

SOT-23-3LK Plastic-Encapsulate Thyristors

CT401L 4Q TRIACs

MAIN CHARACTERISTICS

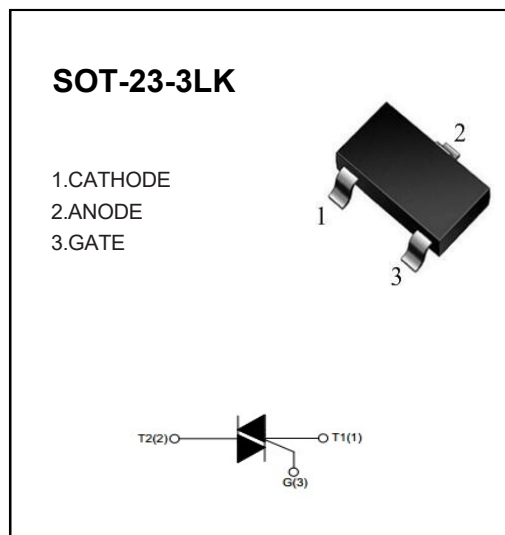
$I_{T(RMS)}$		1A
V_{DRM}/V_{RRM}	CT401L-600T/S	600V
	CT401L-800T/S	800V
V_{TM}		1.55V

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



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	$T_j=25^{\circ}\text{C}$	CT401L-600T/S	600	V
			CT401L-800T/S	800	V
$I_{T(RMS)}$	RMS on-state current	SOT-23-3LK($T_C \leq 60^{\circ}\text{C}$), Fig. 1,2		1	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		10	A
I^2t	I^2t value	$t_p=10\text{ms}$		1.28	A^2s
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	10	
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	

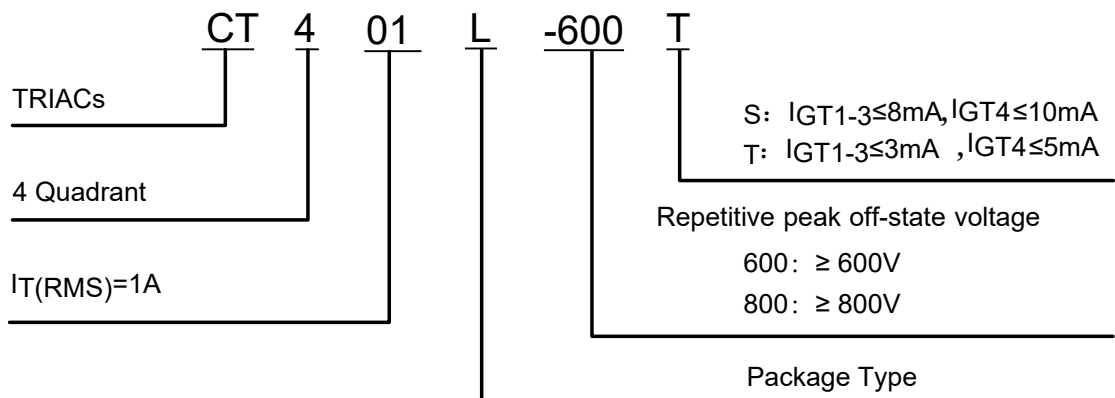
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Symbol	Parameter	Test condition		Value		Unit
				T	S	
I _{GT}	Gate trigger current	V _D =12V, I _T =0.1A, T _J =25°C, 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°C		≥0.2		V
I _H	Holding current	V _D =12V, I _{GT} =0.1A, T _J =25°C, 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°C		≥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°C		≤5	≤5	μA
		V _D =V _{DRM} /V _{RRM} ,T _J =125°C		≤0.1	≤0.1	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th} (j-c)	Junction to case (AC)	SOT-23-3LK	32 °C/W
R _{th} (j-a)	Junction to ambient	SOT-23-3LK	400 °C/W

PART NUMBER



CHARACTERISTICS CURVES

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

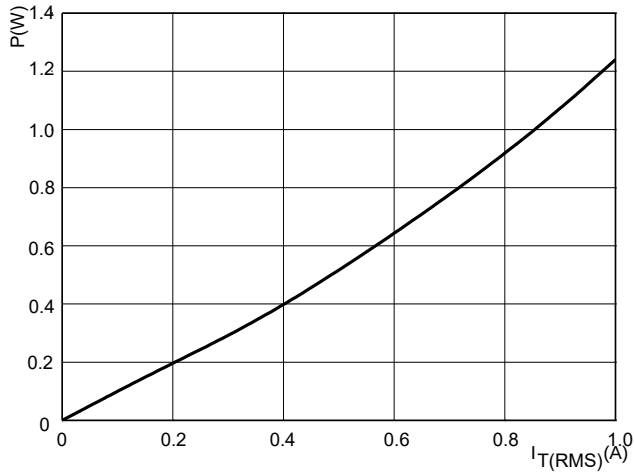


FIG.2: RMS on-state current versus case temperature (full cycle)

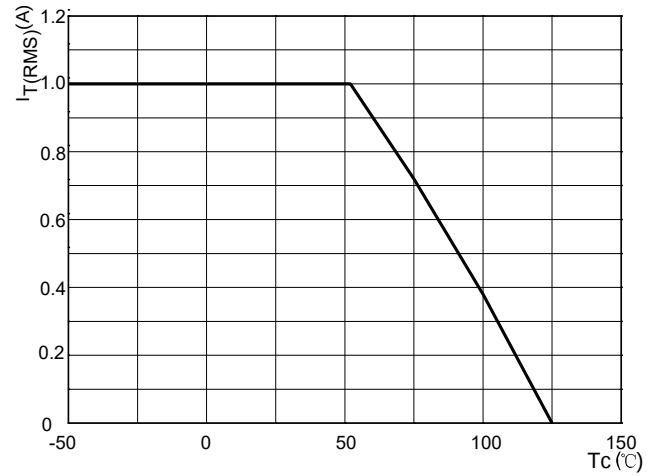


FIG.3: Surge peak on-state current versus number of cycles

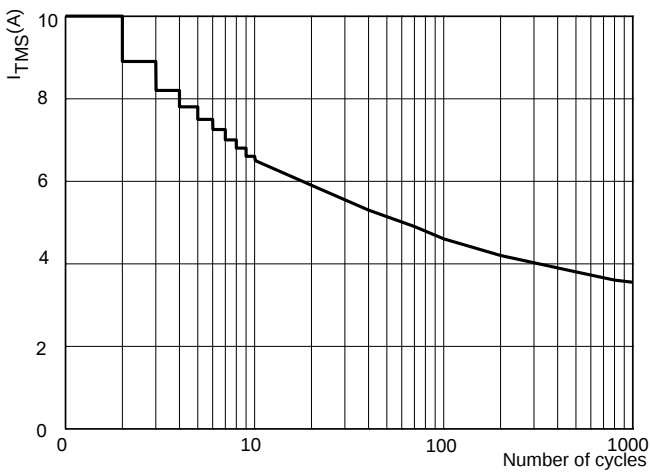


FIG.4: On-state characteristics (maximum values)

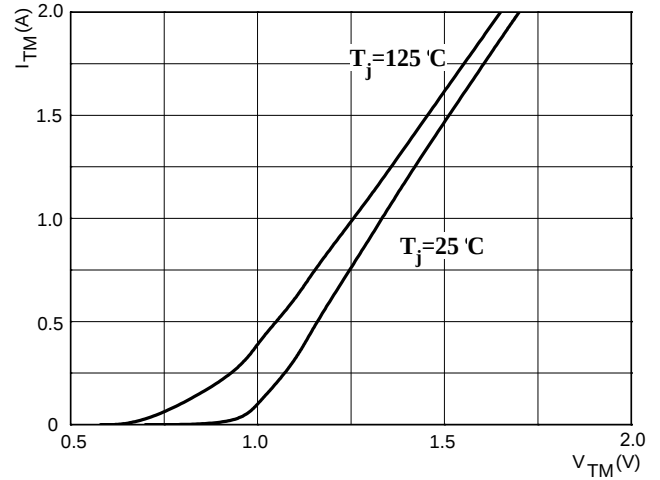


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$

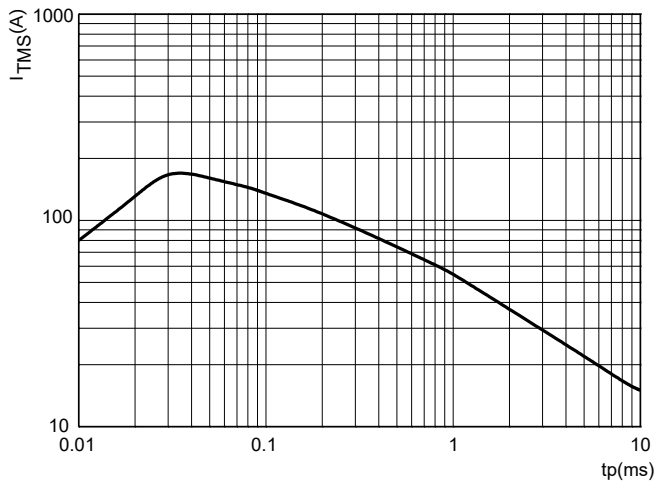
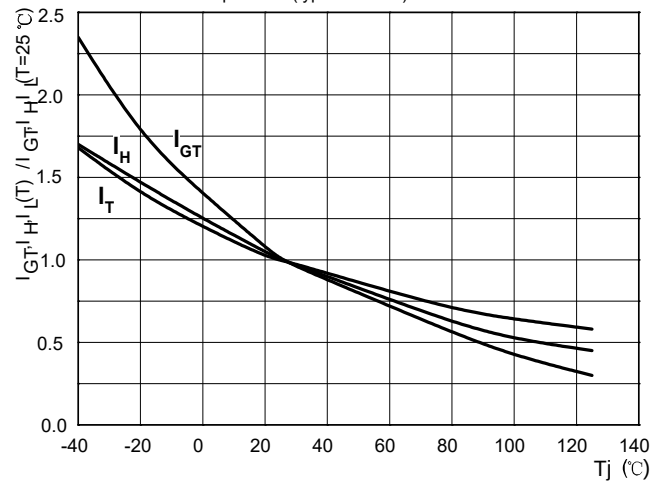
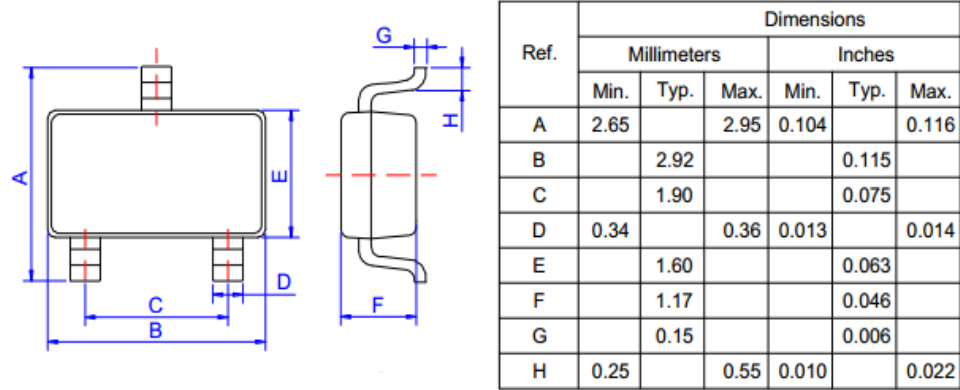


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



SOT-23-3LK PACKAGE OUTLINE DIMENSIONS



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