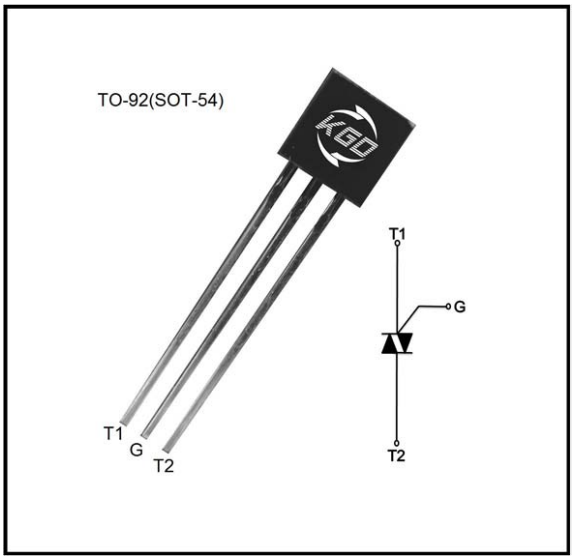
MAC97A6,MAC97A8 Series

- **Description:**
  Logic level sensitive gate triac intended to interfaced directly to microcontrollers,logic integrated circuits and other low power gate trigger circuits.

- **Applications**
  This device is suitable for low power AC switching application,phase control application such as fan speed and temperature modulation control,lighting control and static switching relay.

- **Features:**
  Blocking voltage to 400/600V
  On-state RMS current to 0.8A
  Non-repetitive peak on-state current to 8A



- **Absolute Maximum Ratings**

Symbol	Parameter	Conditions	Value		Unit
			97A6	97A8	
V_{DRM}	Repetitive peak off-state voltage	T_J=25℃	400	600	V
V_{RRM}	Repetitive peak Reverse voltage	T_J=25℃	400	600	V
$I_{T(RMS)}$	RMS on-state current (full sine wave)	T_c=110℃	0.8		A
$I_{T(av)}$	Average on-state current (full sine wave)	T_c=110℃	0.5		A
I_{TSM}	Non-repetitive surge peak On-state current (One full cycle,sine wave,T_C=110℃)	tp=10ms	8		A
		tp=8.3ms	8.3		
I^2t	I^2t Value for fusing	tp=10ms	0.32		A^2S
I_{GM}	Peak gate current	tp≤2μs, T_J=80℃	1		A
$P_{G(AV)}$	Average gate power dissipation	tp≤10ms, T_J=80℃	0.1		W
PGM	Peak gate power dissipation		1		W
T_{STG}	Storage temperature		-40	150	℃
T_J	Junction temperature		-40	125	℃

● Electrical Characteristics

Symbol	Conditions	Quadrant	Value		Unit
			MIN	MAX	
I_{GT}	V_D=12V,R_L=33Ω	Ⅰ-Ⅱ-Ⅲ	/	5	mA
		Ⅳ	/	7	
V_{GT}		ALL	/	1.5	V
V_{GD}	V_D=V_{DRM},R_L=3.3KΩ,T_J=125℃	ALL	0.2	/	V
I_L	I_G=1mA	ALL	/	10	mA
I_H	I_T=200mA		/	5	mA
dv/dt	V_{DM}=67%V_{DRM}, gate open,T_J=125℃		25	/	V/μs

● Electrical Characteristics

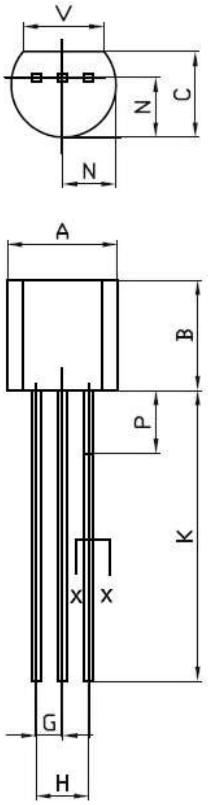
Symbol	Parameter		Numerical	Unit
V_{TM}	I_T=1.1A,tp=380μs	T_J=25℃	1.5	V
I_{DRM} I_{RRM}	V_D=V_{DRM},V_R=V_{RRM}	T_J=25℃	5	μA
		T_J=125℃	0.1	mA

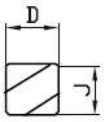
● Thermal Characteristics

Symbol	Parameter	Numerical(MAX)	Unit
$R_{th(j-c)}$	Junction to case(AC)	75	℃/W
$R_{th(j-a)}$	Junction to ambient(AC)	150	℃/W

- **Package Outline Dimensions**

TO-92（SOT-54）





SECTION
X-X

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.45	5.2	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
G	1.15	1.39	0.045	0.055
H	2.42	2.66	0.095	0.105
J	0.39	0.50	0.015	0.020
K	12.70	-	0.500	-
N	2.04	2.66	0.080	0.105
P	-	2.54	-	0.100
V	3.43	-	0.135	-

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

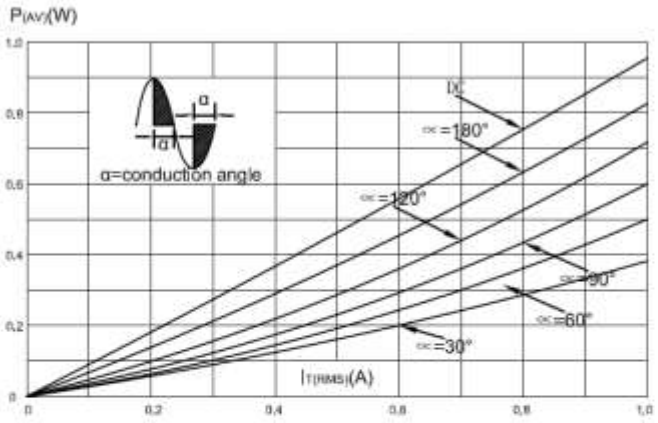


FIG.2: RMS on-state current versus case temperature.

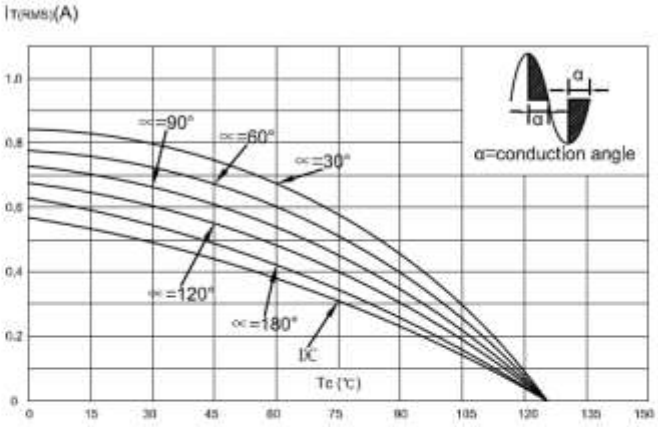


FIG.3: On-state characteristics (maximum values)

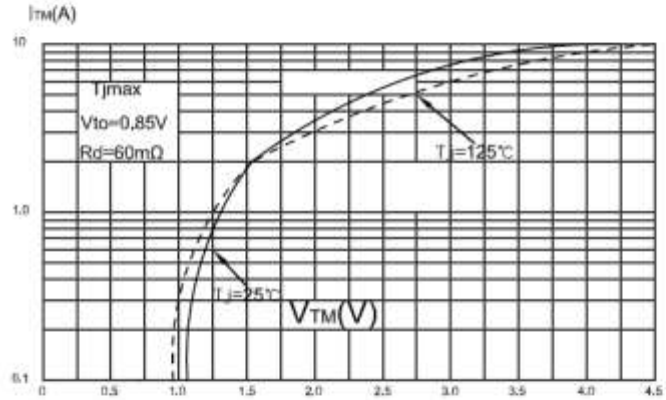


FIG.4: Surge peak on-state current versus number of cycles.

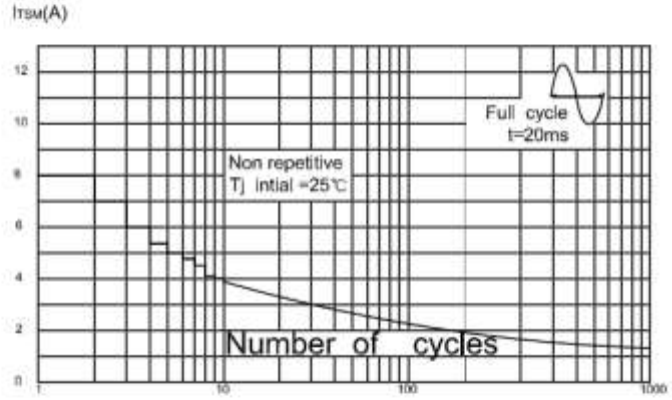


FIG.5: Relative variation of gate trigger current,holding current and latching current versus junction temperature(typical values).