



Features

- Blocking voltage to 600 V
- RMS on-state current to 0.8 A
- General purpose bidirectional switching

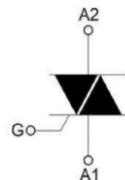
1. ANODE
2. ANODE
3. GATE



SOT-89

Package Marking and Ordering Information

Product ID	Pack	Packing Method	Qty(PCS)
MAC97A6	SOT-89	Tape and Reel	3000



Maximum Ratings (Ta=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Value	Unit
V_{DRM} / V_{RRM}	repetitive peak off-state voltage		600	V
$I_{T(RMS)}$	RMS on-state current		0.8	A
I_{TSM}	Non repetitive surge peak on-state current	$t = 20\text{ms}$ $T_j = 25^\circ\text{C}$	8	A
		$t = 16.7\text{ms}$ $T_j = 25^\circ\text{C}$	6	
$I^2 t$	$I^2 t$ for fusing	$t = 10\text{ ms}$	0.5	A^2s
dI/dt	Critical-rate of rise of commutation current	$I_G = 2I_{GT}t_r \leq 100\text{ns}$ $F = 120\text{Hz}$	50 10	$\text{A}/\mu\text{s}$
I_{GM}	Peak Gate Current	$T_j = 125^\circ\text{C}$ $t_p = 20\mu\text{s}$	0.3	A
V_{GM}	Peak gate voltage	$T_j = 125^\circ\text{C}$	1	V
P_{GM}	Peak gate power	$T_j = 125^\circ\text{C}$	0.6	W
$P_{G(AV)}$	Average Gate Power Dissipation	$T_j = 125^\circ\text{C}$	0.3	W
T_j	Junction Temperature	-	-40 ~ 125	$^\circ\text{C}$
T_{stg}	Storage Temperature	-	-40 ~ 150	$^\circ\text{C}$

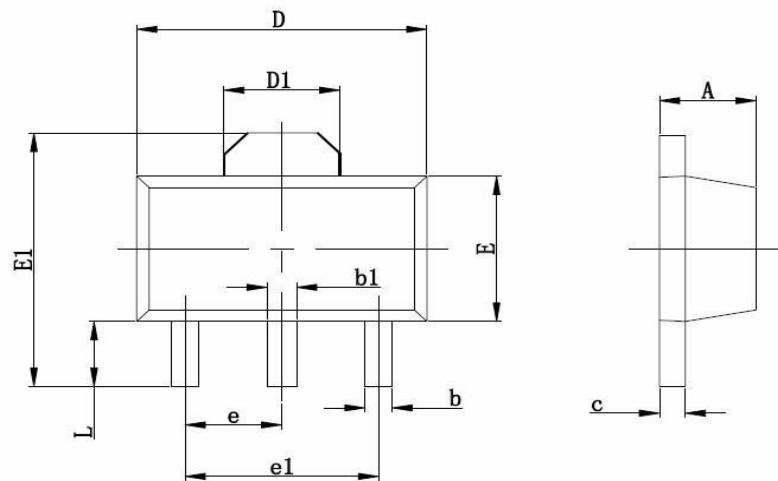


Electrical Characteristics (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions		Min	Typ	Max	Unit	
Repetitive Peak Off-State Current Repetitive Peak Reverse Current	I_{DRM}, I_{RRM}	$V_{DRM} = V_{RRM}$	$T_j = 25^\circ C$			5	μA	
		$V_{DRM} = V_{RRM}$	$T_j = 125^\circ C$			1	mA	
Gate non-trigger voltage		V_{GD}		$V_D = 1/2 V_{DRM}$	0.2		V	
On-state voltage		V_{TM}		$I_T = 0.8 A, t_p = 380 \mu s$		1.65	V	
Gate trigger current	I	I_{GT}	$T_2(+), G(+)$	$V_D = 12V$ $R_L = 100\Omega$		5	mA	
	II		$T_2(+), G(-)$			5		
	III		$T_2(-), G(-)$			5		
	IV		$T_2(-), G(+)$			-		
Gate trigger voltage	I	V_{GT}	$T_2(+), G(+)$	$V_D = 12V$ $R_L = 100\Omega$		0.8	V	
	II		$T_2(+), G(-)$			0.8		
	III		$T_2(-), G(-)$			0.8		
	IV		$T_2(-), G(+)$			0.8		
Holding current		I_H	$V_D = 12V, I_{GT} = 100mA$			30	mA	
Critical-rate of rise of commutation voltage		dV/dt	$V_{DM} = 67\% V_{DRM}$ Gate open $T_j = 125^\circ C$			50	V/us	
Rate of change of commutating voltage		$(dI/dt)_c$	$V_{DM} = 600V$ $T_j = 125^\circ C$ $(dI/dt)_c = 5.4A/ms$ Gate open			20	V/us	
Turn-on time		t_{gt}	$I_{TM} = 16A, V_{DM} = V_{DRM(MAX)}$ $I_G = 0.1A, dI_G/dt = 5A \mu s$			2	us	



SOT-89 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047



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