JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

TO-252-2LK Plastic-Encapsulate Thyristors

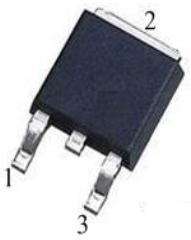
CT310D 3Q TRIACs

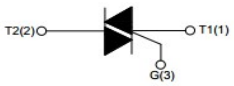
MAIN CHARACTERISTICS

$I_{T(RMS)}$		10A
V_{DRM}/V_{RRM}	CT310D-600S/C	600V
	CT310D-800S/C	800V
V_{TM}		1.55V

TO 252-2LK

1.MAIN TERMINAL 1
2.MAIN TERMINAL 2
3.GATE





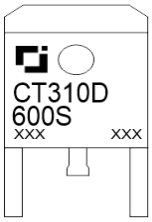
FEATURES

- NPNPN 5-layer Structure TRIACs
- Mesa Glass Passivated Technology
- Multi Layers Metal Electrodes
- High Junction Temperature
- Good Commutation Performance
- High dV/dt and dI/dt

APPLICATIONS

- Heater Control
- Motor Speed Controller
- Mixer

MARKING



CT310D:Series Code
600S:Depends on V_{DRM} and I_{GT}
XXX:Internal Code

ABSOLUTE RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Test condition		Value		Unit
V_{DRM}/ V_{RRM}	Repetitive peak off-state voltage	T_j=25℃	CT310D-600S/C	600		V
			CT310D-800S/C	800		V
$I_{T(RMS)}$	RMS on-state current	TO-252-2LK(TC≤110℃), Fig. 1,2		10		A
I_{TSM}	Non repetitive surge peak on-state current	Full sine wave, T_j(init)=25℃, tp=20ms; Fig. 3,5		100		A
I^2t	I^2t value	tp=10ms		50		A^2s
dI_T/dt	Critical rate of rise of on-state current	I_G=2*I_{GT}, tr≤10ns, F=120Hz, T_j=125℃		Ⅰ-Ⅱ-Ⅲ	50	A/μs
				Ⅳ	n/a	
I_{GM}	Peak gate current	tp=20μs, T_j=125℃		2		A
$P_{G(AV)}$	Average gate power	T_j=125℃		0.5		W
T_{STG}	Storage temperature			-40~+150		℃
T_j	Operating junction temperature			-40~+125		

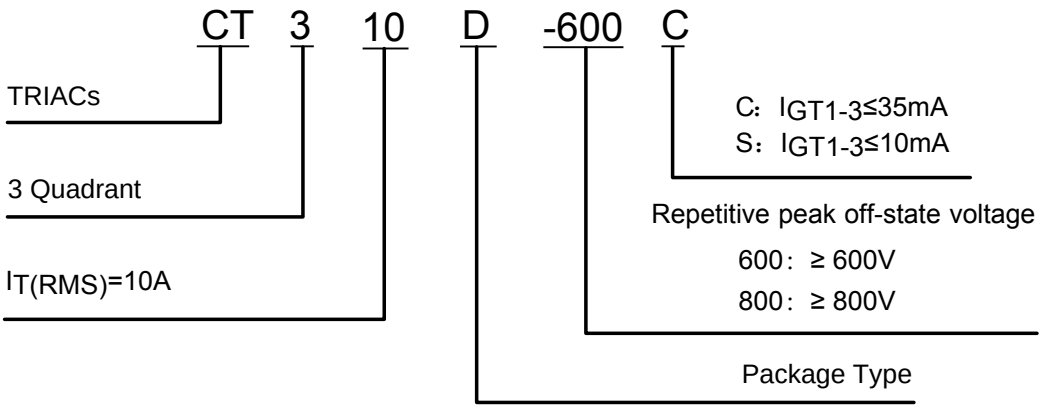
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Symbol	Parameter	Test condition		Value		Unit
				S	C	
I_{GT}	Gate trigger current	V_D=12V, I_T =0.1A, T_j=25℃, Fig. 6	Ⅰ-Ⅱ-Ⅲ	≤10	≤35	mA
			Ⅳ	n/a	n/a	
V_{GT}	Gate trigger voltage		Ⅰ-Ⅱ-Ⅲ	≤1.3		V
V_{GD}	Non-triggering gate voltage	VD=VDRM, T_j=125℃		≥0.2		V
I_H	Holding current	V_D=12V, I_{GT}=0.1A, T_j=25℃, Fig. 6	Ⅰ-Ⅱ-Ⅲ	≤15	≤25	mA
I_L	Latching current		Ⅰ-Ⅲ	≤20	≤30	mA
			Ⅱ	≤25	≤35	mA
dV_D/dt	Critical rate of rise of off-state	V_D=67%V_{DRM}, Gate Open T_j=125℃		≥40	≥80	V/μs
V_{TM}	On-state Voltage	I_{TM}=10A，tp=380μs , Fig. 4		≤1.55		V
I_{DRM} / I_{RRM}	Repetitive peak off-state current	V_D=V_{DRM}/V_{RRM}, T_j=25℃		≤5	≤5	μA
		V_D=V_{DRM}/V_{RRM},T_j=125℃		≤1	≤1	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
Rth (j-c)	Junction to case (AC)	TO-252-2LK	1.6	℃/W
Rth (j-a)	Junction to ambient	TO-252-2LK	70	℃/W

PART NUMBER



CHARACTERISTICS CURVES

FIG.1: Maximum power dissipation versus RMS on-state current (full cycle)

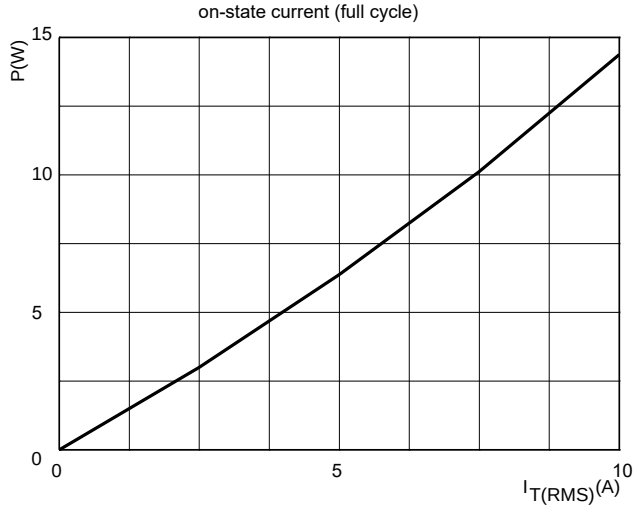


FIG.2: RMS on-state current versus case temperature (full cycle)

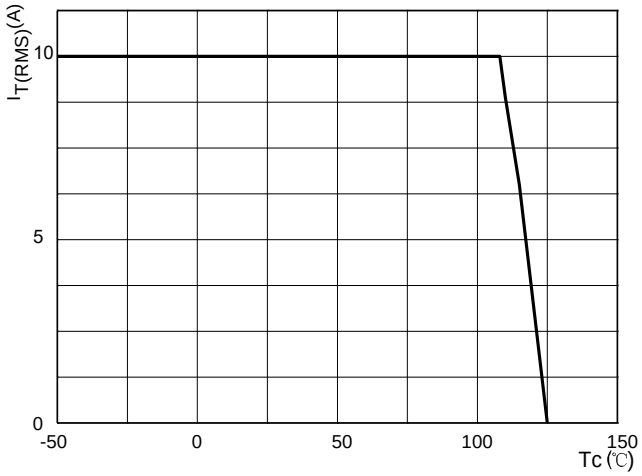


FIG.3: Surge peak on-state current versus number of cycles

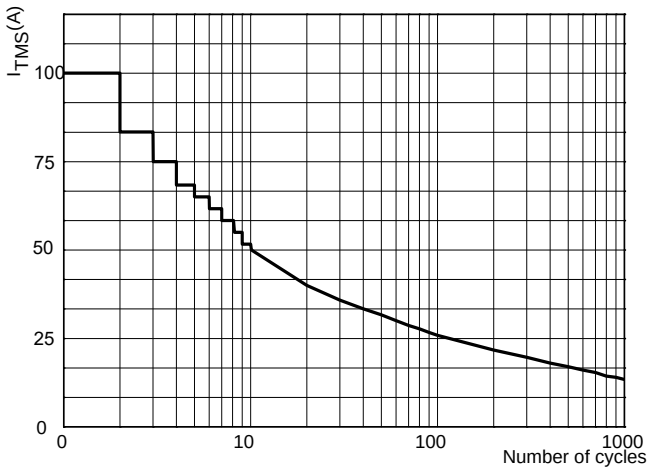


FIG.4: On-state characteristics (maximum values)

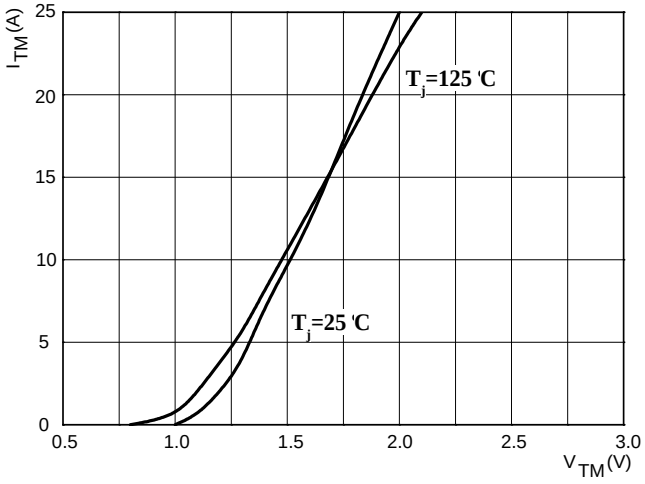


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms

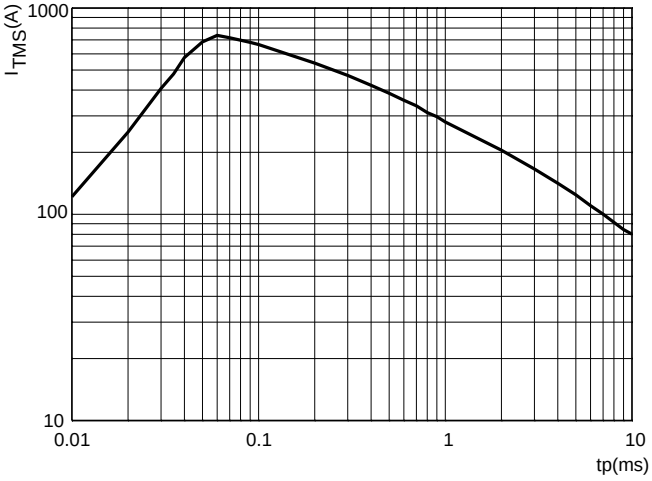
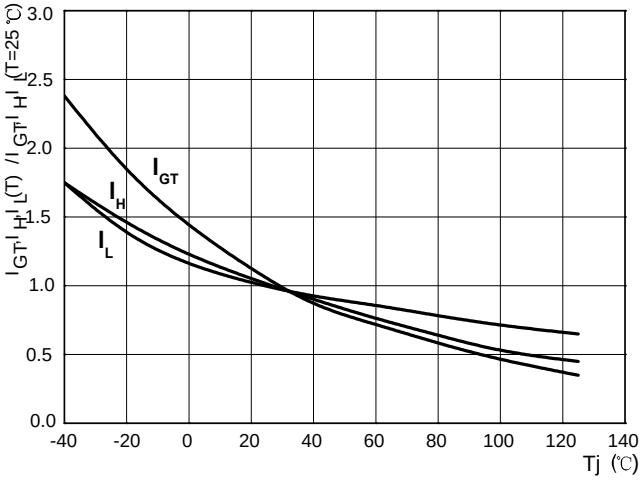
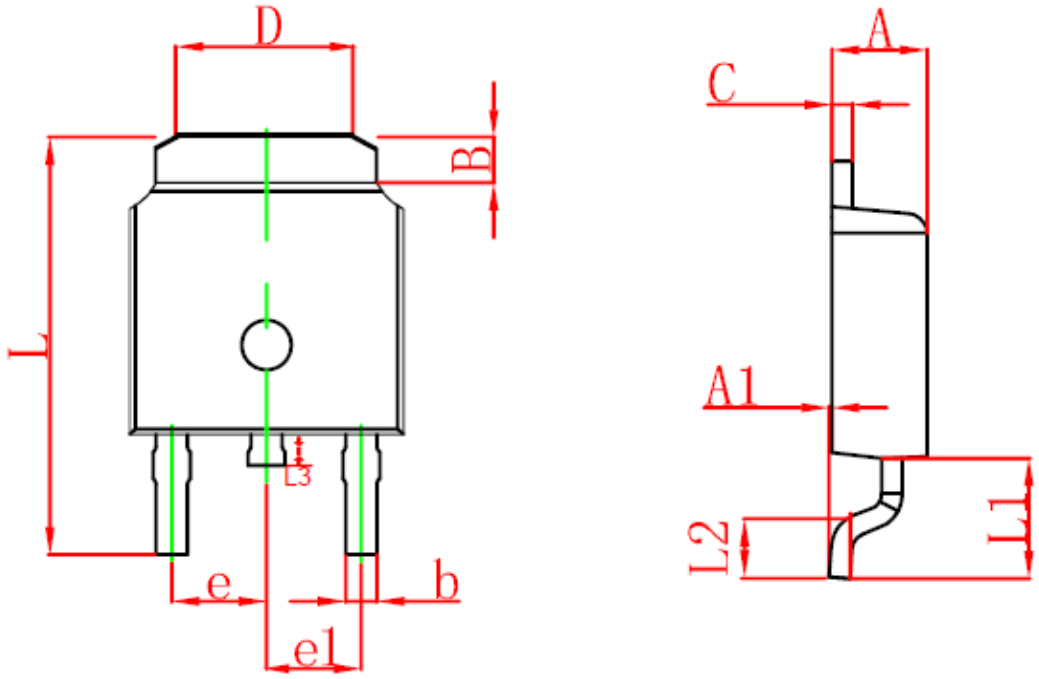


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



TO-252-2LK PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	2.100	2.500
A1	0.000	0.127
B	1.070	1.470
b	0.710	0.810
C	0.700	0.900
D	3.400	3.800
e	2.250	2.350
e1	2.250	2.350
L	10.000	10.400
L1	2.600	3.000
L2	1.400	1.700
L3	0.600	1.000