

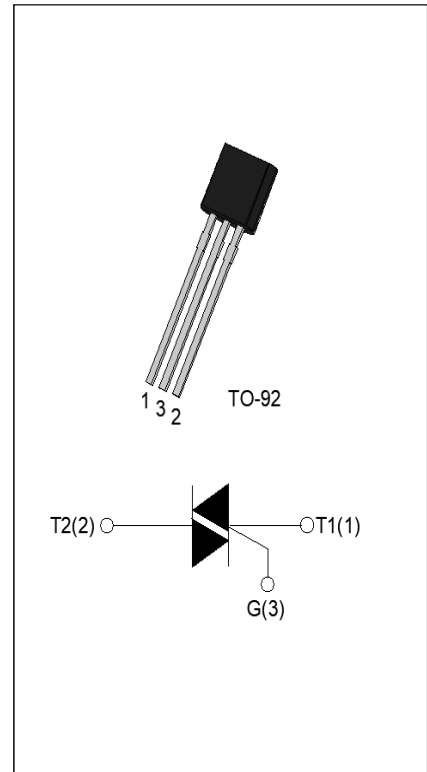
**MAC97A6**
**MAIN FEATURES    4Q TRIAC**

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
$V_{DRM}/V_{RRM}$	600	V
$I_{GT1/2/3}$	5/5/5/10	mA

**DESCRIPTION:**

The MAC97A6 triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers.

Package TO-92 is RoHS compliant.


**ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Value	Unit
Storage junction temperature range	$T_{stg}$	-40-150	°C
Operating junction temperature range	$T_j$	-40-125	°C
Repetitive peak off-state voltage ( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	600	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	600	V
RMS on-state current ( $T_c \leq 90^\circ\text{C}$ )	$I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I_{TSM}$	10	A
$I^2t$ value for fusing ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I^2t$	0.41	$\text{A}^2\text{s}$
Critical rate of rise of on-state current ( $T_j=125^\circ\text{C}$ )	$di/dt$	50	$\text{A}/\mu\text{s}$
Peak gate current ( $t_p=20\mu\text{s}$ , $T_j=125^\circ\text{C}$ )	$I_{GM}$	1	A
Average gate power dissipation ( $T_j=125^\circ\text{C}$ )	$P_{G(AV)}$	0.1	W

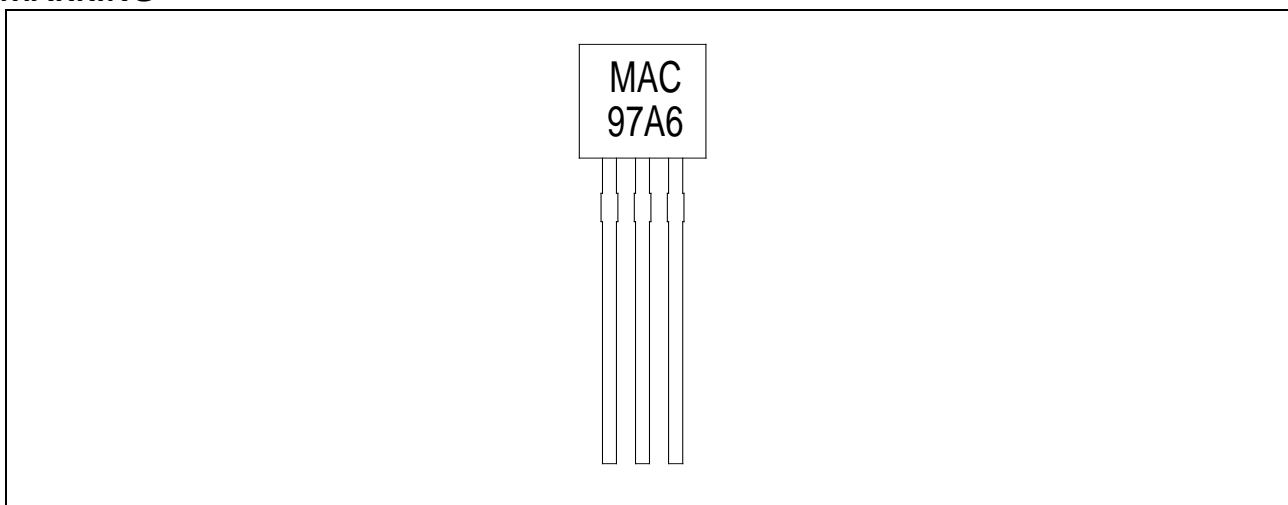
**ELECTRICAL CHARACTERISTICS** ( $T_j=25^{\circ}\text{C}$  unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
$I_{GT}$	$V_D=12\text{V } R_L=100\Omega$	I - II -III	MAX.	5	mA
		IV		10	
$V_{GT}$		ALL	MAX.	1	V
$V_{GD}$	$V_D=V_{DRM} T_j=125^{\circ}\text{C}$ $R_L=100\Omega$	ALL	MIN.	0.2	V
$I_L$	$I_G=1.2I_{GT}$	I -III-IV	MAX.	5	mA
		II		20	
$I_H$	$I_T=500\text{mA}$		MAX.	8	mA
dV/dt	$V_D=2/3V_{DRM} T_j=125^{\circ}\text{C}$		MIN.	50	V/ $\mu\text{s}$

**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=1.5\text{A}$	$T_j=25^{\circ}\text{C}$	1.30	V
$V_{TO}$	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.98	V
$R_D$	Dynamic resistance	$T_j=125^{\circ}\text{C}$	362	m $\Omega$
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	$\mu\text{A}$
$I_{RRM}$		$T_j=125^{\circ}\text{C}$	0.15	mA

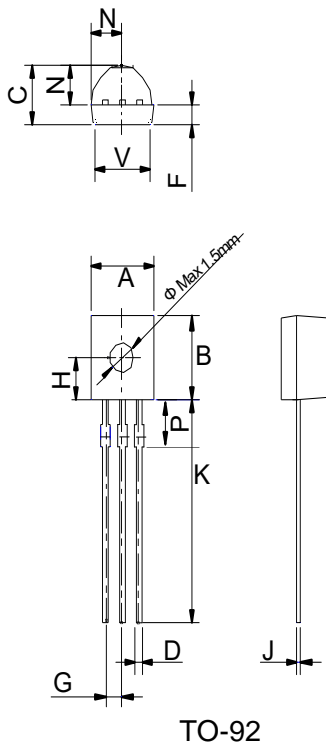
**MARKING**



ORDERING INFORMATION

Order code	Voltage V <sub>DRM</sub> /V <sub>R<sub>RRM</sub></sub> (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		I -II-III	IV			
MAC97A6	600	5	10	TO-92	1000	BULK

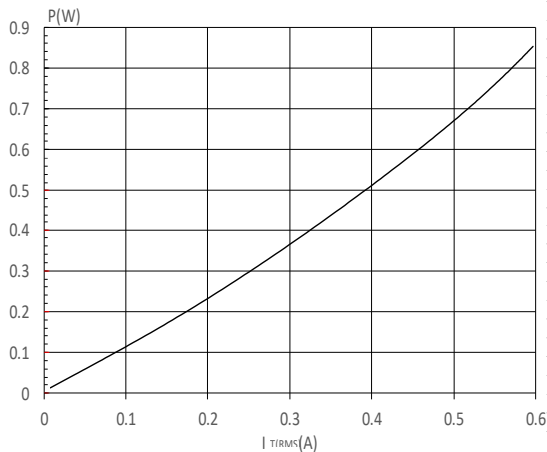
PACKAGE MECHANICAL DATA



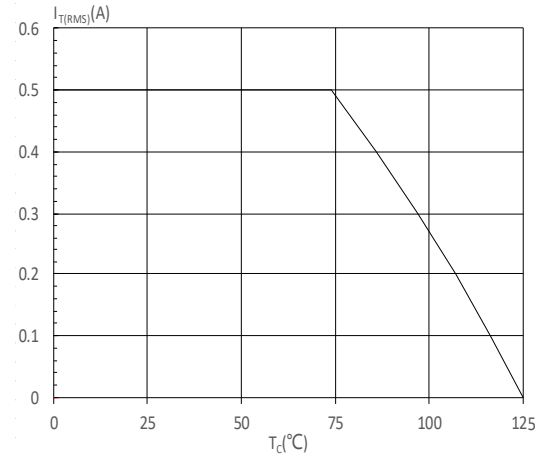
Ref.	Dimensions		
	Millimeters		
	Min.	Typ.	Max.
A	4.43	4.58	4.83
B	4.38	4.58	4.78
C	/	/	3.86
D	0.45	0.46	0.47
F	8.97	9.17	9.37
G	9.96	10.16	10.36
H	6.48	6.68	6.88
J	2.44	2.54	2.64
K	28.65	28.95	29.25
N	1.10	1.30	1.50
P	3.15	3.30	3.45
V	3.15	3.30	3.45

PACKAGE	OUTLINE	REEL (PCS)	INNER BOX (PCS)	PER CARTON
TO-92	BULK	1000	/	10,000

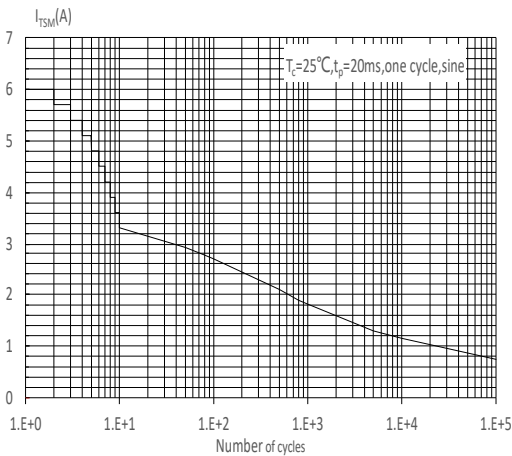
**FIG.1** Maximum power dissipation versus RMS on-state current



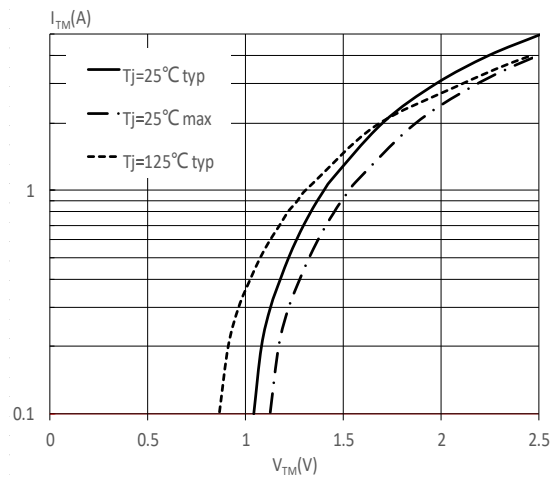
**FIG.2:** RMS on-state current versus case temperature



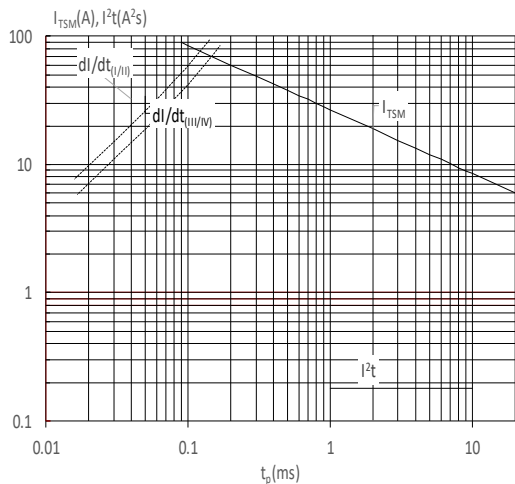
**FIG.3:** Surge peak on-state current versus number of cycles



**FIG.4:** On-state characteristics



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



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

