

**RS0206T 2A TRIAC**
**DESCRIPTION:**

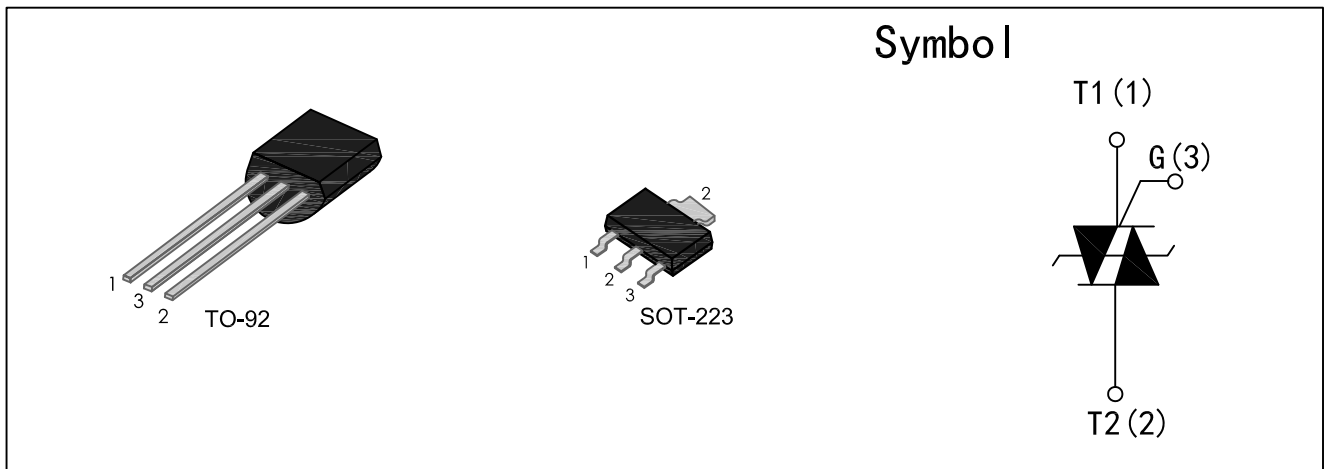
Sensitive gate triac in the TO-92 or SOT-223 plastic package, intended for use in AC static switching and industrial control systems, driving low power highly inductive loads like solenoid, pump, fan, and micro-motor.

**FEATURES:**

$dV/dt \geq 400V/\mu s$   
 $V_{DRM}/V_{RRM} \geq 1000V$

**MAIN FEATURES**

Symbol	Value	Unit
$I_{T(RMS)}$	2	A
$V_{DRM}/V_{RRM}$	1000	V
$I_{GT}$	$\leq 5$ or 10	mA


**ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Value	Unit
Storage junction temperature range	$T_{stg}$	-40 to +150	$^{\circ}C$
Operating junction temperature range	$T_j$	-40 to +125	$^{\circ}C$
Repetitive Peak Off-state Voltage $T_j=25^{\circ}C$	$V_{DRM}$	1000	V
Repetitive Peak Reverse Voltage $T_j=25^{\circ}C$	$V_{RRM}$	1000	
Non-Repetitive Surge Peak Off-state Voltage $T_j=25^{\circ}C$	$V_{DSM}$	1100	
Non-Repetitive Peak Reverse Voltage $T_j=25^{\circ}C$	$V_{RSM}$	1100	
RMS on-state current (half sine cycle)	$T_c=57^{\circ}C$ $I_{T(RMS)}$	2	A
Non repetitive surge peak on-state current (half sine cycle, $T_j=25^{\circ}C$ )	$f=50\text{ Hz } t=10\text{ms}$	10	A
	$f=60\text{ Hz } t=8.3\text{ms}$	11	
$I^2t$ Value for fusing	$t_p=10\text{ms}$ $I^2t$	1.12	$A^2s$
Peak gate current	$t_p=20\mu s, T_j=125^{\circ}C$ $I_{GM}$	1	A
Peak gate power	$t_p=20\mu s, T_j=125^{\circ}C$ $P_{GM}$	1	W
Average gate power dissipation	$T_j=125^{\circ}C$ $P_{G(AV)}$	0.2	W

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

Symbol	Test Condition	Quadrant		RS0206T	RS0206S	Unit
$I_{GT}$	$V_D=12\text{V}$ $R_L=30\Omega$	T2 + G +	Max	3	6	mA
		T2 + G -	Max	5	10	
		T2 - G-	Max	5	10	
$V_{GT}$		T2 + G +	Max	1.4	1.5	V
		T2 + G -	Max	1.4	1.5	
		T2 - G-	Max	1.4	1.5	
$V_{GD}$	$V_D=2/3V_{DRM}$ $R_L=3.3\text{K}\Omega$ $T_j=125^\circ\text{C}$		Min	0.2		V
$I_L$	$I_G=1.2I_{GT}$	T2 + G +	Max	15	25	mA
		T2 + G -	Max	25	35	
		T2 - G-	Max	15	25	
$I_H$	$I_T=100\text{mA}$	ALL	Max	10	20	mA
$V_{TM}$	$I_T=1.4\text{A}$ $t_p=380\mu\text{S}$		Max	1.5		V
dV/dt	$V_D=2/3V_{DRM}$ Gate open $T_j=125^\circ\text{C}$		Min	400	600	V/ $\mu\text{s}$
$I_{DRM}$	$V_D=V_{DRM}$	$T_j=25^\circ\text{C}$	Max	10		$\mu\text{A}$
		$T_j=125^\circ\text{C}$	Max	500		
$I_{RRM}$	$V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	Max	10		$\mu\text{A}$
		$T_j=125^\circ\text{C}$	Max	500		

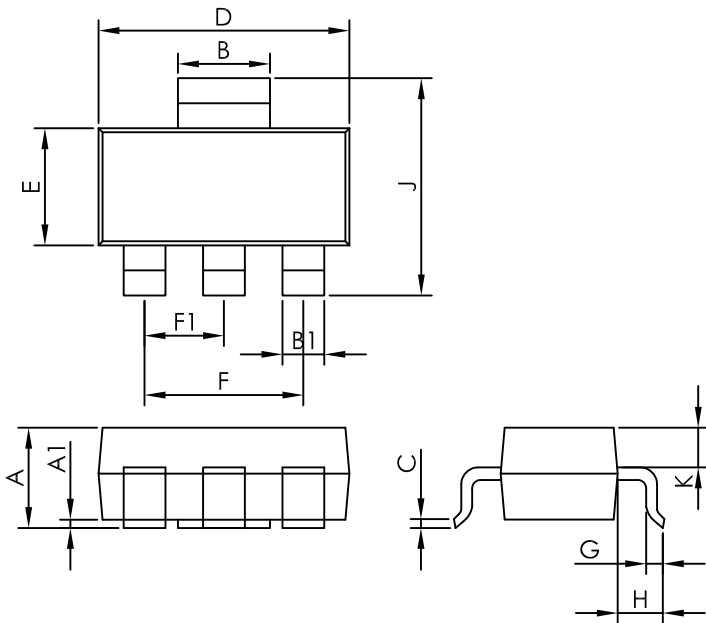
## THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(J-C)}$	Junction to Case (AC)	SOT-223	40
		TO-92	60

## ORDERING INFORMATION

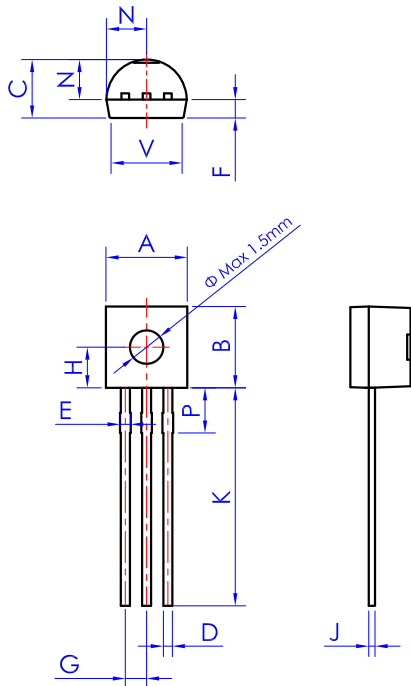
RS	02	06	T	-	U
TRIACs		$T : I_{GTmax}:5\text{ mA}$ $S : I_{GTmax}:10\text{ mA}$		U:TO-92 V:SOT-223	
$I_{T(RMS)}: 2\text{ A}$		06:600V 10:1000V			

### SOT-223 PACKAGE DATA



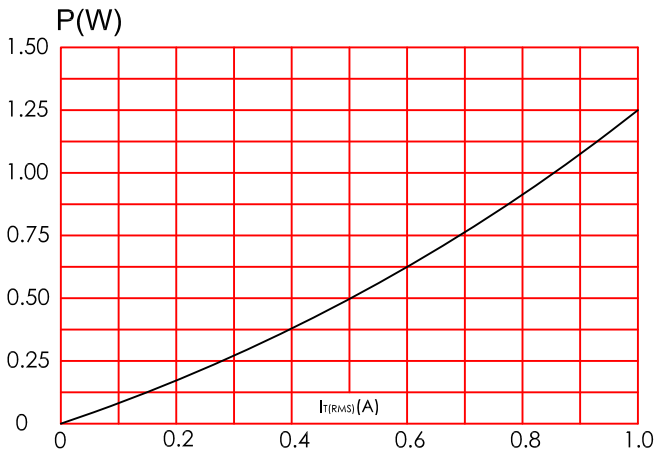
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	0.146
F		4.6			0.181	
F1		2.3			0.091	
G	0.7	0.9	1.1	0.028	0.035	0.043
H	1.5	1.75	2	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K		0.9			0.035	

### TO-92 PACKAGE DATA

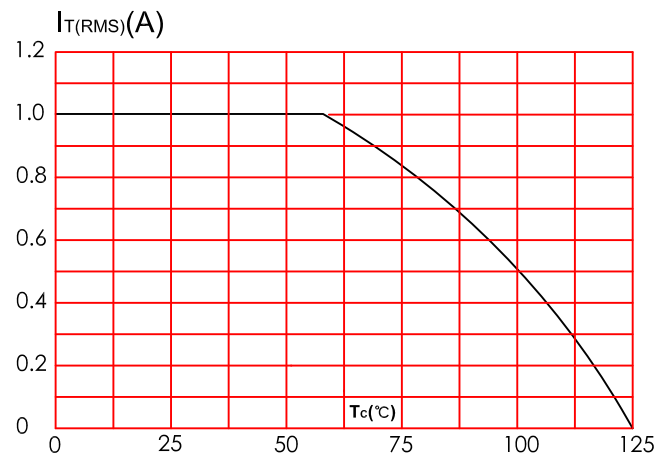


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45		5.20	0.175		0.205
B	4.32		5.33	0.170		0.210
C	3.18		4.19	0.125		0.165
D	0.407		0.533	0.016		0.021
E	0.60		0.80	0.024		0.031
F	-	1.1	-	-	0.043	-
G	-	1.27	-	-	0.050	-
H	-	2.30	-	-	0.091	-
J	0.36		0.50	0.014		0.020
K	12.70		15.0	0.500		0.591
N	2.04		2.66	0.080		0.105
P	1.86		2.06	0.073		0.081
V	-		4.3	-		0.169

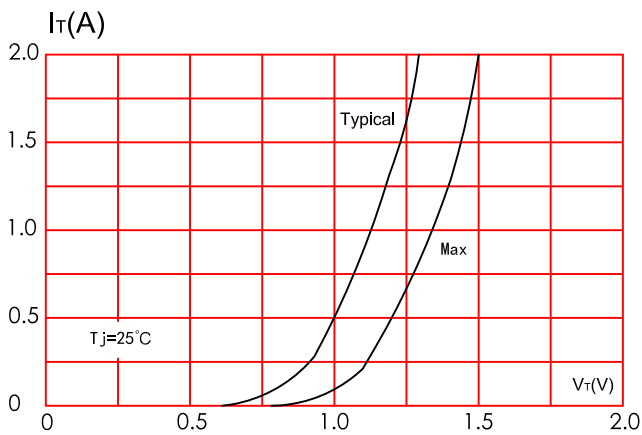
**Fig. 1:** Maximum average power dissipation versus average on-state current.



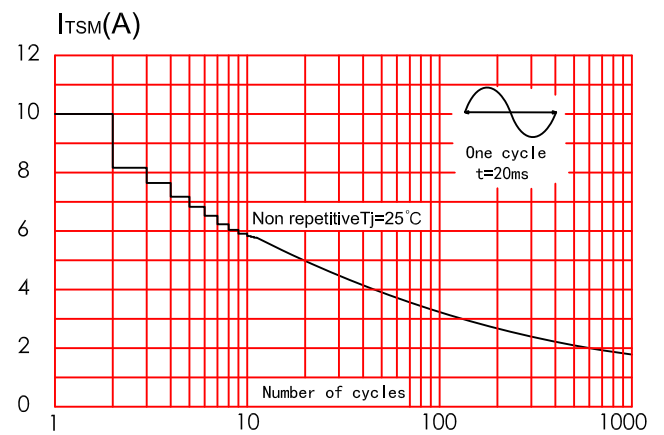
**Fig. 2:** RMS on-state current versus case temperature(full cycle).



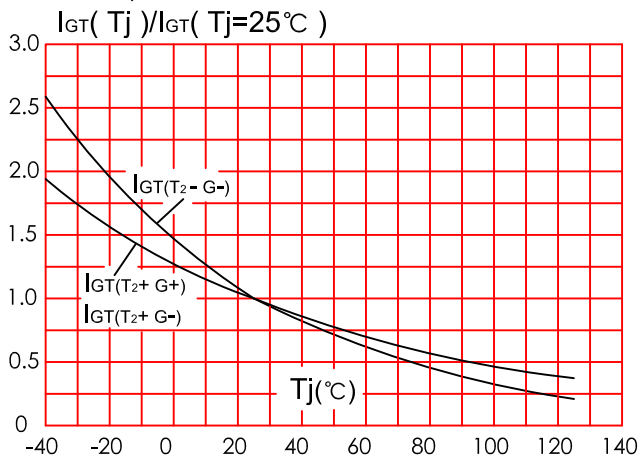
**Fig.3:** On-state characteristics (typical and maximum values).



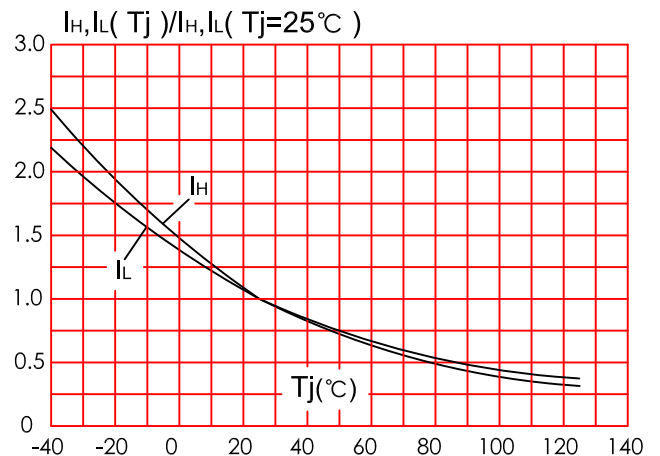
**Fig. 4:** Non-repetitive surge peak on-state current versus number of cycles



**FIG5:** Relative variations of gate trigger current versus junction temperature(typical values)



**FIG6:** Relative variations of holding current and latching current versus junction temperature(typical values)



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