

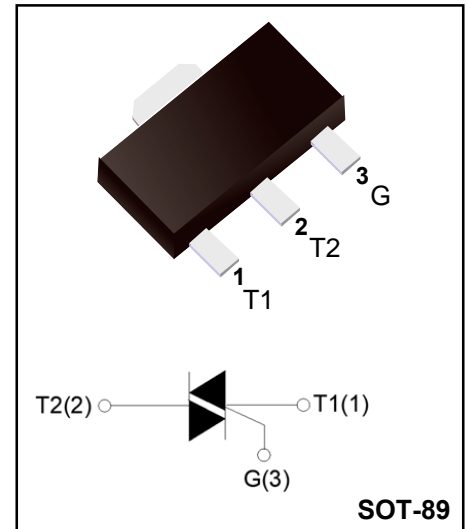
**0.8A 4Quadrants TRIACs**

**Product Summary**

Symbol	Value	Unit
$I_{T(RMS)}$	0.8	A
$V_{DRM} V_{RRM}$	800	V
$V_{TM}$	1.9	V

**General Description**

Glass passivated triacs in a plastic envelope suitable for surface mounting, intended for use in applications requiring high bidirectional transient and blocking voltage capability and high thermal cycling performance. Typical applications include motor control, industrial and domestic lighting, heating and static switching.



Marking Code	
MAC97A8SI	97A8

**Absolute Maximum Ratings (T<sub>j</sub>=25°C)**

Limiting values in accordance with the Absolute Maximum System

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	$V_{DRM}$	800	V
Repetitive peak reverse voltage	$V_{RRM}$	800	V
RMS on-state current	$I_{T(RMS)}$	0.8	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	$I_{TSM}$	8	A
$I^2t$ value for fusing (tp=10ms)	$I^2t$	0.26	A <sup>2</sup> s
Critical rate of rise of on-state current ( $I_{TM} = 1.5A$ ; $I_G = 0.2A$ ; $dI_G/dt = 0.2 A/us$ )	$dI/dt$	T2+ G+	50
		T2+ G-	50
		T2- G-	50
		T2- G+	10
Peak gate current	$I_{GM}$	2	A
Average gate power dissipation	$P_{G(AV)}$	0.5	W
Junction Temperature	$T_J$	125	°C
Storage Temperature	$T_{STG}$	-40 ~ +150	°C

**Electrical Characteristics(T<sub>A</sub>=25°C)**

Parameter	Symbol	Test Condition	Value			Unit	
			Min	Typ	Max		
Gate trigger current	I <sub>GT</sub>	V <sub>D</sub> = 12V I <sub>T</sub> = 0.1A T <sub>j</sub> = 25°C	T2+ G+			5	mA
			T2+ G-			5	
			T2- G-			5	
			T2- G+			10	
Gate trigger voltage	V <sub>GT</sub>	V <sub>D</sub> = 12 V; I <sub>T</sub> = 0.1A			2.0	V	
		V <sub>D</sub> = V <sub>DRM</sub> ; I <sub>T</sub> = 0.1A; T <sub>j</sub> = 110°C	0.1			V	
Gate non-trigger voltage	V <sub>GD</sub>	V <sub>D</sub> = V <sub>DRM</sub> T <sub>j</sub> = 125°C			0.2	V	
latching current	I <sub>L</sub>	V <sub>D</sub> = 12V I <sub>GT</sub> = 0.1A	T2+ G+			10	mA
			T2+ G-			10	
			T2- G-			10	
			T2- G+			15	
Holding current	I <sub>H</sub>	V <sub>D</sub> = 12V, I <sub>GT</sub> = 0.1A			10	mA	
Critical-rate of rise of commutation voltage	dV/dt	V <sub>DM</sub> = 67% V <sub>DRM</sub> (max); T <sub>C</sub> = 110°C	30			V/μs	

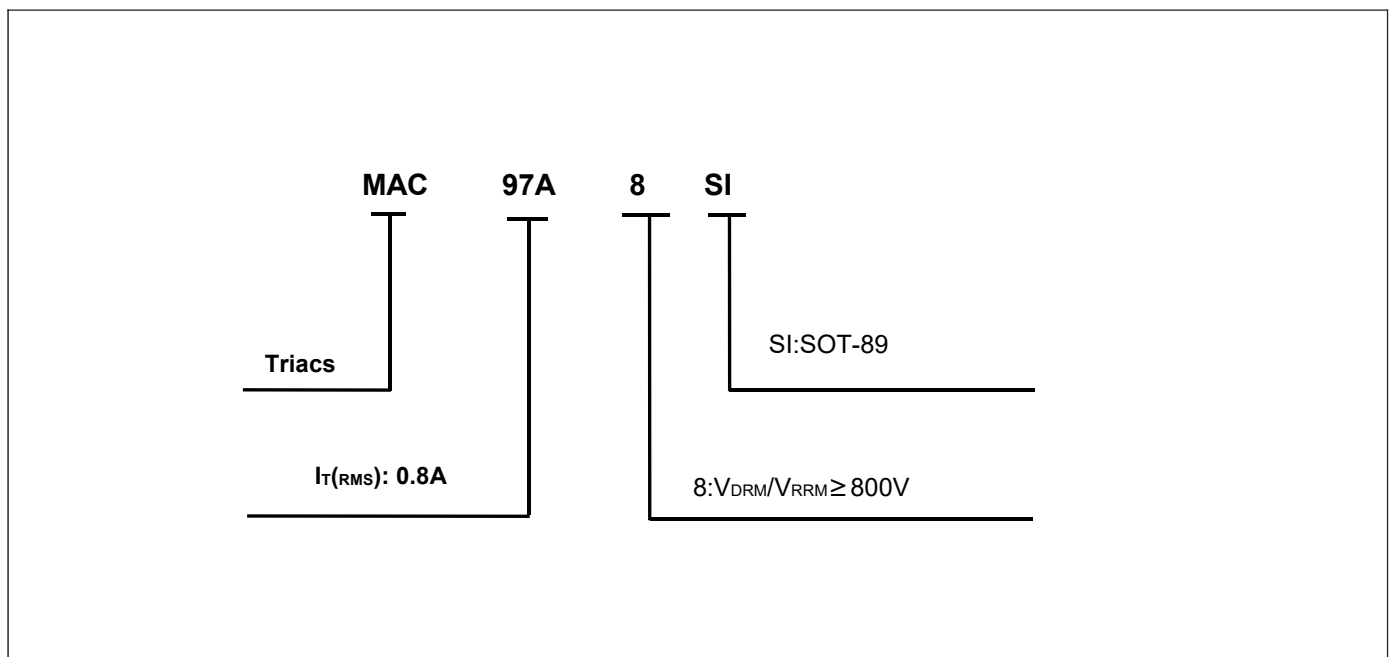
**STATIC CHARACTERISTICS**

On-state Voltage	V <sub>TM</sub>	I <sub>T</sub> = 1.2A			1.9	V
Repetitive Peak Off-State Current	I <sub>DRM</sub>	V <sub>D</sub> = V <sub>DRM</sub> V <sub>R</sub> = V <sub>RDM</sub>	T <sub>j</sub> = 25°C		20	μA
Repetitive Peak Reverse Current	I <sub>RRM</sub>		T <sub>j</sub> = 125°C		100	μA

**THERMAL RESISTANCES**

Thermal resistance	R <sub>th(j-c)</sub>	Junction to case(AC)	TYP.	75	°C/W
	R <sub>th(j-a)</sub>	Junction to ambient	TYP.	200	°C/W

**Ordering Information**



Typical Characteristic Curves

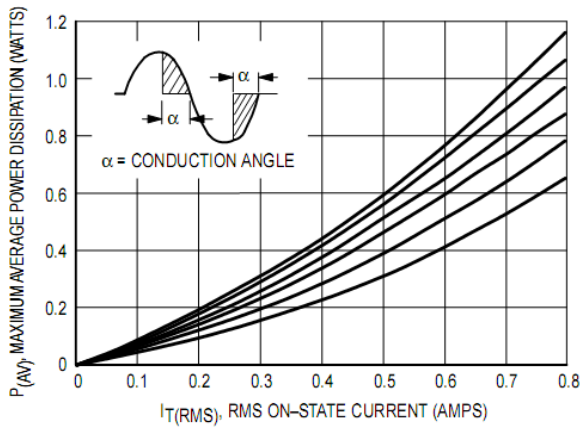


Figure 1. RMS Current Derating

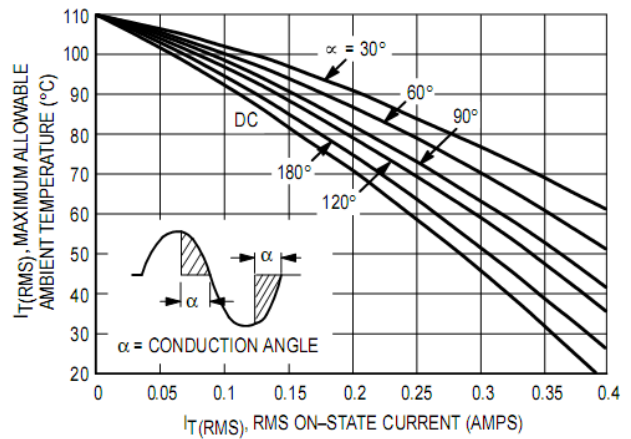


Figure 2. RMS Current Derating

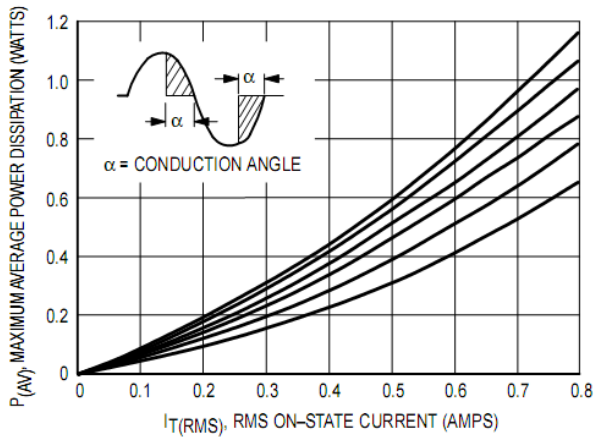


Figure 3. Power Dissipation

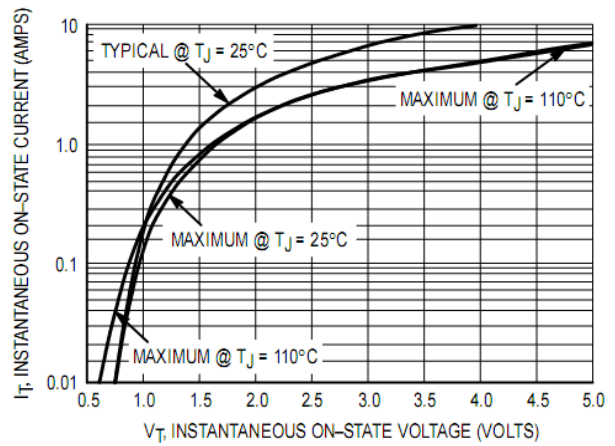


Figure 4. On-State Characteristics

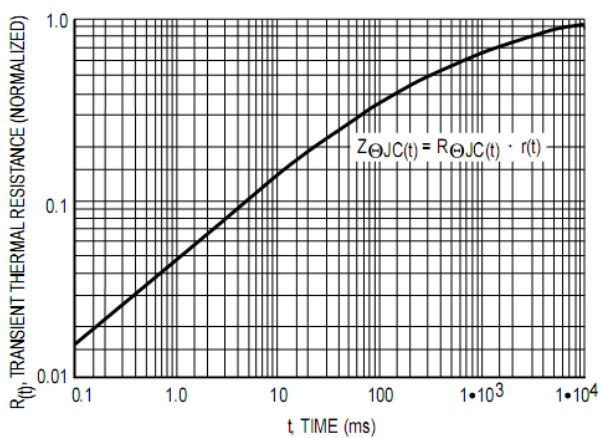


Figure 5. Transient Thermal Response

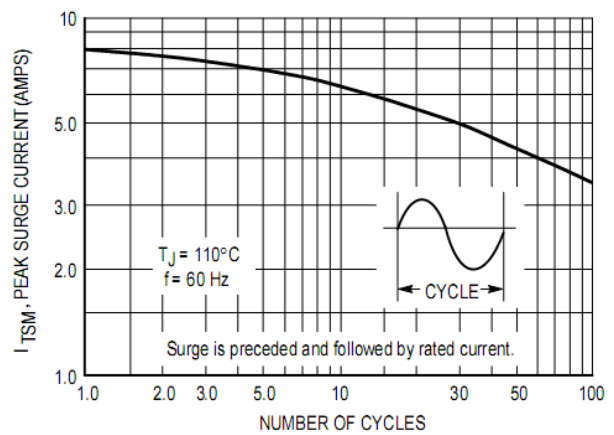
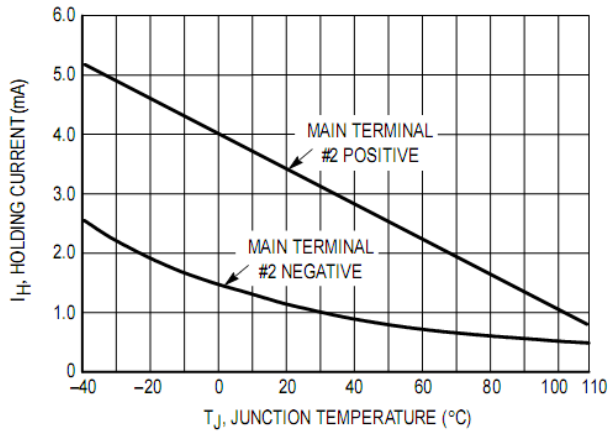
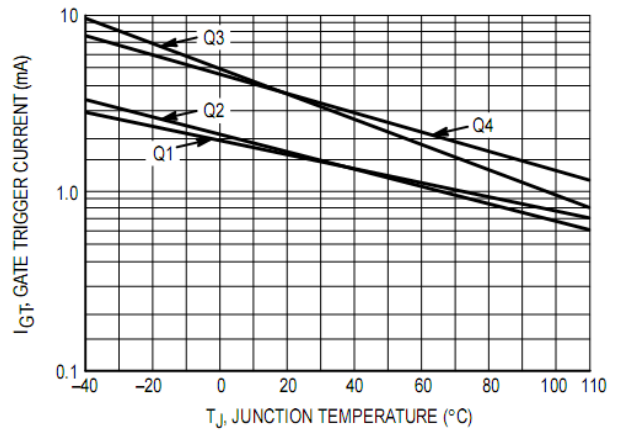


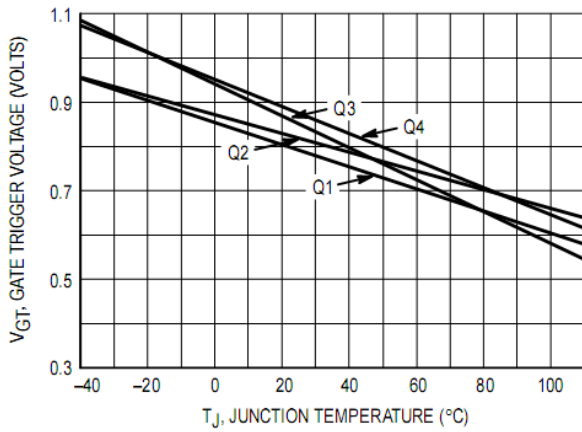
Figure 6. Maximum Allowable Surge Current



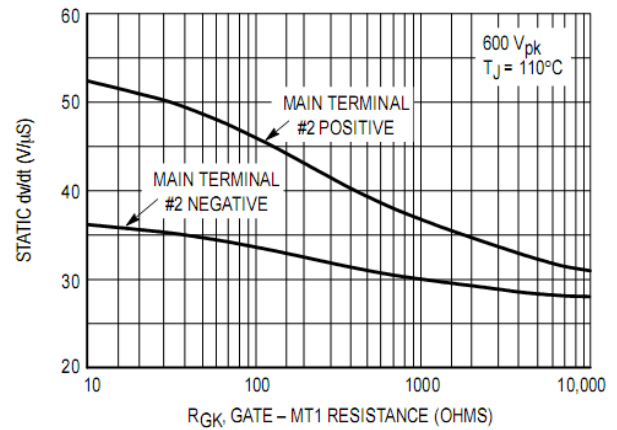
**Figure 7. Typical Holding Current Variation**



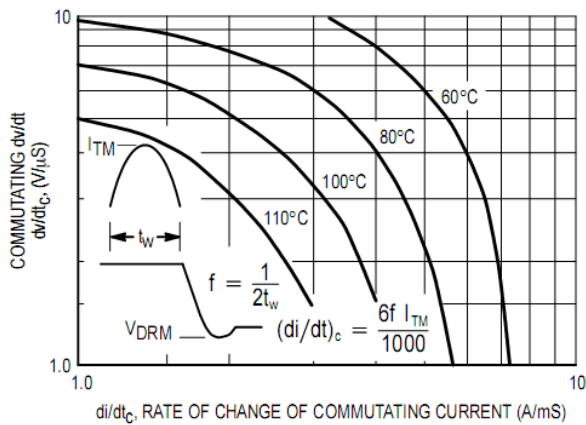
**Figure 8. Typical Gate Trigger Current**



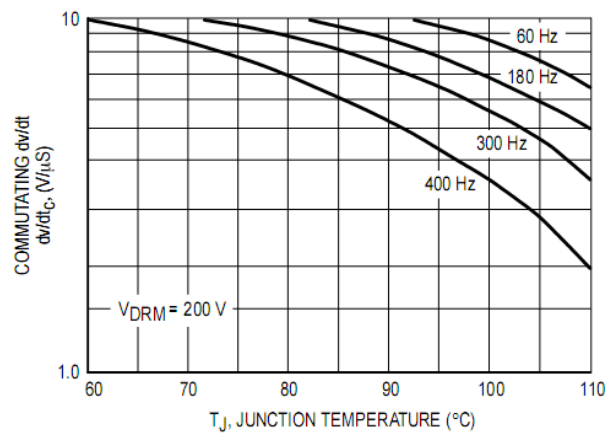
**Figure 9. Gate Trigger Voltage Variation**



**Figure 10. Exponential Static dv/dt versus Gate-T1 Resistance**



**Figure 11. Typical Commutating dv/dt versus Current Crossing Rate and Junction Temperature**



**Figure 12. Typical Commutating dv/dt versus Junction Temperature at 0.8 Amps RMS**

**Ordering information**

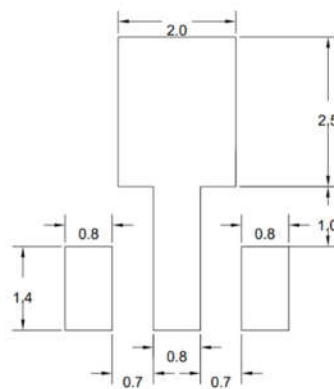
Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel,7"reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

**Package Dimensions**

**SOT-89**

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

**The recommended mounting pad size**



UNIT:MM

## Disclaimer

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