JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

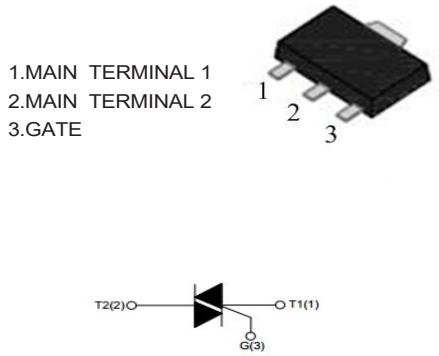
SOT-89K Plastic-Encapsulate Thyristors

CT401J 4Q TRIACs

MAIN CHARACTERISTICS

$I_{T(RMS)}$		1A
V_{DRM}/V_{RRM}	CT401J-600T/S	600V
	CT401J-800T/S	800V
V_{TM}		1.55V

SOT-89K



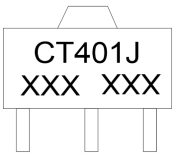
FEATURES

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

APPLICATIONS

- Heater Control
- Motor Speed Controller
- Mixer

MARKING



CT401J:Series Code

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℃	CT401J-600T/S	600		V
			CT401J-800T/S	800		V
$I_{T(RMS)}$	RMS on-state current	SOT-89K(T_C≤70℃), Fig. 1,2		1		A
I_{TSM}	Non repetitive surge peak on-state current	Full sine wave, T_j(init)=25℃, tp=20ms; Fig. 3,5		10		A
I^2t	I^2t value	tp=10ms		1.28		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	10		
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		

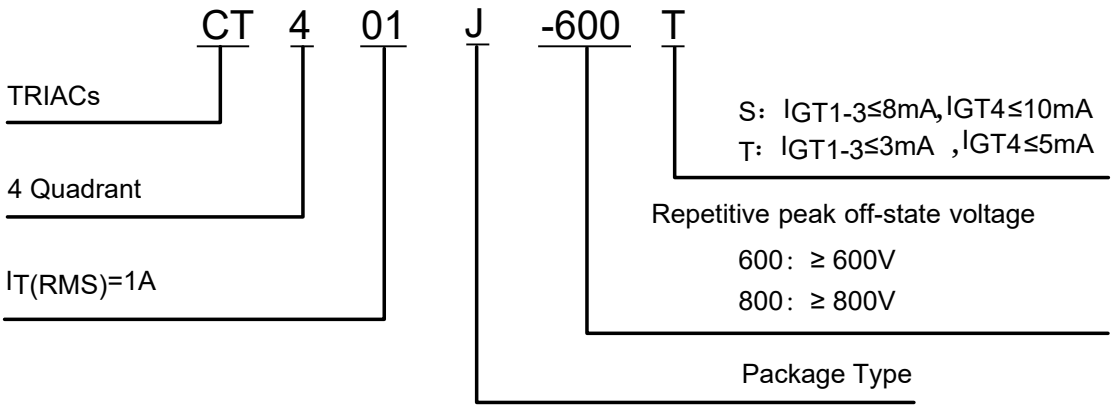
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Symbol	Parameter	Test condition		Value		Unit
				T	S	
I_{GT}	Gate trigger current	V_D=12V, I_T =0.1A, T_j=25℃, Fig. 6	Ⅰ - Ⅱ -Ⅲ	≤3	≤8	mA
			Ⅳ	≤5	≤10	
V_{GT}	Gate trigger voltage		Ⅰ - Ⅱ -Ⅲ - Ⅳ	≤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 - Ⅳ	≤5	≤5	mA
I_L	Latching current		Ⅰ -Ⅲ- Ⅳ	≤6	≤10	mA
			Ⅱ	≤10	≤15	mA
dV_D/dt	Critical rate of rise of off-state	V_D=67%V_{DRM}, Gate Open T_j=125℃		≥20	≥50	V/μs
V_{TM}	On-state Voltage	I_{TM}=1.5A ,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℃		≤0.1	≤0.1	mA

THERMAL RESISTANCES

Symbol	Parameter			Value	Unit
Rth (j-c)	Junction to case (AC)		SOT-89K	23	℃/W
Rth (j-a)	Junction to ambient	S=5cm²	SOT-89K	100	℃/W

PART NUMBER



CHARACTERISTICS CURVES

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

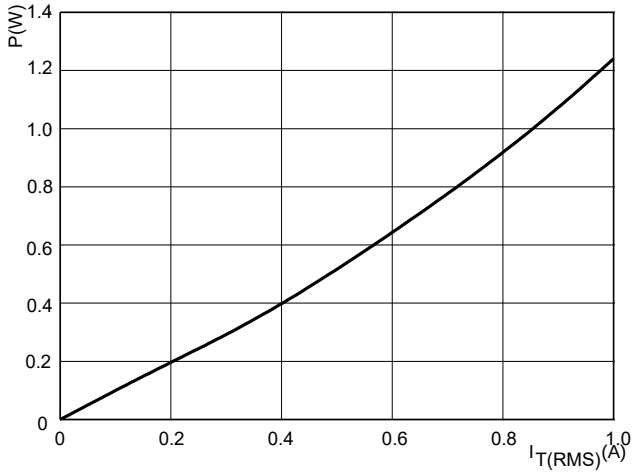


FIG.2: RMS on-state current versus case temperature (full cycle)

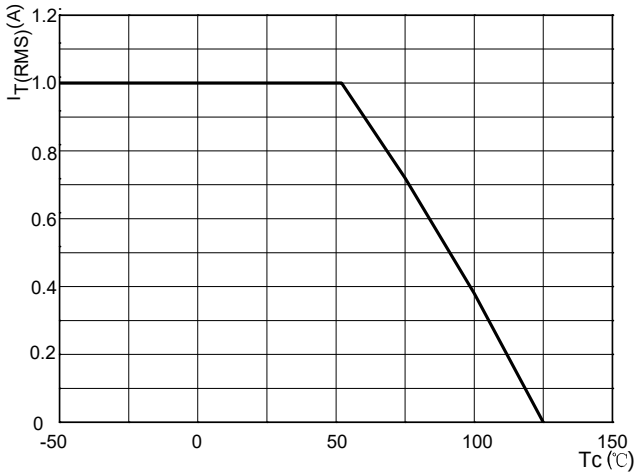


FIG.3: Surge peak on-state current versus number of cycles

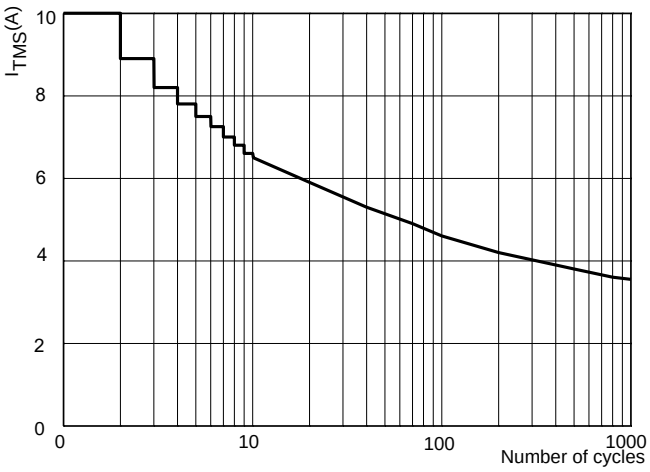


FIG.4: On-state characteristics (maximum values)

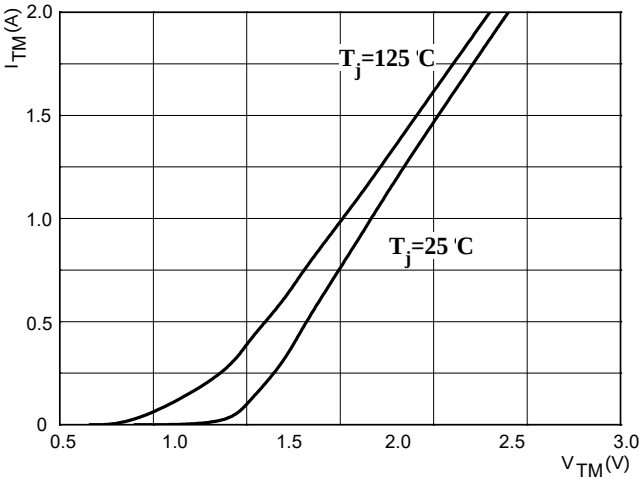


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms

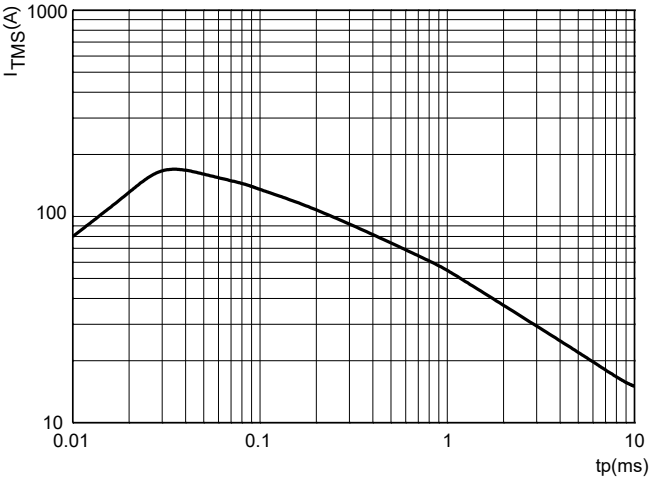
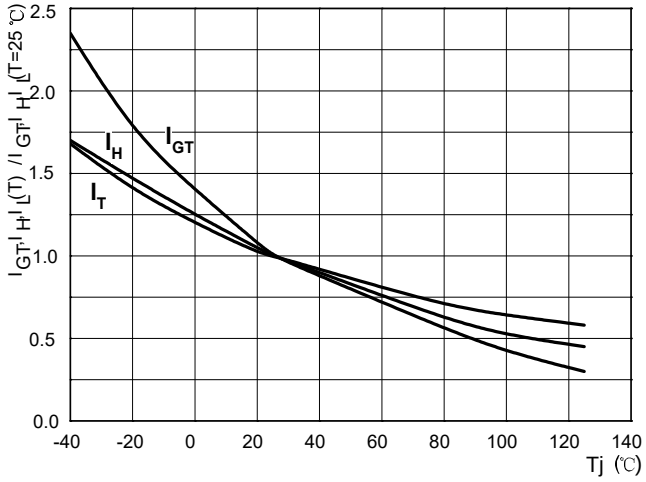
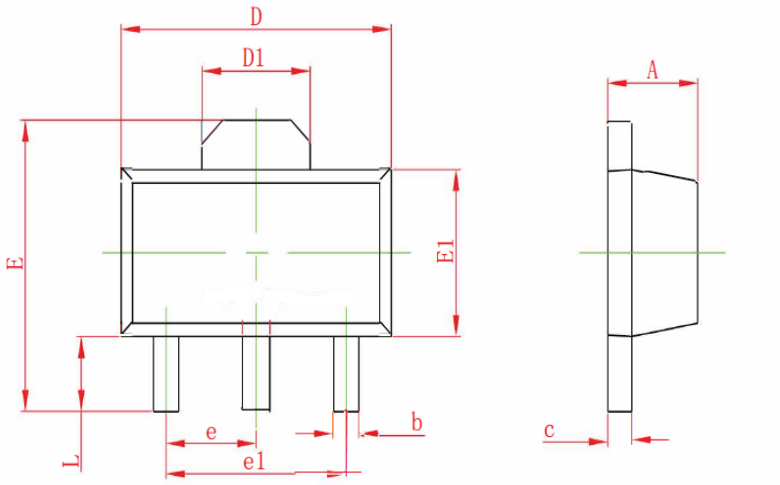


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



SOT-89K PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
c	0.350	0.460	0.014	0.017
D	4.300	4.700	0.169	0.185
D1	1.550 REF.		0.061 REF.	
E	3.940	4.250	0.155	0.167
E1	2.300	2.700	0.091	0.106
e	1.500 TYP.		0.060 TYP.	
e 1	3.000 TYP.		0.118 TYP.	
L	0.800	1.200	0.031	0.047

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