



YIHUA

PART NAME: MAC97A6

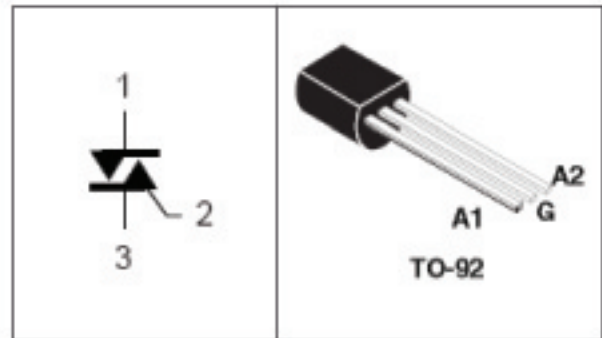
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Establishment: Carolyn

绍兴怡华电子科技有限公司

■ 主要特点:

符号	数值	单位
$I_T (RMS)$	0.6	A
V_{DRM}/V_{RRM}	400&600	V
$I_{GT(Q1)}$	5to10	mA



- 表面玻璃钝化保护结构;
- 双向触发、维持特性;
- 热阻低、触发灵敏度高;
- **Rohs** 环保封装。

■ 用途:

MAC97 双向可控硅系列适用于一般交流开关电路,如:固态继电器,感应马达启动控制,调温控制,调光控制,调速控制...等。

■ 热特性:

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	75	$^{\circ}C/W$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	$^{\circ}C/W$
Maximum Lead Temperature for Soldering Purposes for 10 Seconds	T_L	260	$^{\circ}C$

■ 极限值:

MAXIMUM RATINGS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Peak Repetitive Off-State Voltage ($T_J = -40$ to $+110^\circ\text{C}$) (Note 1) Sine Wave 50 to 60 Hz, Gate Open MAC97A4 MAC97A6 MAC97-8, MAC97A8	V_{DRM} , V_{RRM}	200 400 600	Volts
On-State RMS Current Full Cycle Sine Wave 50 to 60 Hz ($T_C = +50^\circ\text{C}$)	$I_{\text{T(RMS)}}$	0.6	Amp
Peak Non-Repetitive Surge Current One Full Cycle, Sine Wave 60 Hz ($T_C = 110^\circ\text{C}$)	I_{TSM}	8.0	Amps
Circuit Fusing Considerations ($t = 8.3$ ms)	I^2t	0.26	A^2s
Peak Gate Voltage ($t \leq 2.0$ μs , $T_C = +80^\circ\text{C}$)	V_{GM}	5.0	Volts
Peak Gate Power ($t \leq 2.0$ μs , $T_C = +80^\circ\text{C}$)	P_{GM}	5.0	Watts
Average Gate Power ($T_C = 80^\circ\text{C}$, $t \leq 8.3$ ms)	$P_{\text{G(AV)}}$	0.1	Watt
Peak Gate Current ($t \leq 2.0$ μs , $T_C = +80^\circ\text{C}$)	I_{GM}	1.0	Amp
Operating Junction Temperature Range	T_J	-40 to $+110$	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to $+150$	$^\circ\text{C}$

■ 电特性:

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted; Electricals apply in both directions)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Peak Repetitive Blocking Current ($V_D = \text{Rated } V_{\text{DRM}}, V_{\text{RRM}}; \text{ Gate Open}$) $T_J = 25^\circ\text{C}$ $T_J = +110^\circ\text{C}$	$I_{\text{DRM}}, I_{\text{RRM}}$	– –	– –	10 100	μA μA
Peak On-State Voltage ($I_{\text{TM}} = \pm .85$ A Peak; Pulse Width ≤ 2.0 ms, Duty Cycle $\leq 2.0\%$)	V_{TM}	–	–	1.9	Volts
Gate Trigger Current (Continuous dc) ($V_D = 12$ Vdc, $R_L = 100$ Ohms) MAC97-8 Device MT2(+), G(+) MT2(+), G(–) MT2(–), G(–) MT2(–), G(+) MAC97A4,A6,A8 Devices MT2(+), G(+) MT2(+), G(–) MT2(–), G(–) MT2(–), G(+)	I_{GT}	– – – –	– – – –	10 10 10 10 5.0 5.0 5.0 7.0	mA

■ 电特性:

Gate Trigger Voltage (Continuous dc) ($V_D = 12 \text{ Vdc}$, $R_L = 100 \text{ Ohms}$) MT2(+), G(+) All Types MT2(+), G(-) All Types MT2(-), G(-) All Types MT2(-), G(+) All Types	V_{GT}	-	.66	2.0	Volts
Gate Non-Trigger Voltage ($V_D = 12 \text{ V}$, $R_L = 100 \text{ Ohms}$, $T_J = 110^\circ\text{C}$) All Four Quadrants	V_{GD}	0.1	-	-	Volts
Holding Current ($V_D = 12 \text{ Vdc}$, Initiating Current = 200 mA, Gate Open)	I_H	-	1.5	10	mA
Turn-On Time ($V_D = \text{Rated } V_{DRM}$, $I_{TM} = 1.0 \text{ A pk}$, $I_G = 25 \text{ mA}$)	t_{gt}	-	2.0	-	μs

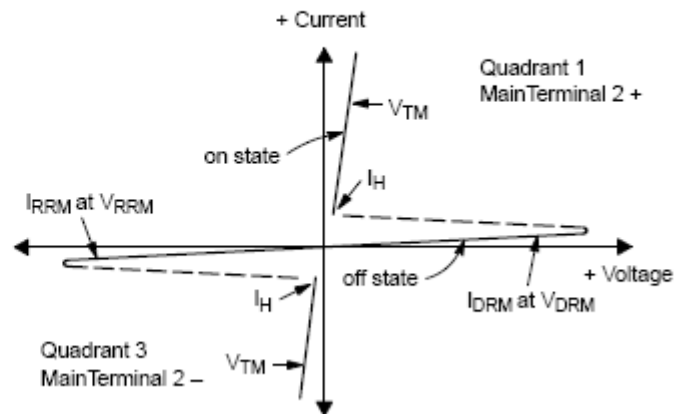
DYNAMIC CHARACTERISTICS

Critical Rate-of-Rise of Commutation Voltage ($V_D = \text{Rated } V_{DRM}$, $I_{TM} = .84 \text{ A}$, Commutating $di/dt = .3 \text{ A/ms}$, Gate Unenergized, $T_C = 50^\circ\text{C}$)	$dv/dt(c)$	-	5.0	-	$\text{V}/\mu\text{s}$
Critical Rate of Rise of Off-State Voltage ($V_D = \text{Rated } V_{DRM}$, $T_C = 110^\circ\text{C}$, Gate Open, Exponential Waveform)	dv/dt	-	25	-	$\text{V}/\mu\text{s}$

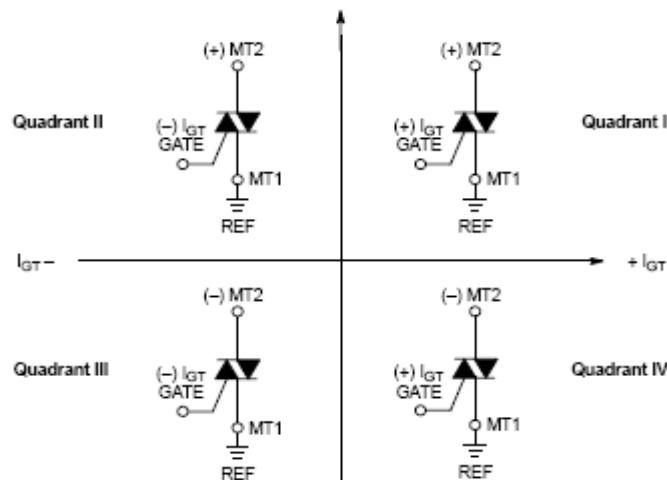
■ 电流、电压特性:

Voltage Current Characteristic of Triacs
(Bidirectional Device)

Symbol	Parameter
V_{DRM}	Peak Repetitive Forward Off State Voltage
I_{DRM}	Peak Forward Blocking Current
V_{RRM}	Peak Repetitive Reverse Off State Voltage
I_{RRM}	Peak Reverse Blocking Current
V_{TM}	Maximum On State Voltage
I_H	Holding Current



■ 象限值:



■ 特性曲线:

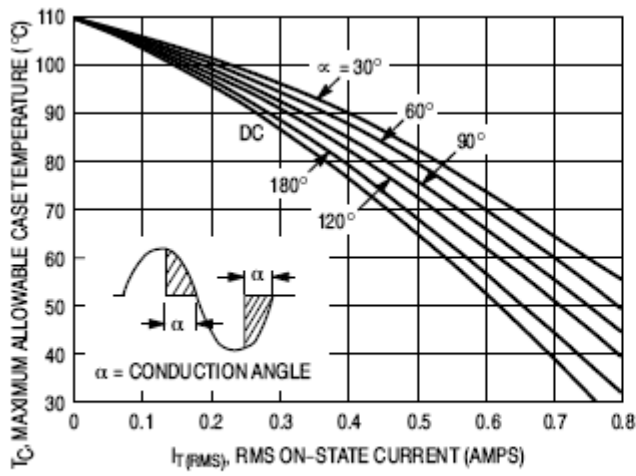


Figure 1. RMS Current Derating

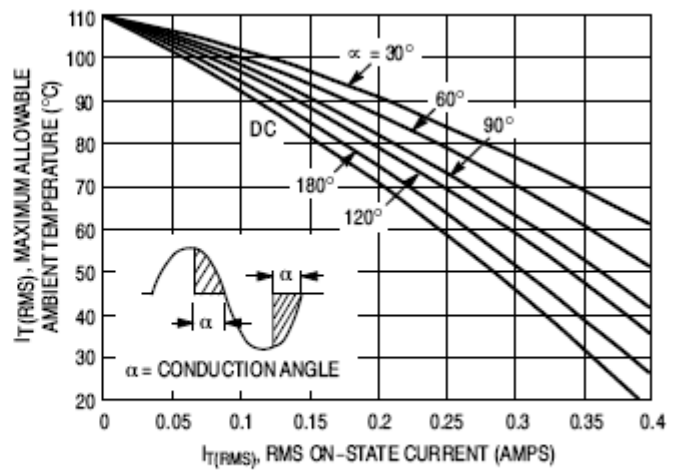


Figure 2. RMS Current Derating

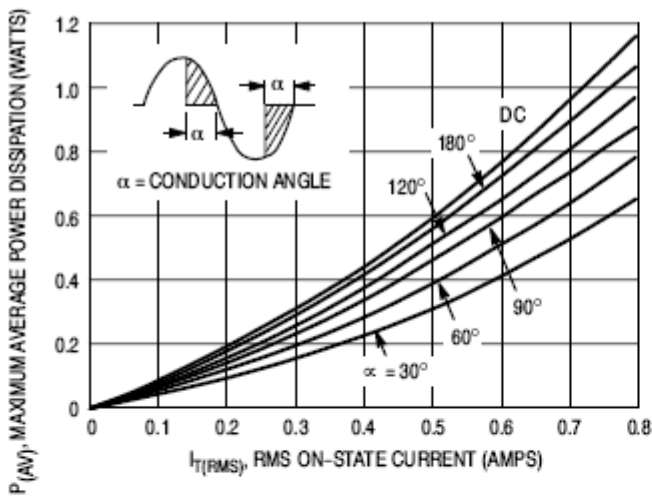


Figure 3. Power Dissipation

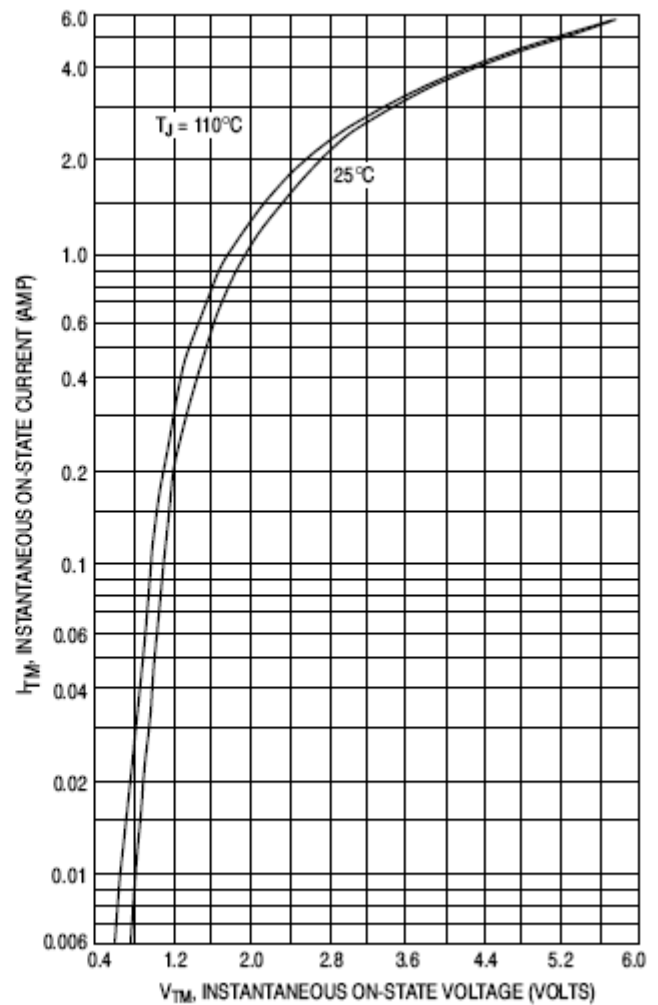


Figure 4. On-State Characteristics

■ 特性曲线:

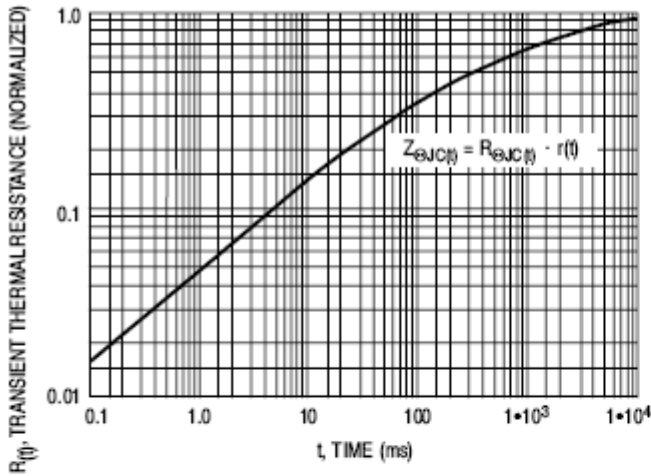


Figure 5. Transient Thermal Response

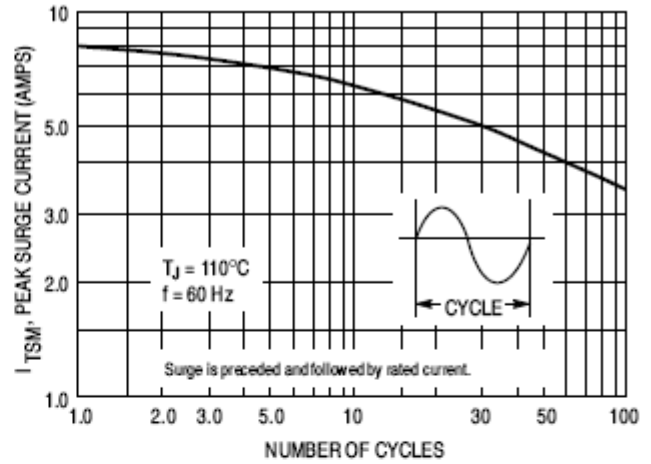


Figure 6. Maximum Allowable Surge Current

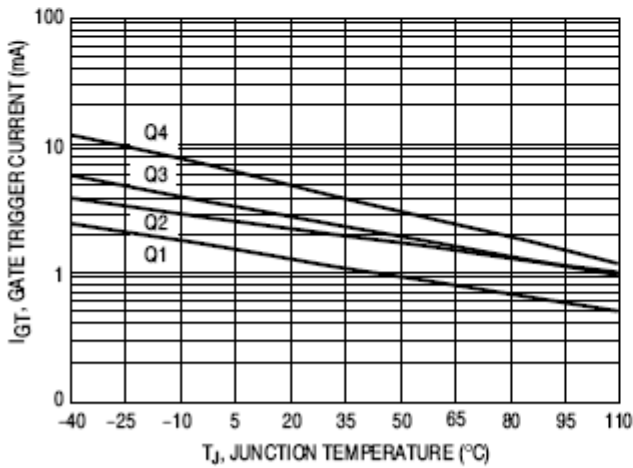


Figure 7. Typical Gate Trigger Current versus Junction Temperature

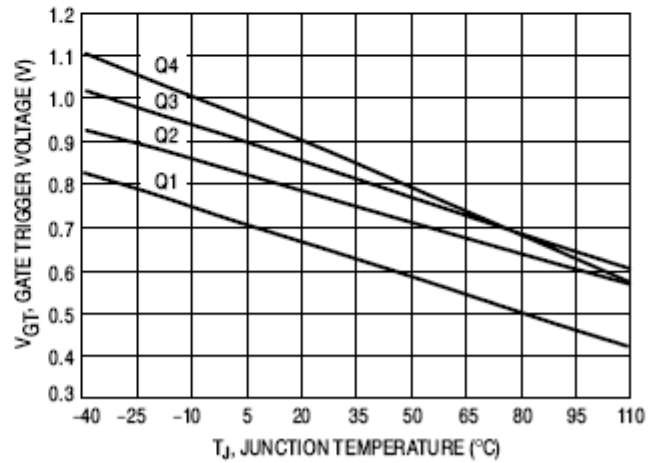


Figure 8. Typical Gate Trigger Voltage versus Junction Temperature

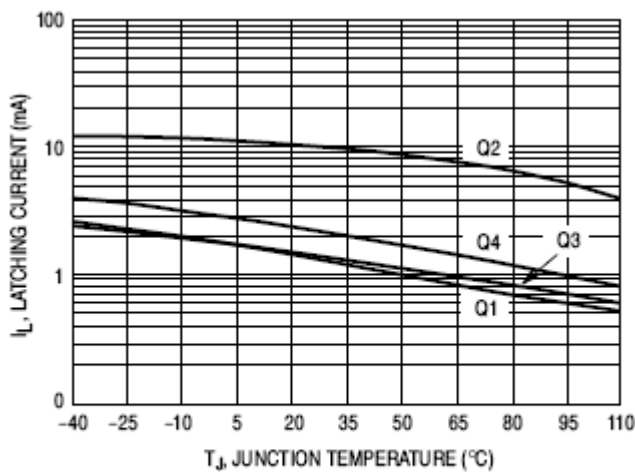


Figure 9. Typical Latching Current versus Junction Temperature

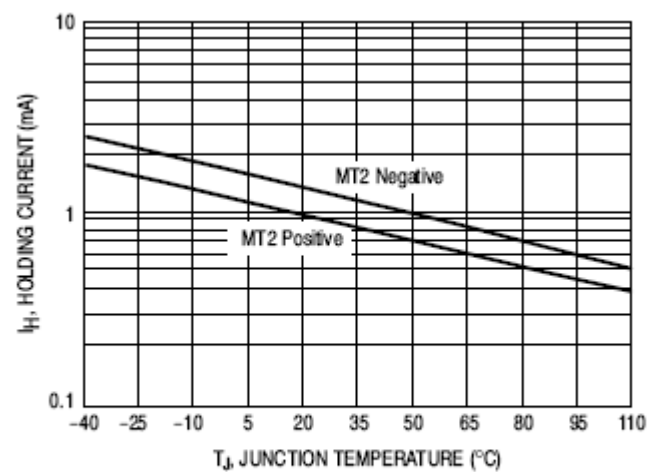
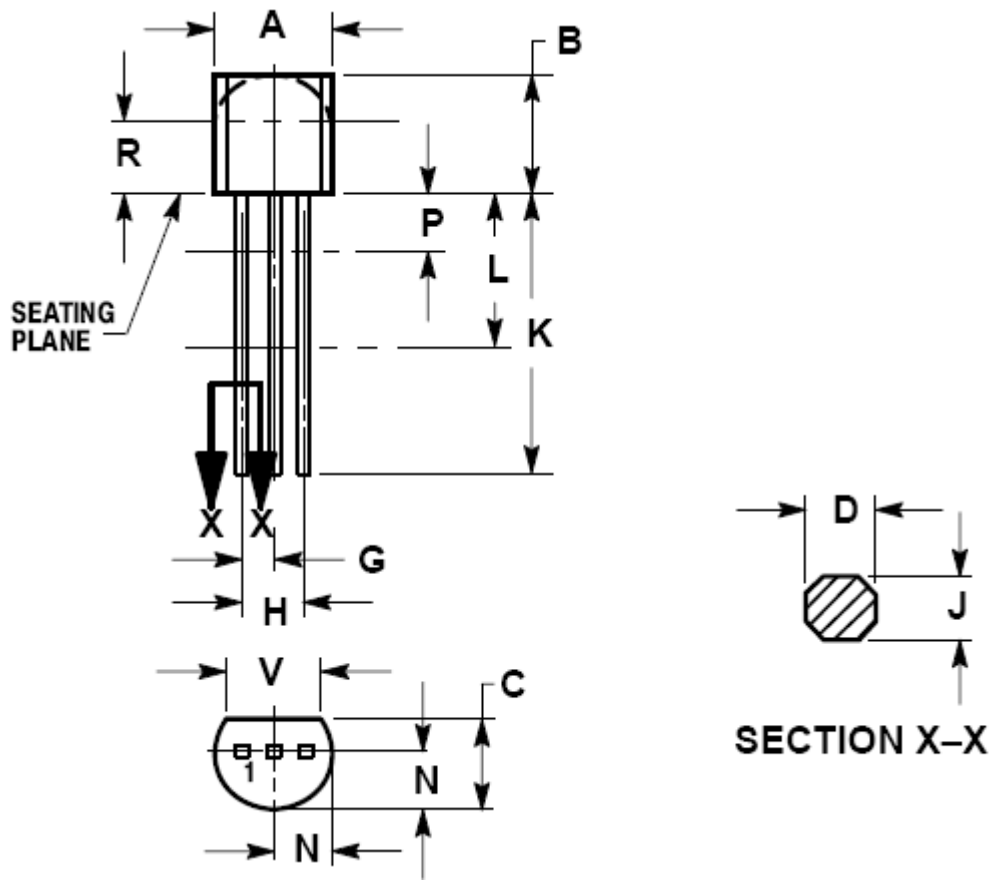


Figure 10. Typical Holding Current versus Junction Temperature

■ TO-92 外形尺寸



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---

STYLE 12:

- PIN 1. MAIN TERMINAL 1
- 2. GATE
- 3. MAIN TERMINAL 2