

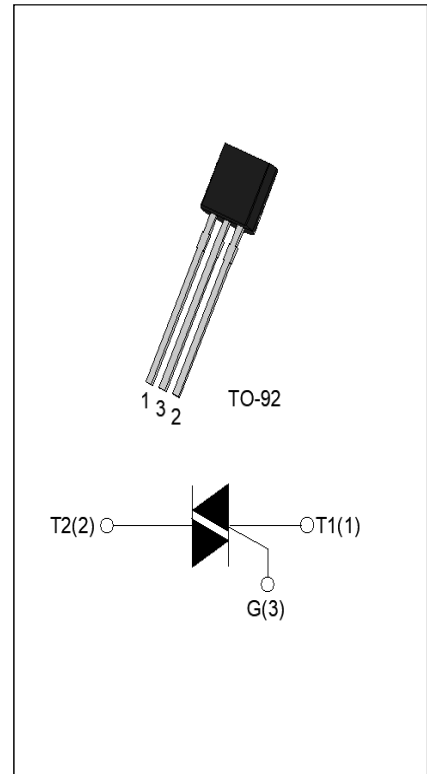
MAC97A8
MAIN FEATURES 4Q TRIAC

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
V_{DRM}/V_{RRM}	800	V
$I_{GT1/2/3}$	5/5/5/10	mA

DESCRIPTION:

The MAC97A8 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}	800	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	800	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	A^2s
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

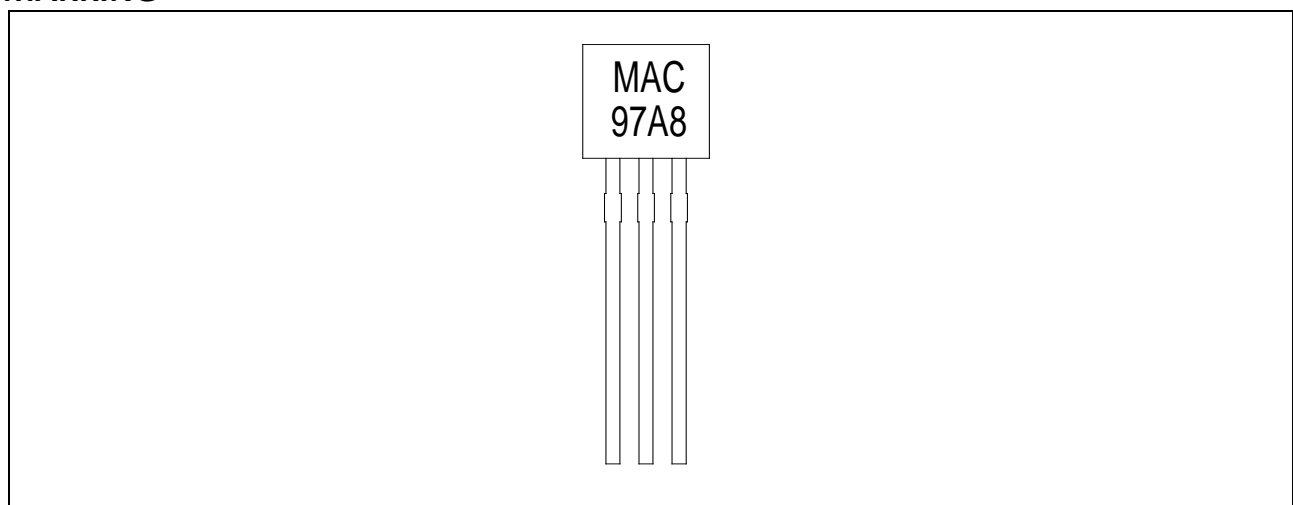
ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

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/ μs

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 Ω
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.15	mA

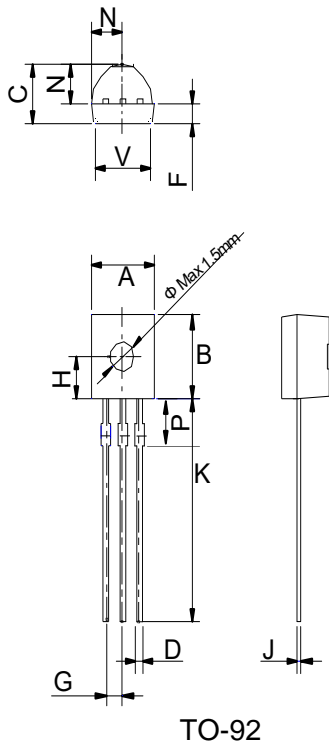
MARKING



ORDERING INFORMATION

Order code	Voltage V _{DRM} /V _{R_{RRM}} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		I -II-III	IV			
MAC97A8	800	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

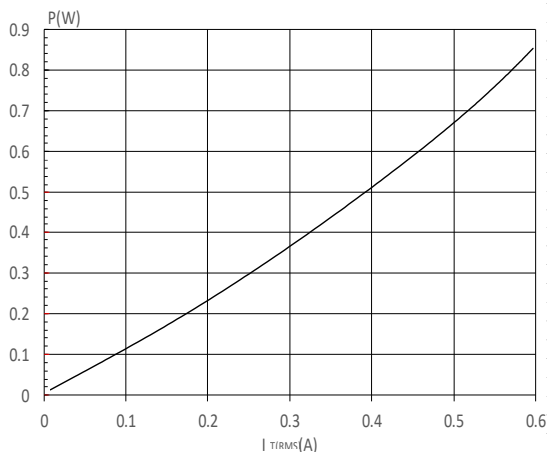


FIG.2: RMS on-state current versus case temperature

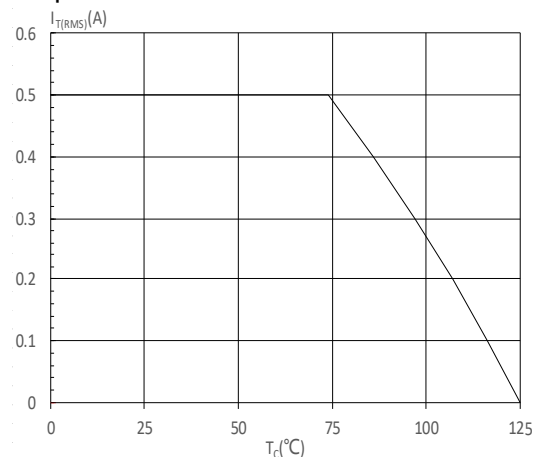


FIG.3: Surge peak on-state current versus number of cycles

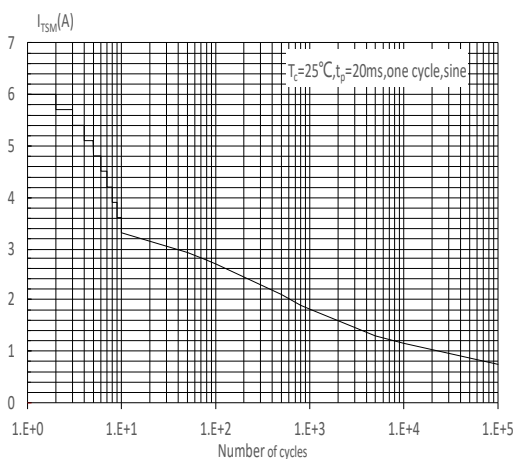


FIG.4: On-state characteristics

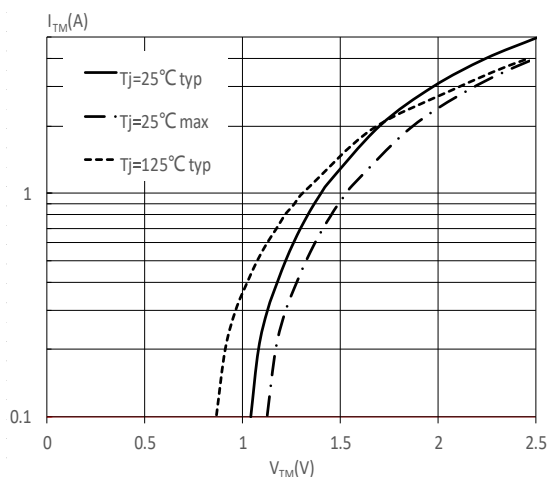


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t (I - II: $di/dt < 50\text{A}/\mu\text{s}$; III-IV: $di/dt < 20\text{A}/\mu\text{s}$)

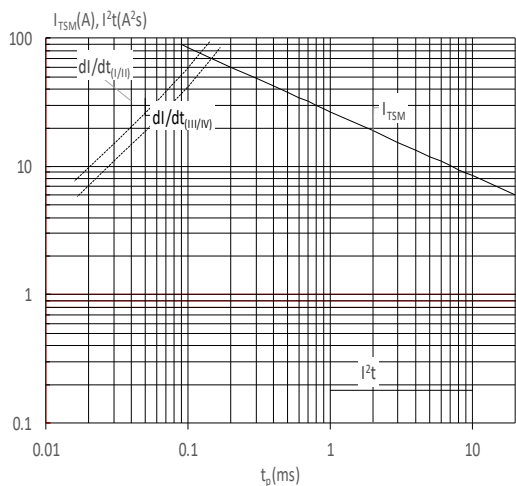


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

