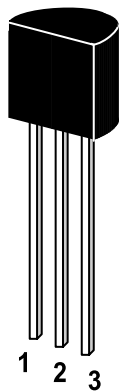
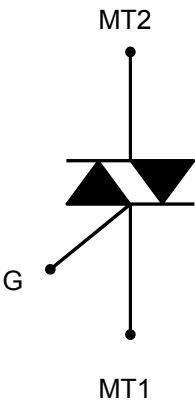


MAC97...

Silicon Bidirectional Triode Thyristors



1.MT1 2.G 3. MT2

TO-92 Plastic Package

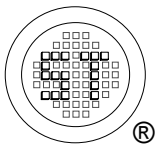
Weight approx. 0.19g

Absolute Maximum Ratings ($T_J = 25^\circ\text{C}$ unless otherwise noted.)

Parameter	Symbol	Value	Unit
Peak Repetitive Off-state Voltage(Gate Open, $T_J = -40$ to 110°C) ¹⁾ 1/2 Sine Wave 50 to 60 Hz, Gate Open MAC97-4, MAC97A4 MAC97-6, MAC97A6 MAC97-8, MAC97A8	V_{DRM}	200 400 600	V
On-State RMS Current Full Cycle Sine Wave 50 to 60 Hz ($T_C = 50^\circ\text{C}$)	$I_{\text{T(RMS)}}$	0.8	A
Peak Non-repetitive Surge Current (One Full Cycle, 60 Hz, $T_a = 110^\circ\text{C}$)	I_{TSM}	8	A
Circuit Fusing Considerations $T_J = -40$ to 110°C ($t = 8.3$ ms)	I^2t	0.26	A^2s
Peak Gate Voltage ($t \leq 2 \mu\text{s}$)	V_{GM}	5	V
Peak Gate Power ($t \leq 2 \mu\text{s}$)	P_{GM}	5	W
Average Gate Power ($T_C = 80^\circ\text{C}$, $t \leq 8.3$ ms)	$P_{\text{G(AV)}}$	0.1	W
Peak Gate Current ($t \leq 2 \mu\text{s}$)	I_{GM}	1	A
Operating Junction Temperature Range	T_J	-40 to 110	$^\circ\text{C}$
Storage Temperature Range	T_S	-40 to 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance, Junction to Case	$R_{\theta\text{JC}}$	75	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient	$R_{\theta\text{JA}}$	200	$^\circ\text{C/W}$



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ISO/TS 16949 : 2002 Certificate No. 05103 ISO 14001:2004 Certificate No. 7116 ISO 9001:2000 Certificate No. 0506098

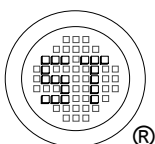
Dated : 03/03/2006

MAC97...

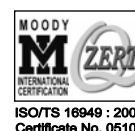
Characteristics ($T_C = 25^\circ\text{C}$, and Either Polarity of MT2 to MT1 Voltage unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Peak Blocking Current ¹⁾ $V_D = \text{Rated } V_{\text{DRM}}, T_J = 110^\circ\text{C}, \text{ Gate Open}$	I_{RRM}			0.1	mA
Peak On-State Voltage (Either Direction) ($I_{\text{TM}} = 1.1 \text{ A Peak; Pulse Width} \leq 2 \text{ ms, Duty Cycle} \leq 2 \%$)	V_{TM}			1.65	V
Gate Trigger Current (Continuous dc) ($V_D = 12 \text{ V}, R_L = 100 \text{ Ohms}$) MT2(+), G(+) MT2(+), G(-) MT2(-), G(-) MT2(-), G(+) MAC97	I_{GT}			10 10 10 10	mA
MT2(+), G(+) MT2(+), G(-) MT2(-), G(-) MT2(-), G(+) MAC97A				5 5 5 7	
Gate Trigger Voltage (Continuous dc) ($V_D = 12 \text{ V}, R_L = 100 \text{ Ohms}$) MT2(+), G(+) MT2(+), G(-) MT2(-), G(-) MT2(-), G(+) ($V_D = \text{Rated } V_{\text{DRM}}, R_L = 10 \text{ KOhms}, T_J = 110^\circ\text{C}$) MT2(+), G(+); MT2(-), G(-); MT2(+), G(-) MT2(-), G(+) All Types	V_{GT}	0.1 0.1		2 2 2 2.5	V
Holding Current ($V_D = 12 \text{ Vdc}, I_{\text{TM}} = 200 \text{ mA}, \text{ Gate Open}$)	I_{H}			5	mA
Gate Controlled Turn-On Time ($V_D = \text{Rated } V_{\text{DRM}}, I_{\text{TM}} = 1 \text{ Apk}, I_{\text{G}} = 25 \text{ mA}$)	t_{gt}		2		μs
Critical Rate-of-Rise of Commutation Voltage ($f = 250 \text{ Hz}, I_{\text{TM}} = 1 \text{ A}, \text{ Commutating } di/dt = 1.5 \text{ A/ms}, \text{ On-State Current Duration} = 2 \text{ ms}, V_{\text{DRM}} = 200 \text{ V}, \text{ Gate Unenergized}, T_C = 110^\circ\text{C}, \text{ Gate Source Resistance} = 150 \text{ Ohms}$)	dv/dt_c	1.5			V/ μs
Critical Rate-of-Rise of Off Sate Voltage ($V_{\text{pk}} = \text{Rated } V_{\text{DRM}}, T_C = 110^\circ\text{C}, \text{ Gate Open, Exponential Method}$)	dv/dt	10			V/ μs

¹⁾ V_{DRM} for all types can be applied on a continuous basis. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.



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