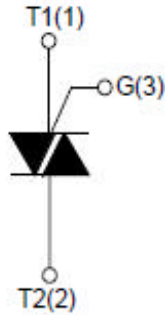
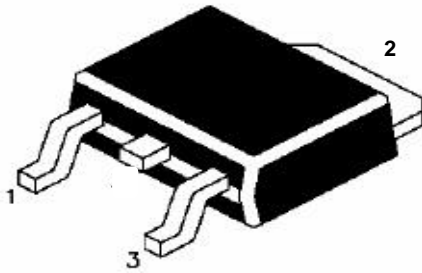


8A TRIACS



CST08K

TO-252

(DPAK)

Surface Mount
Plastic Package

RoHS Compliant

DESCRIPTION :

With high ability to withstand the shock loading of large current, CST08K series TRIACs provide high dv/dt rate strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants productes especially recommended for use on inductive load.

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Repetitive Peak Off-state Voltage ($T_J=25^{\circ}\text{C}$)	V_{DRM}	600 / 800	V
Repetitive Peak Reverse Voltage ($T_J=25^{\circ}\text{C}$)	V_{RRM}	600 / 800	V
Non Repetitive Surge Peak Off-state Voltage	V_{DSM}	$V_{\text{DRM}} + 100$	V
Non Repetitive Peak Reverse Voltage	V_{RSM}	$V_{\text{RRM}} + 100$	V
RMS On - State Current ($T_C = 107^{\circ}\text{C}$)	$I_{\text{T(RMS)}}$	8	A
Non Repetitive Surge Peak On-State Current (full cycle, $f=50\text{Hz}$)	I_{TSM}	80	A
I^2t Value for Fusing ($t_p = 10\text{ms}$)	I^2t	32	A^2s
Critical Rate of Rise of On - State Current ($I_G = 2 \times I_{\text{GT}}$)	di/dt	50	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	4	A
Average Gate Power Dissipation	$P_{\text{G(AV)}}$	1	W
Peak Gate Power	P_{GM}	5	W
Storage Junction Temperature Range	T_{stg}	-40 to 150	$^{\circ}\text{C}$
Operating Junction Temperature Range	T_J	-40 to 125	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_j = 25^\circ\text{C}$ unless otherwise specified)

3 Quadrants

PARAMETER	QUADRANT	TEST CONDITION	SYMBOL	VALUE				UNIT
				TW	SW	CW	BW	
Gate Trigger Current	I - II - III	$V_D = 12\text{V}$,	I_{GT}	<5	<10	<35	<50	mA
Gate Trigger Voltage	I - II - III	$R_L = 33\Omega$	V_{GT}	<1.5				V
Non Trigger Gate Voltage	I - II - III	$V_D = V_{DRM}$, $R_L = 3.3\text{K}\Omega$, $T_j = 125^\circ\text{C}$	V_{GD}	>0.2				V
Latching Current	I - III II	$I_G = 1.2 I_{GT}$	I_L	<20 <25	<25 <35	<50 <70	<70 <90	mA
Holding Current		$I_{TM} = 100\text{mA}$	I_H	<15	<20	<40	<60	mA
Critical Rate of Rise of On - State Voltage	$V_D = 2/3V_{DRM}$, Gate Open, $T_j = 125^\circ\text{C}$		dV/dt	>50	>200	>500	>1000	V/ μs

4 Quadrants

PARAMETER	QUADRANT	TEST CONDITION	SYMBOL	VALUE		UNIT
				C	B	
Gate Trigger Current	I - II - III IV	$V_D = 12\text{V}$, $R_L = 33\Omega$	I_{GT}	<25 <50	<50 <70	mA
Gate Trigger Voltage	ALL		V_{GT}	<1.5		V
Non Trigger Gate Voltage	ALL	$V_D = V_{DRM}$, $R_L = 3.3\text{K}\Omega$, $T_j = 125^\circ\text{C}$	V_{GD}	>0.2		V
Latching Current	I - III - IV II	$I_G = 1.2 I_{GT}$	I_L	<50 <70	<70 <90	mA
Holding Current		$I_{TM} = 200\text{mA}$	I_H	<40	<60	mA
Critical Rate of Rise of On - State Voltage	$V_D = 2/3V_{DRM}$, Gate Open, $T_j = 125^\circ\text{C}$		dV/dt	>200	>500	V/ μs

STATIC CHARACTERISTICS

PARAMETER	TEST CONDITION		SYMBOL	VALUE	UNIT
Peak On-State Voltage	$I_{TM} = 11\text{A}$, $t_p = 380\mu\text{s}$	$T_j = 25^\circ\text{C}$	V_{TM}	1.5	V
Peak Repetitive Forward / Reverse Blocking Current	$V_D = V_{DRM}$, $V_R = V_{RRM}$	$T_j = 25^\circ\text{C}$	I_{DRM}	5	μA
	$V_D = V_{DRM}$, $V_R = V_{RRM}$	$T_j = 125^\circ\text{C}$	I_{RRM}	1	mA

THERMAL RESISTANCES

PARAMETER	SYMBOL	VALUE	UNIT
Thermal Resistance, Junction to Case (AC)	R_{thJ-C}	2.1	$^\circ\text{C/W}$

TYPICAL CHARACTERISTICS CURVES

FIG.1 Maximum power dissipation versus RMS on-state current

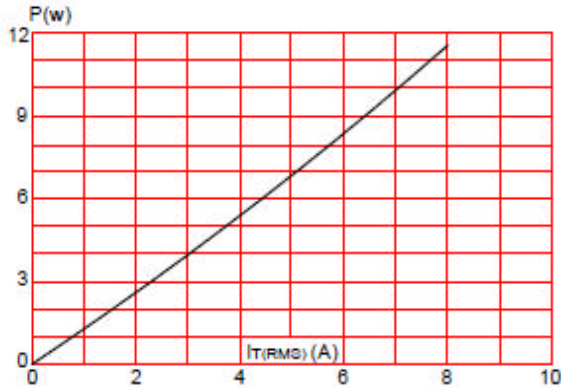


FIG.3: Surge peak on-state current versus number of cycles

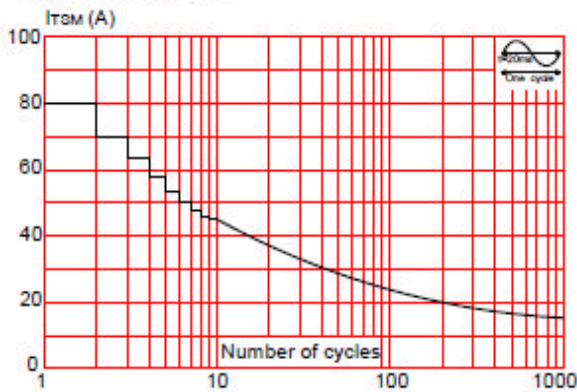


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

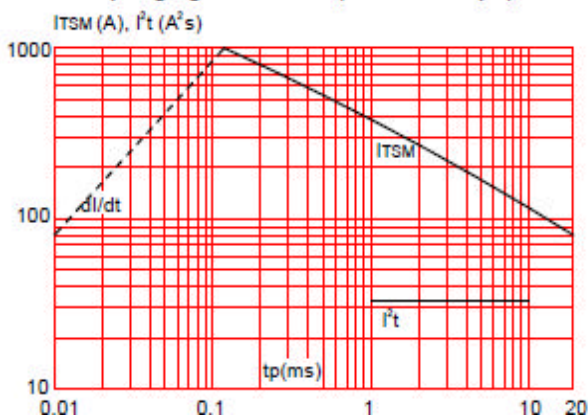


FIG.2: RMS on-state current versus case temperature

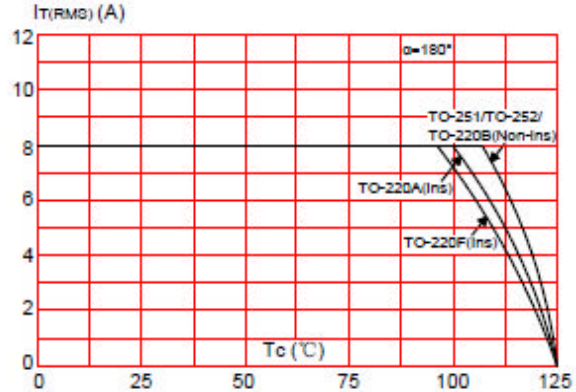


FIG.4: On-state characteristics (maximum values)

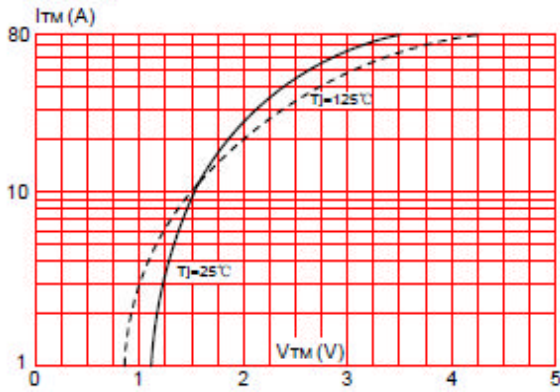
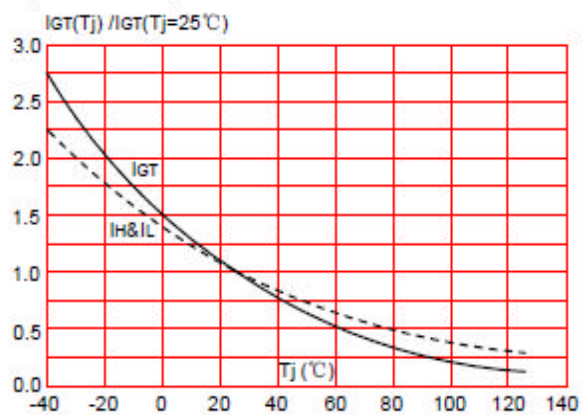
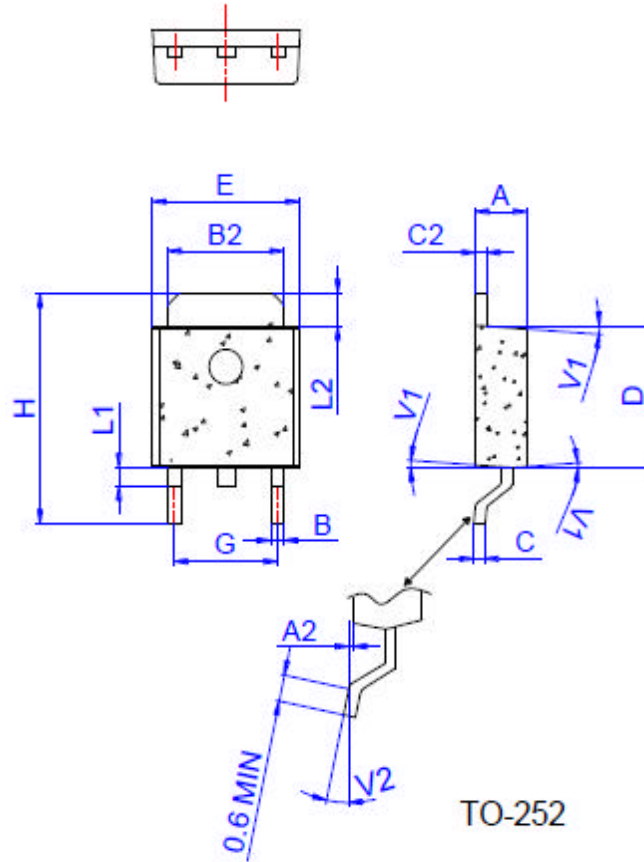


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



TO-252 (DPAK) PACKAGE OUTLINE AND DIMENSION



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G	4.40		4.70	0.173		0.185
H	9.35		10.6	0.368		0.417
L1	1.30		1.70	0.051		0.067
L2	1.37		1.50	0.054		0.059
V1		4°			4°	
V2	0°		8°	0°		8°



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