

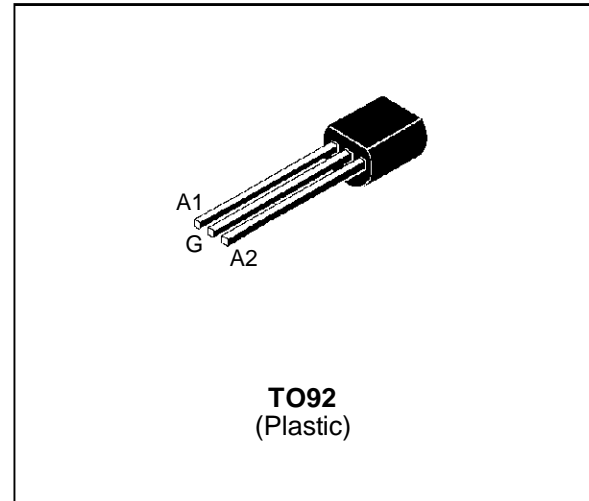
## SENSITIVE GATE TRIACS

### FEATURES

- $I_{T(RMS)} = 0.8A$
- $V_{DRM} = 400V$  to  $800V$
- $I_{GT} \leq 3mA$  to  $\leq 25mA$

### DESCRIPTION

The Z01xxxA series of triacs uses a high performance TOP GLASS PNP technology. These parts are intended for general purpose applications where gate high sensitivity is required.



### ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
$I_{T(RMS)}$	RMS on-state current (360° conduction angle)	$T_I = 70\text{ }^\circ\text{C}$ 0.8	A
$I_{TSM}$	Non repetitive surge peak on-state current ( $T_j$ initial = $25^\circ\text{C}$ )	$t_p = 8.3\text{ ms}$	8.5
		$t_p = 10\text{ ms}$	8
$I^2t$	$I^2t$ Value for fusing	$t_p = 10\text{ ms}$ 0.32	$A^2s$
$di/dt$	Critical rate of rise of on-state current $I_G = 50\text{ mA}$ $di_G/dt = 0.1\text{ A}/\mu\text{s}$ .	Repetitive $F = 50\text{ Hz}$	10
		Non Repetitive	50
$T_{stg}$ $T_j$	Storage and operating junction temperature range	- 40, + 150 - 40, + 125	$^\circ\text{C}$
$T_I$	Maximum lead temperature for soldering during 10s at 2mm from case	260	$^\circ\text{C}$

Symbol	Parameter	Voltage				Unit
		D	M	S	N	
$V_{DRM}$ $V_{RRM}$	Repetitive peak off-state voltage $T_j = 125^\circ\text{C}$	400	600	700	800	V

## Z01xxxA

### THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
Rth(j-a)	Junction to ambient	150	°C/W
Rth(j-l)	Junction to leads for D.C	80	°C/W
Rth(j-l)	Junction to leads for A.C 360° conduction angle (F=50Hz)	60	°C/W

### GATE CHARACTERISTICS (maximum values)

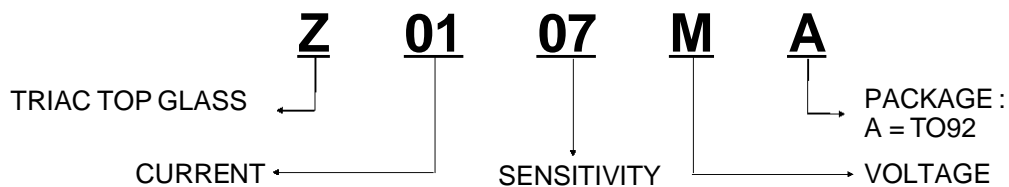
$P_G (AV) = 0.1 W$   $P_{GM} = 2 W$  ( $t_p = 20 \mu s$ )  $I_{GM} = 1 A$  ( $t_p = 20 \mu s$ )

### ELECTRICAL CHARACTERISTICS

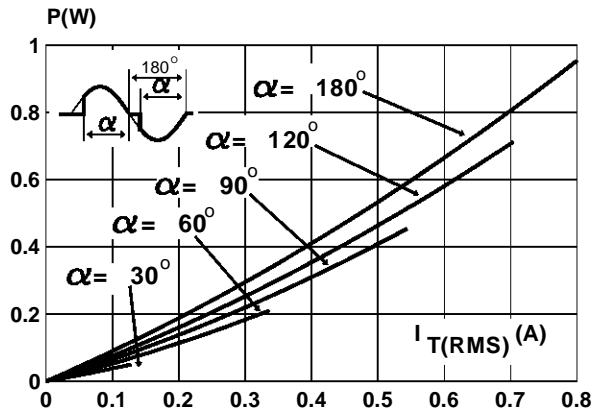
Symbol	Test Conditions		Quadrant		Sensitivity				Unit
					03	07	09	10	
I <sub>GT</sub>	V <sub>D</sub> =12V (DC) R <sub>L</sub> =140Ω	T <sub>j</sub> = 25°C	I-II-III	MAX	3	5	10	25	mA
			IV	MAX	5	7	10	25	
V <sub>GT</sub>	V <sub>D</sub> =12V (DC) R <sub>L</sub> =140Ω	T <sub>j</sub> = 25°C	I-II-III-IV	MAX	1.5				V
V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> R <sub>L</sub> =3.3kΩ	T <sub>j</sub> = 125°C	I-II-III-IV	MIN	0.2				V
t <sub>gt</sub>	V <sub>D</sub> =V <sub>DRM</sub> I <sub>G</sub> = 40mA I <sub>T</sub> = 1.1A dI <sub>G</sub> /dt = 0.5A/μs	T <sub>j</sub> = 25°C	I-II-III-IV	TYP	2				μs
I <sub>H</sub> *	I <sub>T</sub> = 50 mA Gate open	T <sub>j</sub> = 25°C		MAX	7	10	10	25	mA
I <sub>L</sub>	I <sub>G</sub> = 1.2 I <sub>GT</sub>	T <sub>j</sub> = 25°C	I-III-IV	TYP	7	10	10	25	mA
			II	TYP	14	20	20	50	
V <sub>TM</sub> *	I <sub>TM</sub> = 1.1A t <sub>p</sub> = 380μs	T <sub>j</sub> = 25°C		MAX	1.5				V
I <sub>DRM</sub> I <sub>R</sub> RM	V <sub>D</sub> = V <sub>DRM</sub> V <sub>R</sub> = V <sub>R</sub> RM	T <sub>j</sub> = 25°C		MAX	10				μA
		T <sub>j</sub> = 110°C		MAX	200				
dV/dt*	V <sub>D</sub> =67%V <sub>DRM</sub> Gate open	T <sub>j</sub> = 110°C		MIN	10	20	50	100	V/μs
				TYP	20	50	150	400	
(dV/dt) <sub>c</sub> *	(dI/dt) <sub>c</sub> = 0.35 A/ms	T <sub>j</sub> = 110°C		MIN			2	5	V/μs
				TYP	1	1			

\* For either polarity of electrode A<sub>2</sub> voltage with reference to electrode A<sub>1</sub>

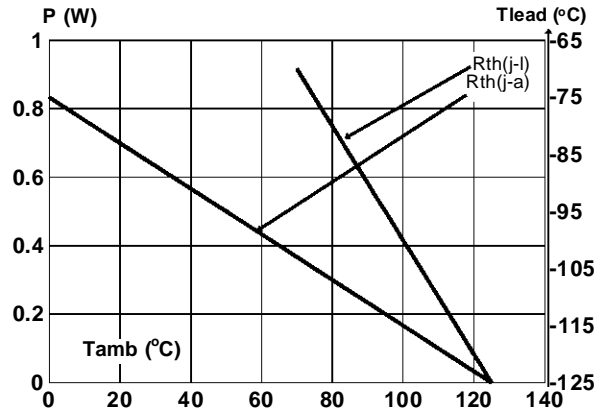
### ORDERING INFORMATION



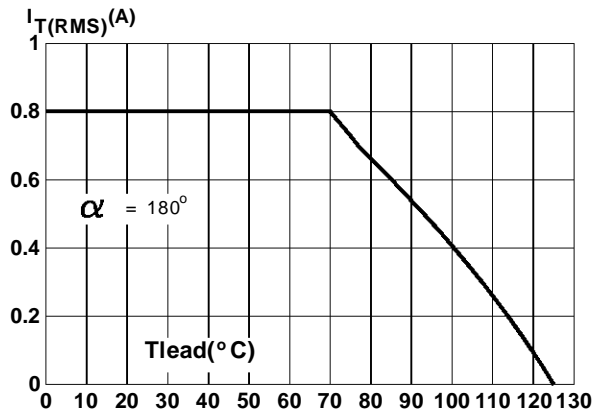
**Fig.1 :** Maximum RMS power dissipation versus RMS on-state current.



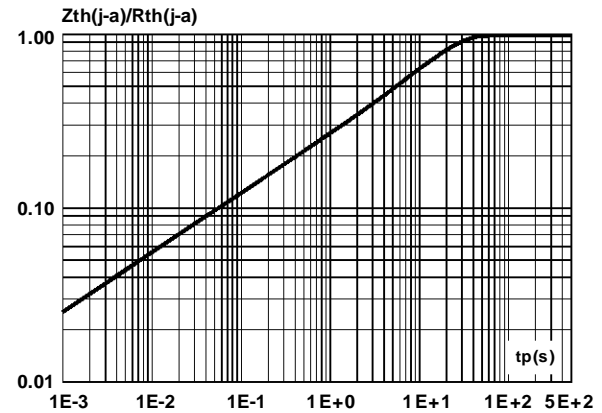
**Fig.2 :** Correlation between maximum RMS power dissipation and maximum allowable temperature (Tamb and Tlead).



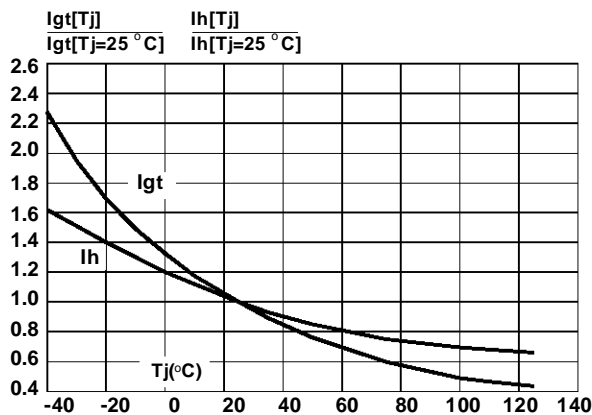
**Fig.3 :** RMS on-state current versus case temperature.



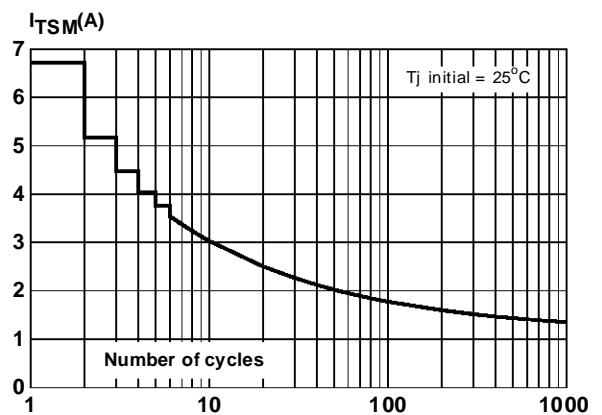
**Fig.4 :** Relative variation of thermal impedance junction to ambient versus pulse duration.



**Fig.5 :** Relative variation of gate trigger current and holding current versus junction temperature.

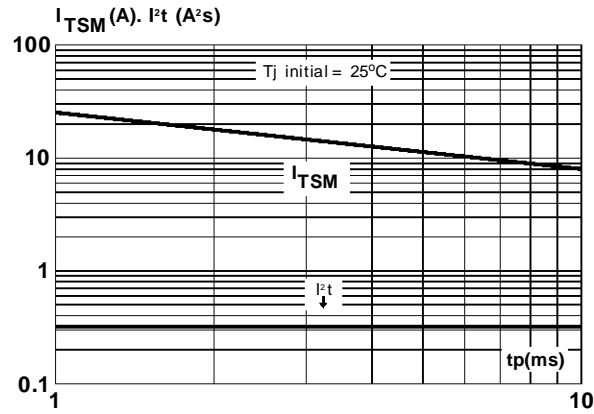


**Fig.6 :** Non repetitive surge peak on-state current versus number of cycles.

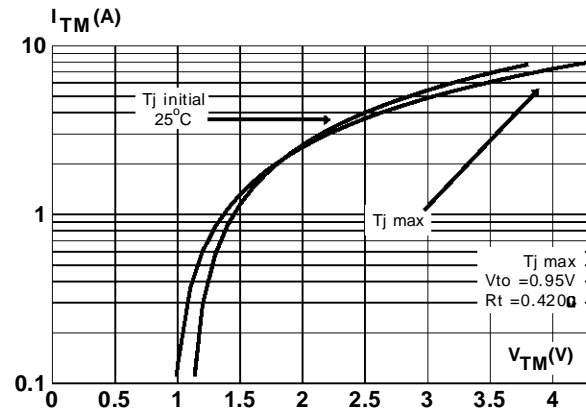


## Z01xxxA

**Fig.7 :** Non repetitive surge peak on-state current for a sinusoidal pulse with width :  $t_p \leq 10\text{ms}$ , and corresponding value of  $I^2t$ .

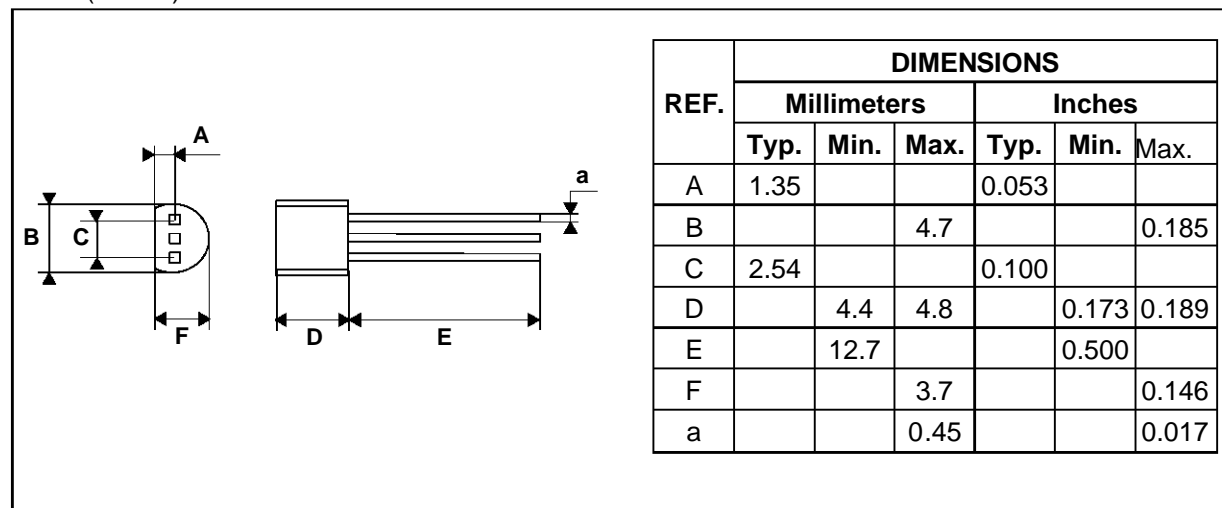


**Fig.8 :** On-state characteristics (maximum values).



**PACKAGE MECHANICAL DATA**

TO92 (Plastic)



Marking : type number

Weight : 0.2 g

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