.5	V
V_{GD}	$V_D=V_{DRM} T_j=150^{\circ}\text{C } R_L=3.3\text{K}\Omega$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	40	mA
I_H	$I_T=500\text{mA}$	-	-	30	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=150^{\circ}\text{C}$	200	-	-	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=20\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.55	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=150^{\circ}\text{C}$	1	mA

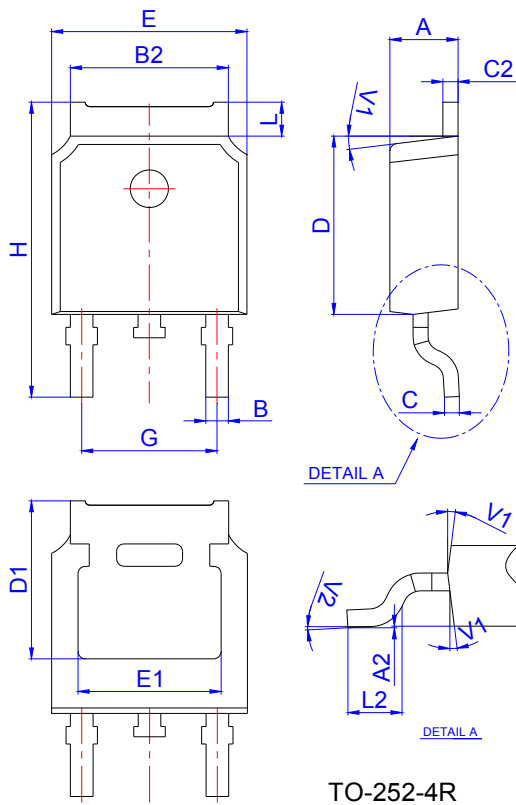
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-252-4R	2.0	$^{\circ}\text{C/W}$
$R_{th(j-a)}$	junction to ambient		70	

ORDERING INFORMATION

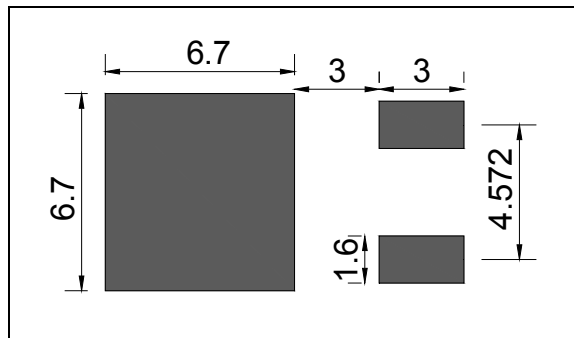
<p>J</p> <p>JieJie Microelectronics Co.,Ltd</p>	<p>CT</p> <p>SCRs</p> <p>6:$V_{DRM}/V_{RRM} \geq 600\text{V}$ 8:$V_{DRM}/V_{RRM} \geq 800\text{V}$</p>	<p>6</p>	<p>10</p> <p>$I_{T(RMS)}:10\text{A}$</p>	<p>K</p> <p>K: TO-252-4R KTR:TO-252-4R(Tape&Reel)</p>
--------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------	-----------------	------------------------------------------------------------	----------------------------------------------------------------------

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°

FOOTPRINT-TO-252-4R (dimensions in mm)



MARKING

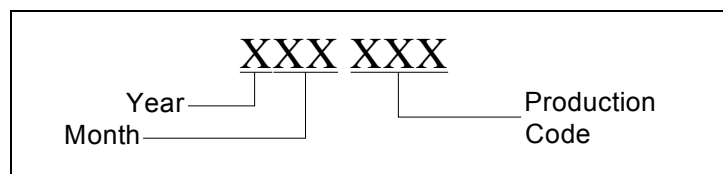
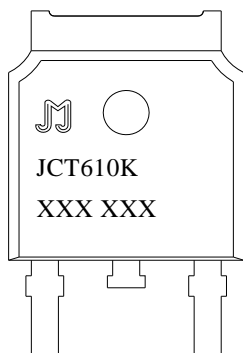


FIG.1 Maximum power dissipation versus RMS on-state current

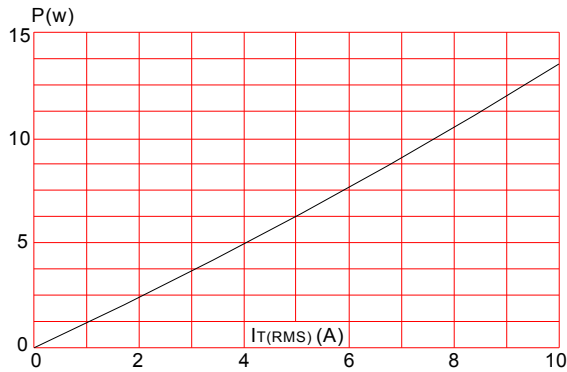


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4,copper thickness:35μm)(full cycle)

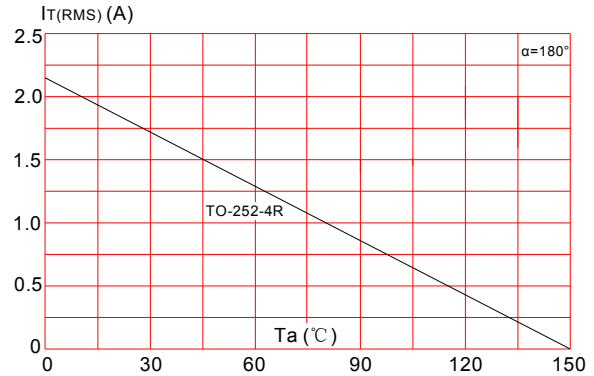


FIG.3: Surge peak on-state current versus number of cycles

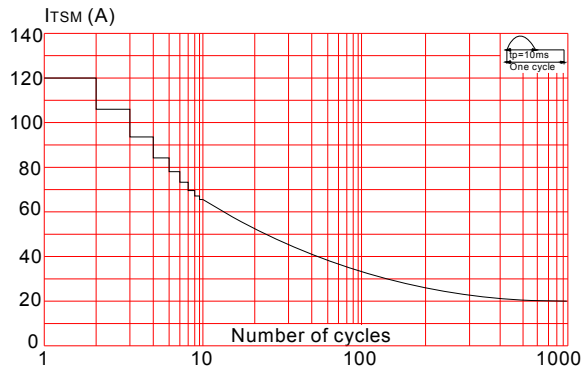


FIG.4: On-state characteristics (maximum values)

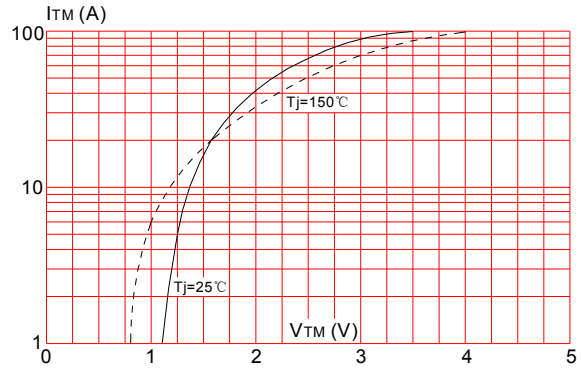


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponding value of I²t (di/dt < 50A/μs)

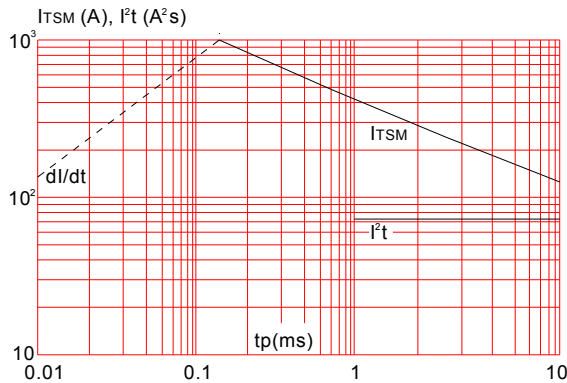
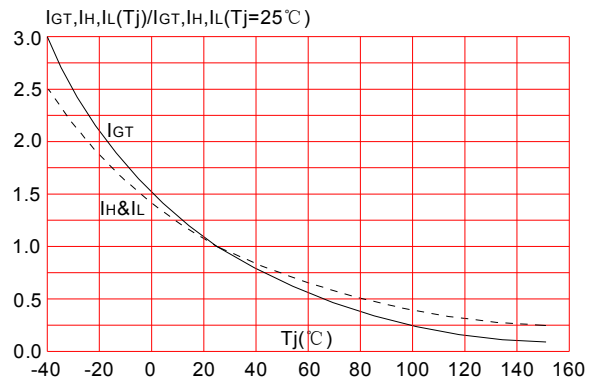
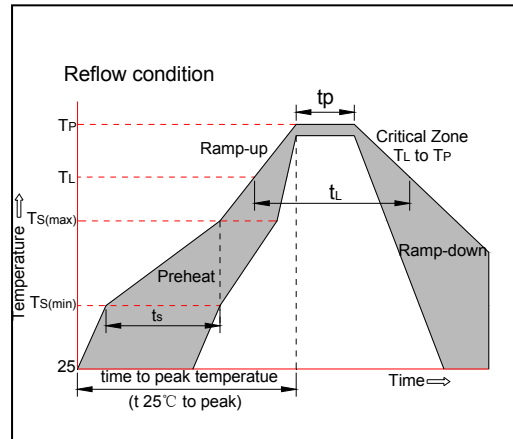


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature




SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



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