

TO-220CK Plastic-Encapsulate Thyristors

CT325C 3Q TRIACs

MAIN CHARACTERISTICS

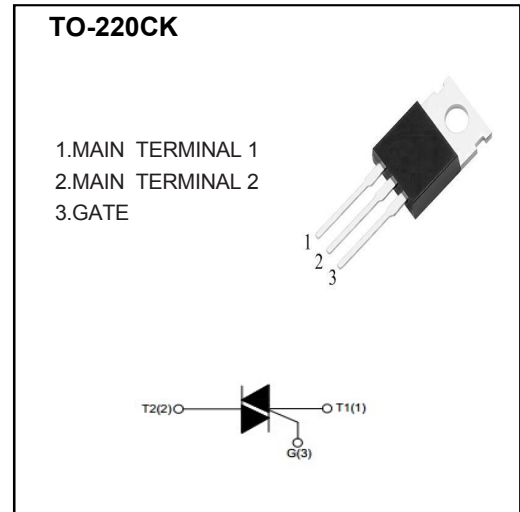
$I_{T(RMS)}$		25A
V_{DRM}/V_{RRM}	CT325C-600S/C/B	600V
	CT325C-800S/C/B	800V
V_{TM}		1.55V

FEATURES

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

APPLICATIONS

- Heater Control
- Motor Speed Controller
- Mixer



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

Symbol	Parameter	Test condition	Value	Unit	
V_{DRM}/V_{RRM}	Repetitive peak off-state voltage	$T_j=25^{\circ}C$	CT325C-600S/C/B	600	V
			CT325C-800S/C/B	800	V
$I_{T(RMS)}$	RMS on-state current	TO-220CK($T_C \leq 85^{\circ}C$), Fig. 1,2	25	A	
I_{TSM}	Non repetitive surge peak on-state current	Full sine wave , $T_j(\text{init})=25^{\circ}C$, $t_p=20\text{ms}$; Fig. 3,5	250	A	
I^2t	I^2t value	$t_p=10\text{ms}$	340	A^2s	
dI_T/dt	Critical rate of rise of on-state current	$I_G=2 \cdot I_{GT}$, $t_r \leq 10\text{ns}$, $F=120\text{Hz}$, $T_j=125^{\circ}C$	I - II - III	50	$A/\mu s$
			IV	n/a	
I_{GM}	Peak gate current	$t_p=20\mu s$, $T_j=125^{\circ}C$	4	A	
$P_{G(AV)}$	Average gate power	$T_j=125^{\circ}C$	1	W	
T_{STG}	Storage temperature		-40~+150	$^{\circ}C$	
T_j	Operating junction temperature		-40~+125		

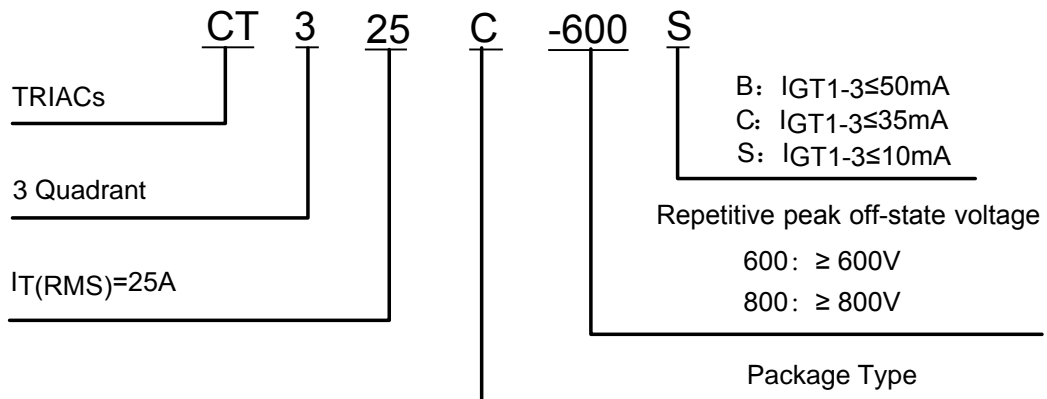
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Symbol	Parameter	Test condition	Value			Unit	
			S	C	B		
I _{GT}	Gate trigger current	V _D =12V, R _L =33Ω, T _j =25°C, Fig. 6	I - II -III	≤10	≤35	≤50	mA
			IV	n/a	n/a	n/a	
V _{GT}	Gate trigger voltage	T _j =25°C, Fig. 6	I - II -III	≤1.3		V	
V _{GD}	Non-triggering gate voltage	V _D =V _{DRM} , T _j =125°C		≥0.2		V	
I _H	Holding current	I _T =500mA, Fig. 6		≤30	≤50	≤75	mA
I _L	Latching current	I _G =1.2I _{GT} , Fig. 6	I - III	≤40	≤60	≤80	mA
			II	≤50	≤80	≤90	mA
dV _D /dt	Critical rate of rise of off-state	V _D =67%V _{DRM} , Gate Open T _j =125°C		≥40	≥500	≥1000	V/μs
V _{TM}	On-state Voltage	I _{TM} =35A, tp=380μs, Fig. 4		≤1.55		V	
I _{DRM} / I _{RPM}	Repetitive peak off-state current	V _D =V _{DRM} /V _{RPM} , T _j =25°C		≤5	≤5	≤5	μA
		V _D =V _{DRM} /V _{RPM} , T _j =125°C		≤2	≤2	≤2	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th} (j-c)	Junction to case (AC)	TO-220CK	0.8 °C/W
R _{th} (j-a)	Junction to ambient	TO-220CK	60 °C/W

PART NUMBER



CHARACTERISTICS CURVES

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

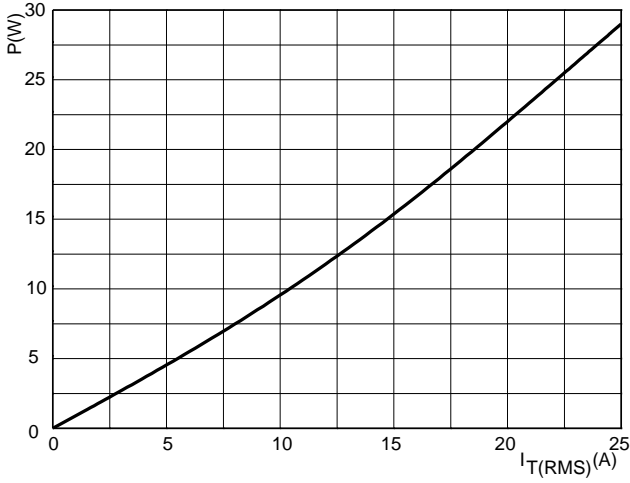


FIG.2: RMS on-state current versus case temperature (full cycle)

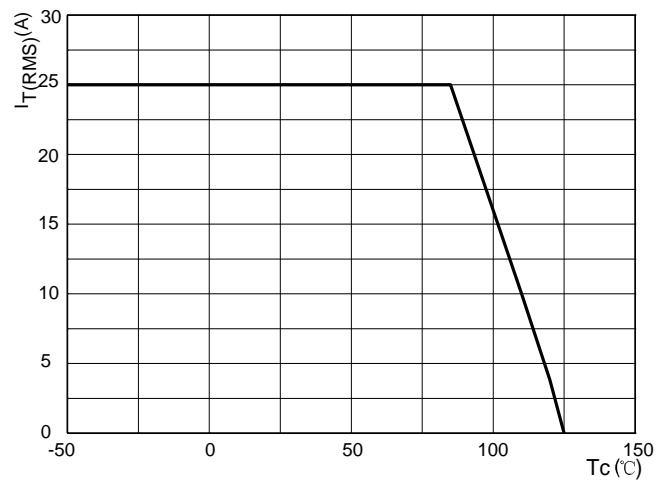


FIG.3: Surge peak on-state current versus number of cycles

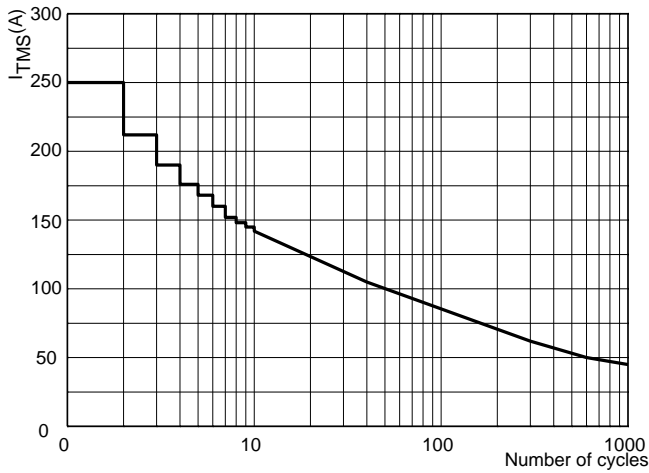


FIG.4: On-state characteristics (maximum values)

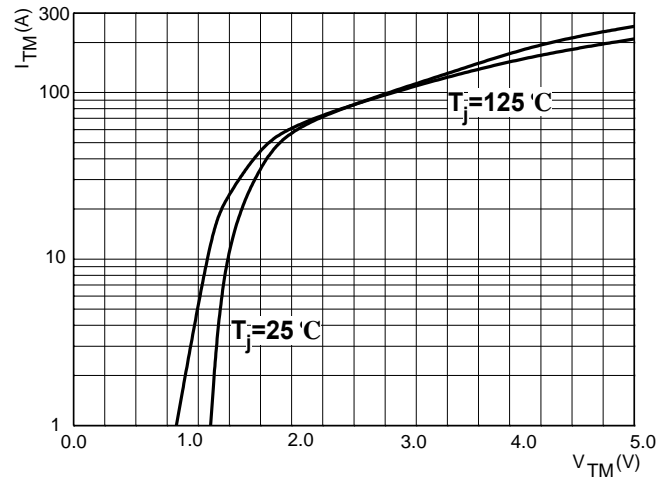


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$

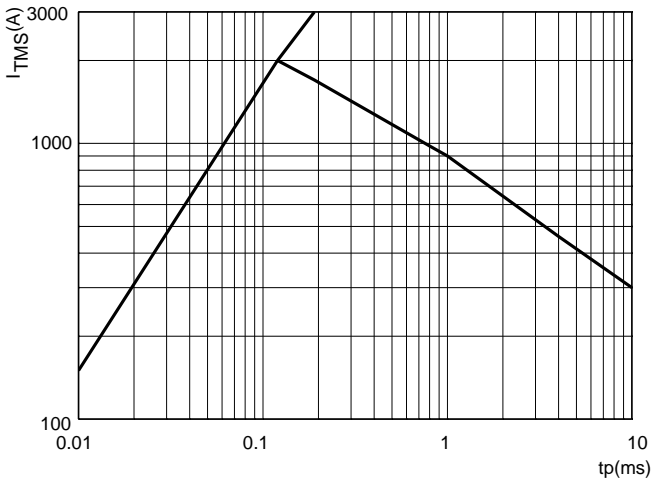
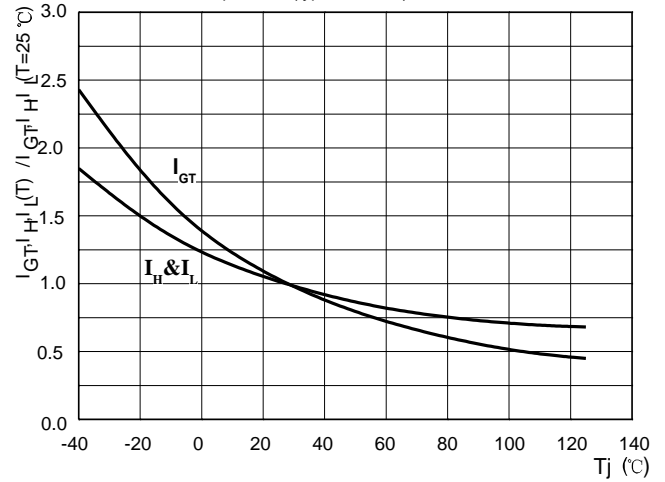
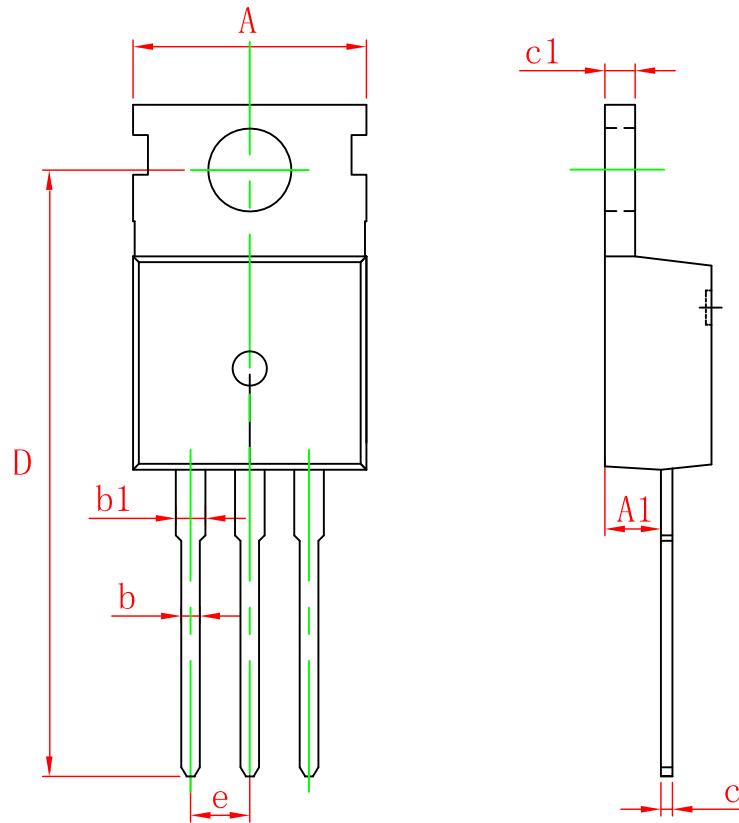


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



TO-220CK PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	9.700	10.300
A1	2.150	2.550
b	0.710	0.910
b1	1.170	1.370
c	0.350	0.650
c1	1.200	1.400
D	25.100	27.100
e	2.540 TYP.	

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