



JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD  
**TO-252-2LK Plastic-Encapsulate Thyristors**

**CT308D** 3Q TRIACs

**MAIN CHARACTERISTICS**

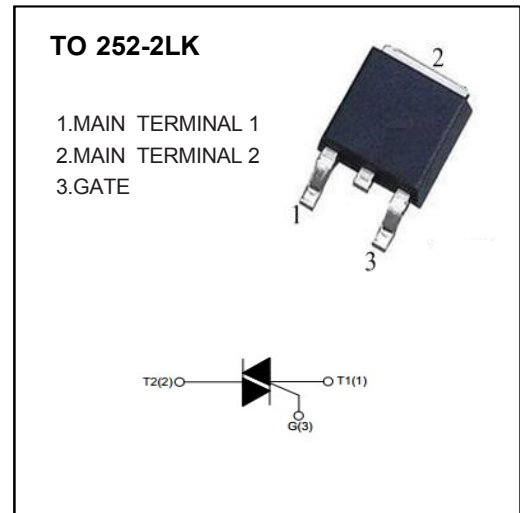
$I_{T(RMS)}$		<b>8A</b>
$V_{DRM}/V_{RRM}$	CT308D-600S/C	<b>600V</b>
	CT308D-800S/C	<b>800V</b>
$V_{TM}$		<b>1.55V</b>

**FEATURES**

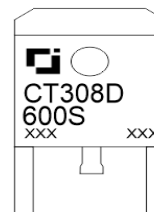
- NPNPN 5-layer Structure TRIACs
- Mesa Glass Passivated Technology
- Multi Layers Metal Electrodes
- High Junction Temperature
- Good Commutation Performance
- High  $dV/dt$  and  $dI/dt$

**APPLICATIONS**

- Heater Control
- Motor Speed Controller
- Mixer



**MARKING**



CT308D:Series Code  
 600S:Depends on  $V_{DRM}$   
 and  $I_{GT}$   
 XXX:Internal Code

**ABSOLUTE RATINGS (  $T_a=25^\circ\text{C}$  unless otherwise noted )**

Symbol	Parameter	Test condition	Value	Unit	
$V_{DRM}/V_{RRM}$	Repetitive peak off-state voltage	$T_j=25^\circ\text{C}$	CT308D-600S/C	600	V
			CT308D-800S/C	800	V
$I_{T(RMS)}$	RMS on-state current	TO-252-2LK( $T_C \leq 110^\circ\text{C}$ ), Fig. 1,2	8	A	
$I_{TSM}$	Non repetitive surge peak on-state current	Full sine wave , $T_j(\text{init})=25^\circ\text{C}$ , $t_p=20\text{ms}$ ; Fig. 3,5	80	A	
$I^2t$	$I^2t$ value	$t_p=10\text{ms}$	36	$\text{A}^2\text{s}$	
$dI_T/dt$	Critical rate of rise of on-state current	$I_G=2 \cdot I_{GT}$ , $t_r \leq 10\text{ns}$ , $F=120\text{Hz}$ , $T_j=125^\circ\text{C}$	I - II - III	50	$\text{A}/\mu\text{s}$
			IV	n/a	
$I_{GM}$	Peak gate current	$t_p=20\mu\text{s}$ , $T_j=125^\circ\text{C}$	2	A	
$P_{G(AV)}$	Average gate power	$T_j=125^\circ\text{C}$	0.5	W	
$T_{STG}$	Storage temperature		-40~+150	$^\circ\text{C}$	
$T_j$	Operating junction temperature		-40~+125		

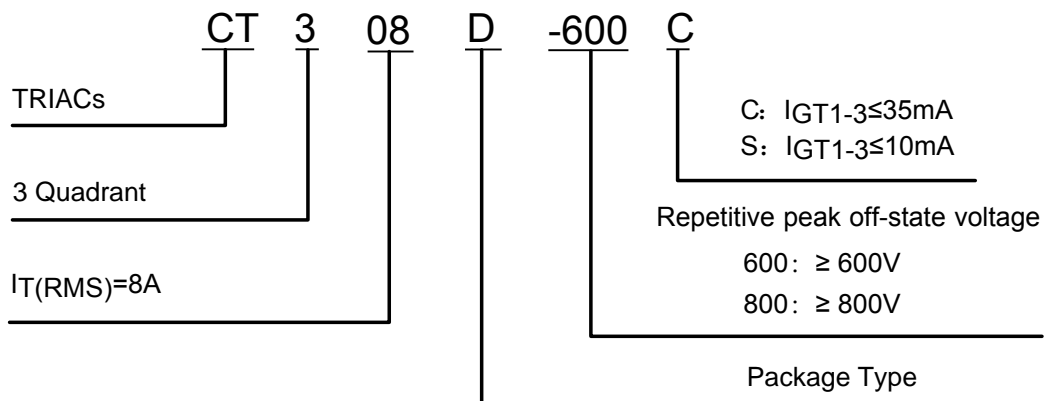
## ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

Symbol	Parameter	Test condition	Value		Unit	
			S	C		
I <sub>GT</sub>	Gate trigger current	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A, T <sub>j</sub> =25°C, Fig. 6	I - II - III	≤10	≤35	mA
			IV	n/a	n/a	
V <sub>GT</sub>	Gate trigger voltage	T <sub>j</sub> =25°C, Fig. 6	I - II - III	≤1.3		V
V <sub>GD</sub>	Non-triggering gate voltage	V <sub>D</sub> =V <sub>DRM</sub> , T <sub>j</sub> =125°C		≥0.2		V
I <sub>H</sub>	Holding current	V <sub>D</sub> =12V, I <sub>GT</sub> =0.1A, T <sub>j</sub> =25°C, Fig. 6	I - II - III	≤15	≤25	mA
I <sub>L</sub>	Latching current		I - III	≤20	≤30	mA
			II	≤25	≤35	mA
dV <sub>D</sub> /dt	Critical rate of rise of off-state	V <sub>D</sub> =67%V <sub>DRM</sub> , Gate Open T <sub>j</sub> =125°C		≥40	≥80	V/μs
V <sub>TM</sub>	On-state Voltage	I <sub>TM</sub> =10A, t <sub>p</sub> =380μs, s, Fig. 4		≤1.55		V
I <sub>DRM</sub> / I <sub>RPM</sub>	Repetitive peak off-state current	V <sub>D</sub> =V <sub>DRM</sub> /V <sub>RPM</sub> , T <sub>j</sub> =25°C		≤5	≤5	μA
		V <sub>D</sub> =V <sub>DRM</sub> /V <sub>RPM</sub> , T <sub>j</sub> =125°C		≤1	≤1	mA

## THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R <sub>th</sub> (j-c)	Junction to case (AC)	TO-252-2LK	1.6 °C/W
R <sub>th</sub> (j-a)	Junction to ambient	TO-252-2LK	70 °C/W

## PART NUMBER



# CHARACTERISTICS CURVES

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

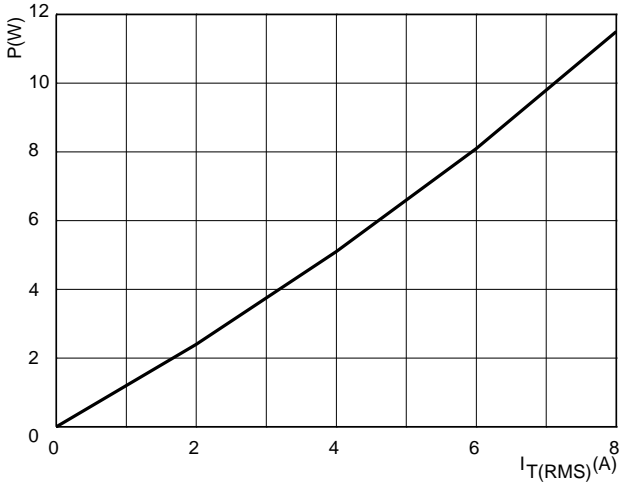


FIG.2: RMS on-state current versus case temperature (full cycle)

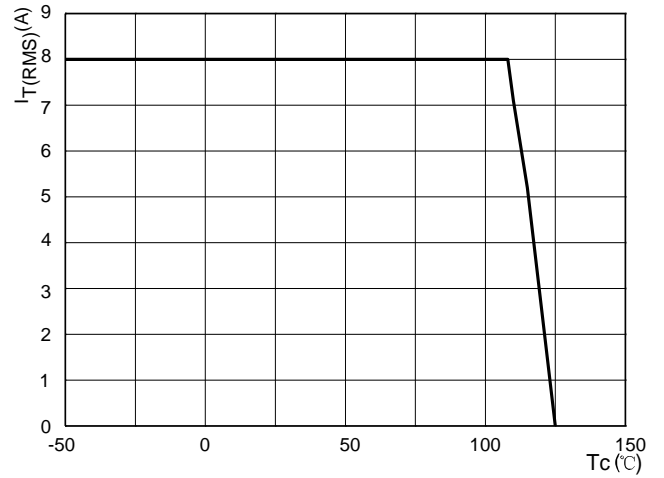


FIG.3: Surge peak on-state current versus number of cycles

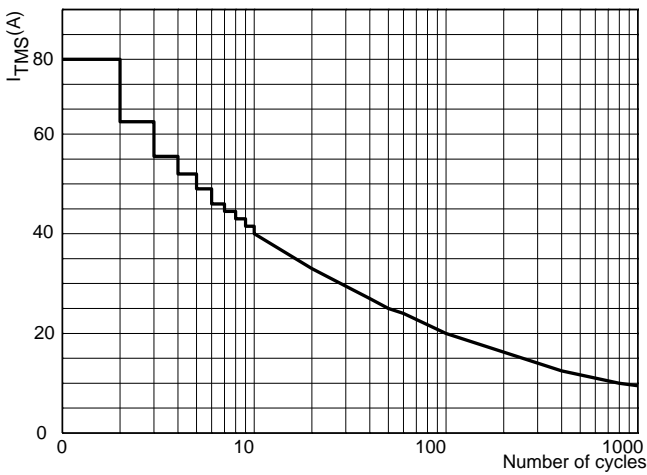


FIG.4: On-state characteristics (maximum values)

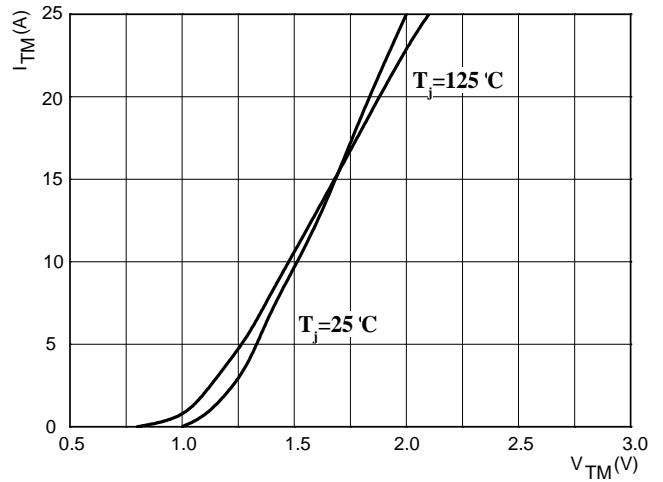


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$

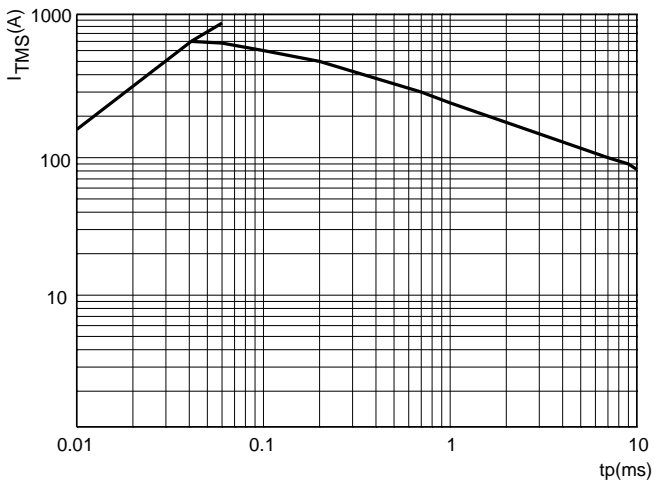
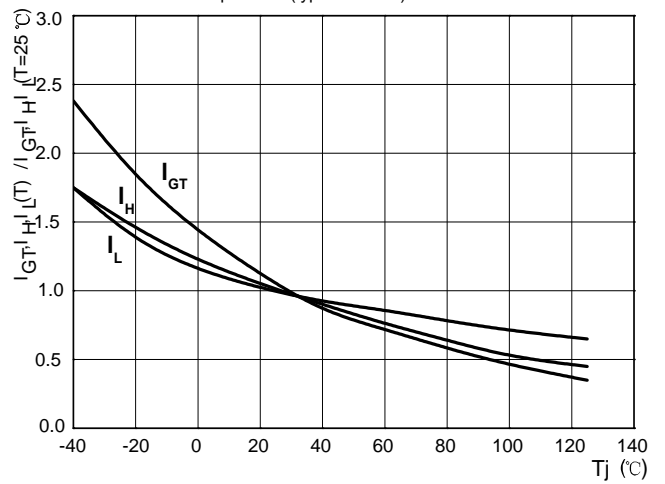
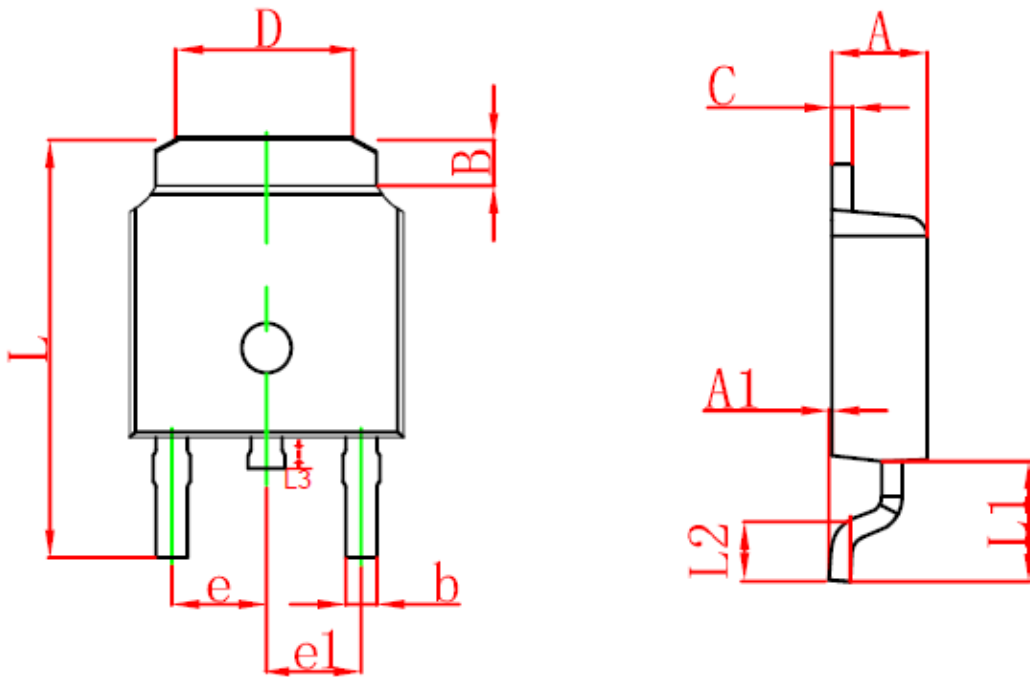


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



## 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