



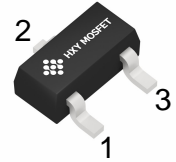
Features

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

1. ANODE

2. ANODE

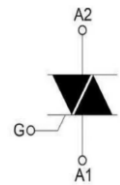
3. GATE



SOT-23

Package Marking and Ordering Information

Product ID	Pack	Packing Method	Qty(PCS)
MAC97A6	SOT-23	Tape & 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	$t = 20ms \ T_j = 25^\circ C$	8	A
		$t = 16.7ms \ T_j = 25^\circ C$	6	
$I^2 t$	$I^2 t$ for fusing	$t = 10 \ ms$	0.5	$A^2 s$
di/dt	Critical-rate of rise of commutation current	I II III IV $I_G = 2I_{GT} \leq 100ns$ $F = 120Hz$	50 10	A/us
I_{GM}	Peak Gate Current	$T_j = 125^\circ C \ t_p = 20\mu s$	0.3	A
V_{GM}	Peak gate voltage	$T_j = 125^\circ C$	1	V
P_{GM}	Peak gate power	$T_j = 125^\circ C$	0.6	W
$P_{G(AV)}$	Average Gate Power Dissipation	$T_j = 125^\circ C$	0.3	W
T_j	Junction Temperature	-	-40 ~ 125	°C
T_{stg}	Storage Temperature	-	-40 ~ 150	°C

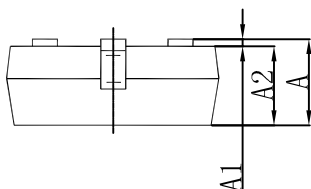
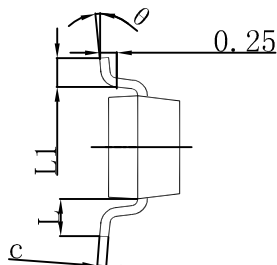


Electrical Characteristics (Ta=25°C unless otherwise specified)

Parameter		Symbol	Test conditions		Min	Typ	Max	Unit
Repetitive Peak Off-State Current Repetitive Peak Reverse Current		$I_{\text{DRM}}, I_{\text{RRM}}$	$V_{\text{DRM}} = V_{\text{RRM}} \quad T_{\text{J}} = 25^{\circ}\text{C}$				5	μA
			$V_{\text{DRM}} = V_{\text{RRM}} \quad T_{\text{J}} = 125^{\circ}\text{C}$				1	mA
Gate non-trigger voltage		V_{GD}	$V_{\text{D}} = 1/2 V_{\text{DRM}}$		0.2			V
On-state voltage		V_{TM}	$I_{\text{T}} = 0.8\text{A}, t_{\text{p}} = 380\mu\text{s}$				1.65	V
Gate trigger current	I	I_{GT}	$T_2(+), \text{G}(+)$	$V_{\text{D}} = 12\text{V}$ $R_{\text{L}} = 100\Omega$			5	mA
	II		$T_2(+), \text{G}(-)$				5	
	III		$T_2(-), \text{G}(-)$				5	
	IV		$T_2(-), \text{G}(+)$				-	
Gate trigger voltage	I	V_{GT}	$T_2(+), \text{G}(+)$	$V_{\text{D}} = 12\text{V}$ $R_{\text{L}} = 100\Omega$		0.8	2	V
	II		$T_2(+), \text{G}(-)$			0.8	2	
	III		$T_2(-), \text{G}(-)$			0.8	2	
	IV		$T_2(-), \text{G}(+)$			0.8	2.5	
Holding current		I_{H}	$V_{\text{D}} = 12\text{V}, I_{\text{GT}} = 100\text{mA}$				30	mA
Critical-rate of rise of commutation voltage		dV/dt	$V_{\text{DM}} = 67\% V_{\text{DRM}}$ Gate open $T_{\text{J}} = 125^{\circ}\text{C}$				50	V/us
Rate of change of commutating voltage		(dI/dt) _c	$V_{\text{DM}} = 400\text{V} \quad T_{\text{J}} = 125^{\circ}\text{C}$ (dI/dt) _c = 5.4A/ms Gate open				20	V/us
Turn-on time		t_{gt}	$I_{\text{TM}} = 16\text{A}, V_{\text{DM}} = V_{\text{DRM(MAX)}}$ $I_{\text{G}} = 0.1\text{A}, dI_{\text{G}}/dt = 5\text{A } \mu\text{S}$				2	us



SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.



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