

深圳市晶泰源电子有限公司

MAC97A6,A8 TRIAC

MAIN FEATURES

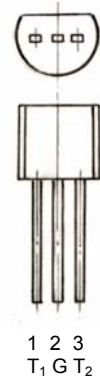
Symbol	value	unit
$I_{T(RMS)}$	1	A
V_{DRM}/V_{RRM}	MAC97A6	400
	MAC97A8	600
I_{TSM}	8	A

TO-92

1. ANODE

2. GATE

3. ANODE



DESCRIPTION

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

FEATURES

- Blocking voltage to 400 V (MAC97A6)
- RMS on-state current to 0.6 A
- General purpose bidirectional switching

APPLICATIONS

- General purpose bidirectional switching
- Phase control applications
- Solid state relays.

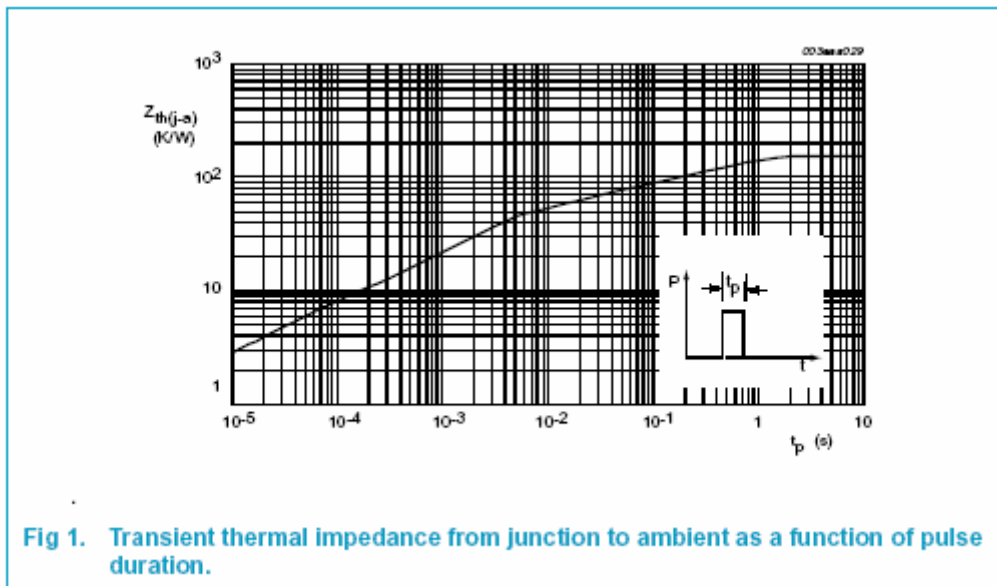
Limiting values

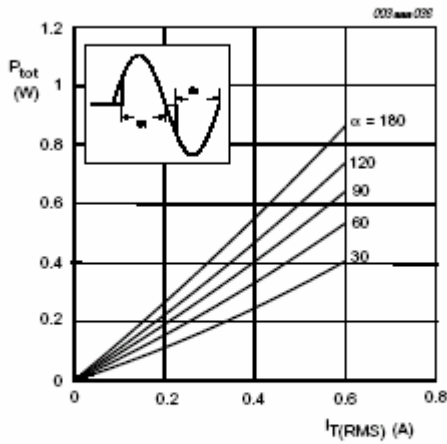
Symbol	Parameter	Conditions	Value	Unit
V_{DRM}	repetitive peak off-state voltage	MAC97A6	400	V
		MAC97A8	600	
I_{GM}	gate current(peak value)	$t = 2\mu s$ max	1	A
V_{GM}	gate voltage(peak value)	$t = 2\mu s$ max	5	V
P_{GM}	gate power(peak value)	$t = 2\mu s$ max	5	W
T_J	Junction Temperature	-	-40 to 125	°C
T_{stg}	Storage Temperature	-	-40 to 150	°C

ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	MAX	UNIT	
Rated repetitive peak off-state voltage	V_{DRM}, V_{RRM}	$I_D=10\mu A$ MAC97A6 MAC97A8	400 600		V	
Rated repetitive peak off-state current	I_{DRM}	$V_D=V_{DRM}$		10	μA	
On-state voltage	V_{TM}	$I_T=1A, I_G=50mA$		1.9	V	
Gate trigger current	I	I_{GT}	$V_D=12V$ $R_L=100\Omega$	T ₂ (+), G(+)	5	mA
				T ₂ (+), G(-)	5	mA
				T ₂ (-), G(-)	5	mA
				T ₂ (-), G(+)	-	mA
Gate trigger voltage	I	V_{GT}	$V_D=12V$ $R_L=100\Omega$	T ₂ (+), G(+)	1.5	V
				T ₂ (+), G(-)	1.5	V
				T ₂ (-), G(-)	1.5	V
				T ₂ (-), G(+)	-	V
Holding current	I_H	$I_T=600mA, I_G=20mA$		10	mA	

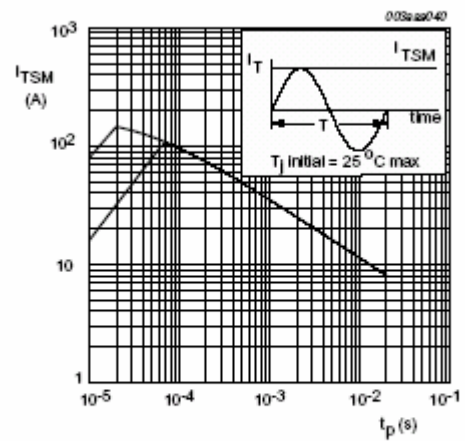
Typical Characteristics





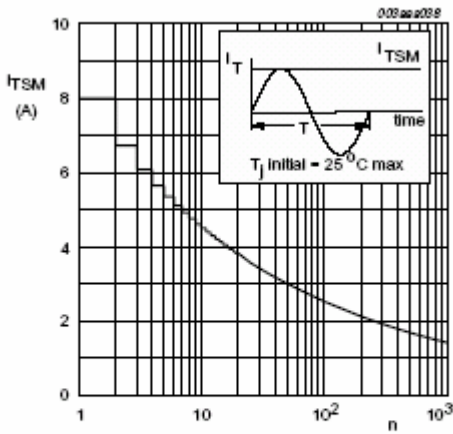
α = conduction angle

Fig 2. Maximum on-state dissipation as a function of RMS on-state current; typical values.



$t_p \leq 20$ ms

Fig 3. Maximum permissible non-repetitive peak on-state current as a function of pulse width for sinusoidal currents; typical values.



n = number of cycles at $f = 50$ Hz

Fig 4. Maximum permissible non-repetitive peak on-state current as a function of number of cycles for sinusoidal currents; typical values.

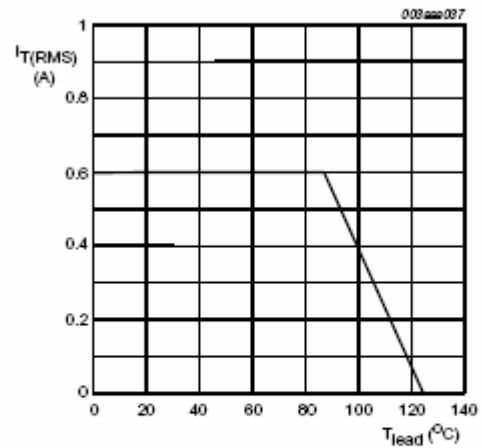
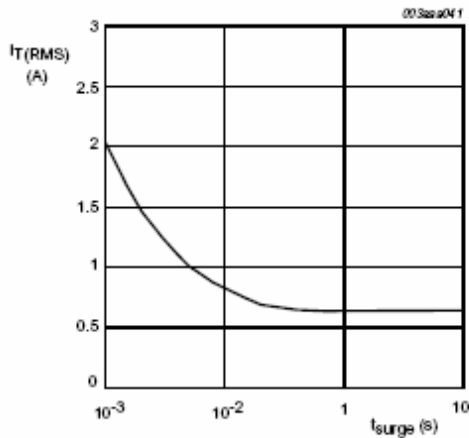
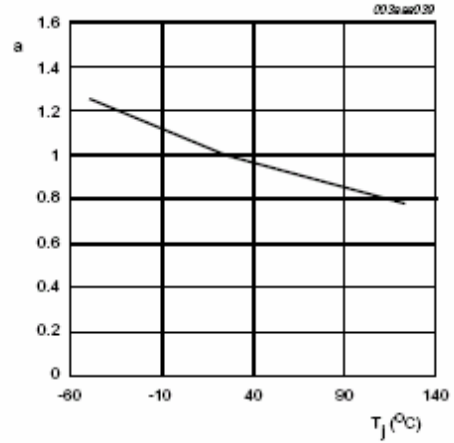


Fig 5. Maximum permissible RMS current as a function of lead temperature; typical values.



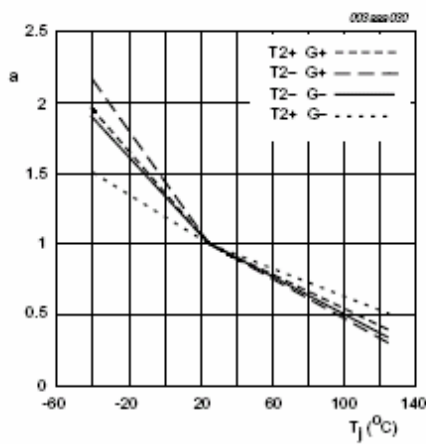
f = 50 Hz; $T_{lead} \leq 50^\circ\text{C}$

Fig 6. Maximum permissible repetitive RMS on-state current as a function of surge duration for sinusoidal currents; typical values.



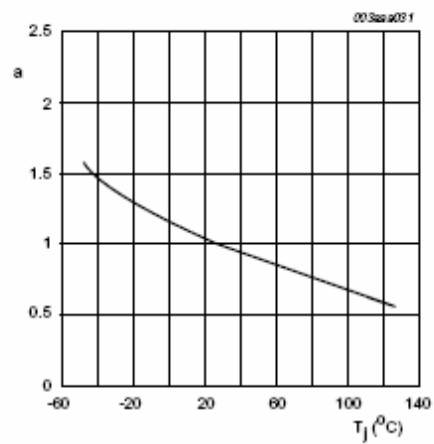
$$a = \frac{V_{GT(T_j)}}{V_{GT(25^\circ\text{C})}}$$

Fig 7. Normalized gate trigger voltage as a function of junction temperature; typical values.



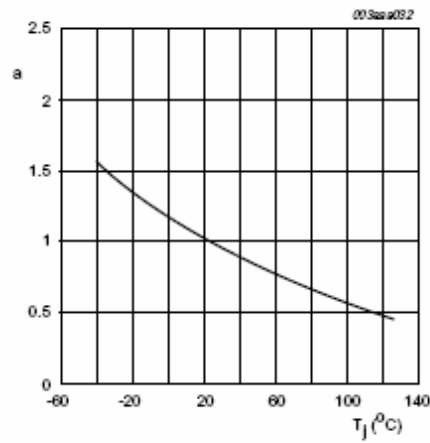
$$a = \frac{I_{GT(T_j)}}{I_{GT(25^\circ\text{C})}}$$

Fig 8. Normalized gate trigger current as a function of junction temperature; typical values.



$$a = \frac{I_L(T_j)}{I_L(25^\circ\text{C})}$$

Fig 9. Normalized latching current as a function of junction temperature; typical values.



$$a = \frac{I_{H(T_j)}}{I_{H(25^\circ\text{C})}}$$

Fig 10. Normalized holding current as a function of junction temperature; typical values.

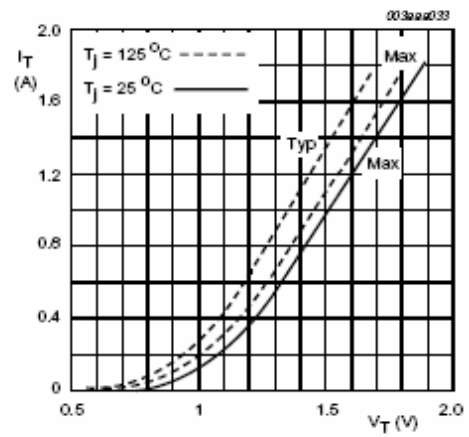


Fig 11. On-state current as a function of on-state voltage; typical and maximum values.

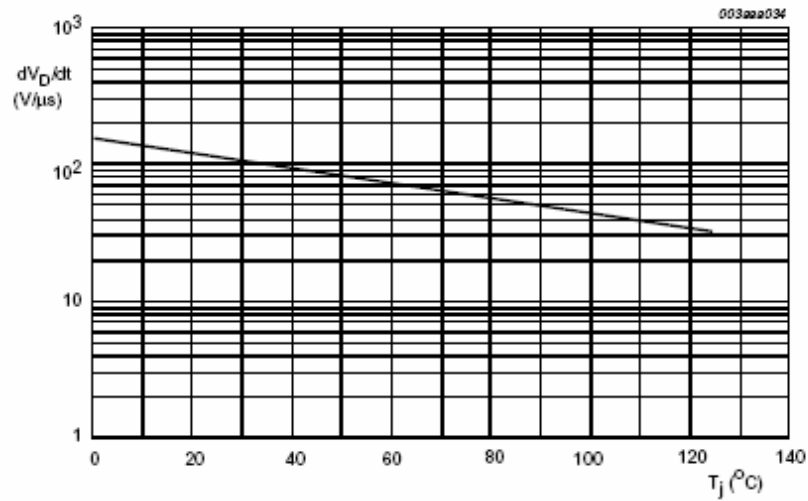


Fig 12. Critical rate of rise of off-state voltage as a function of junction temperature; typical values.