



ESD



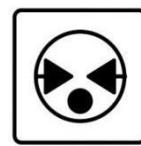
TVS



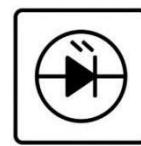
TSS



MOV



GDT



PLED

## MMBTA94

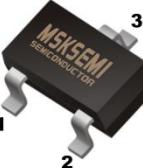
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### Product specification

**TRANSISTOR (PNP)**
**FEATURES**

- High Breakdown Voltage

**Reference News**

PACKAGE OUTLINE	MARKING
	1. BASE 2. Emitter 3. COLLECTOR <b>4D</b>
SOT-23	

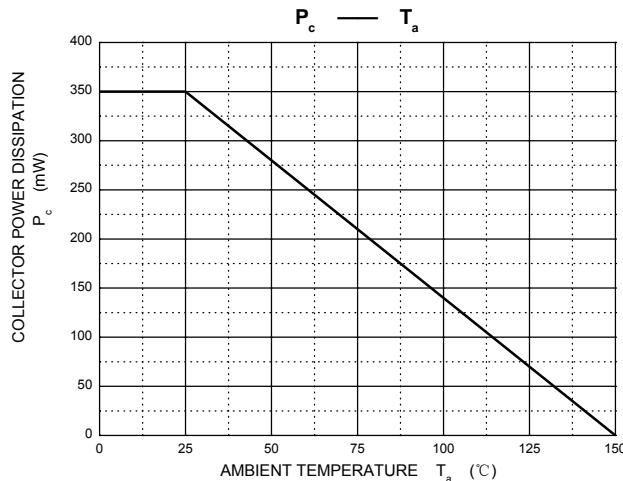
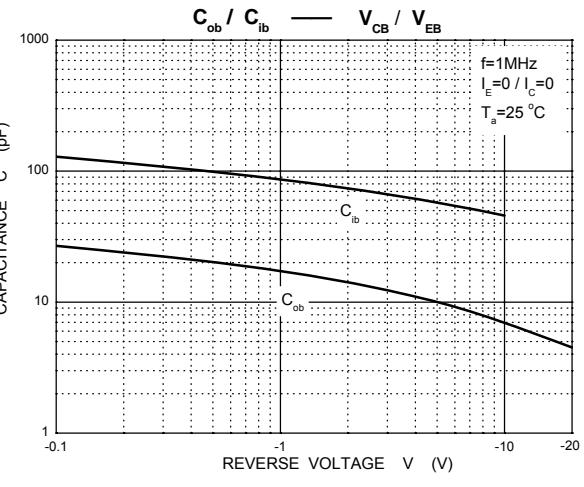
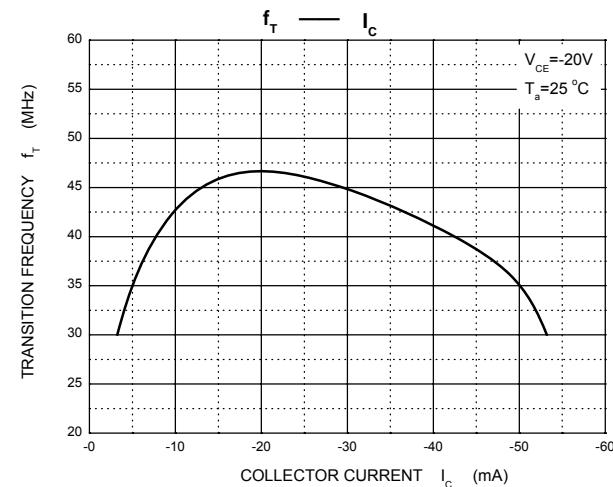
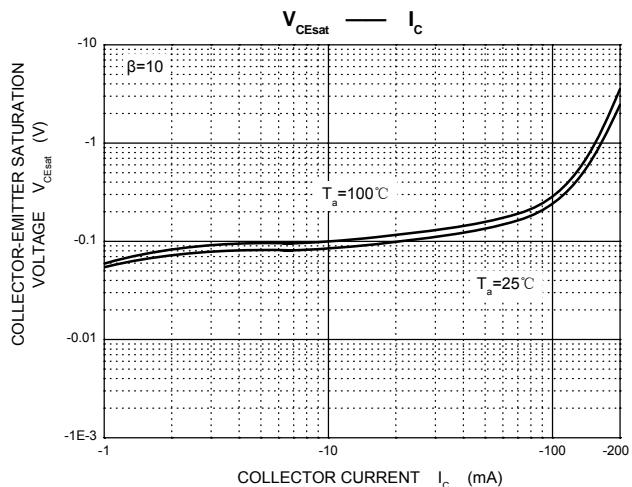
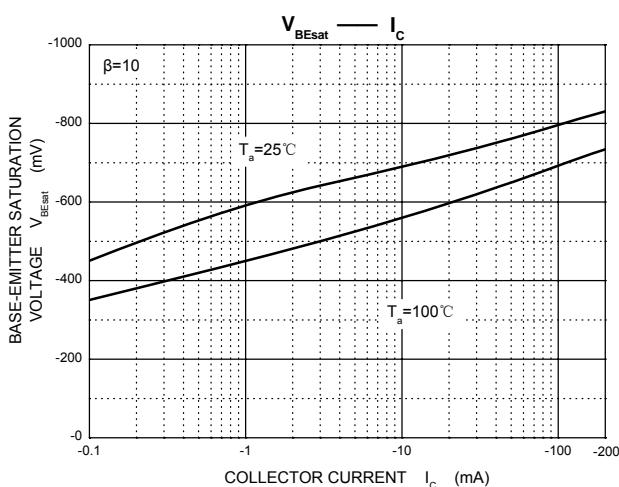
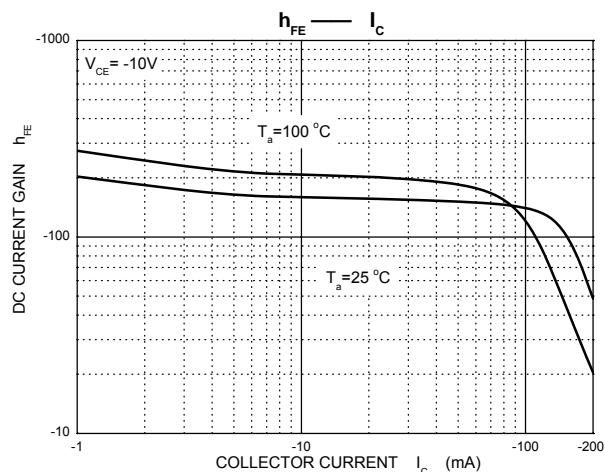
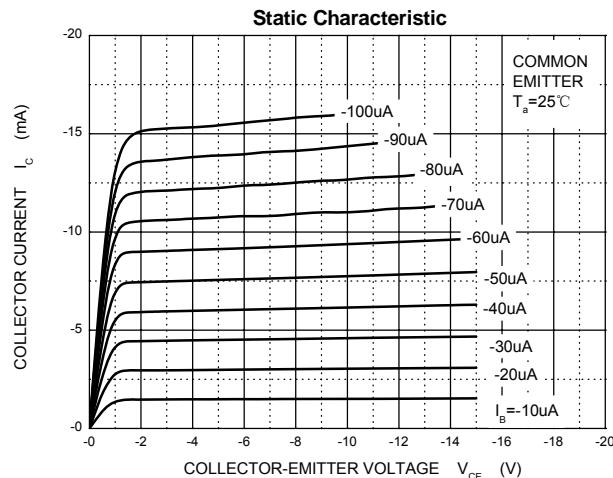
**MAXIMUM RATINGS (Ta=25°C unless otherwise noted)**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	-400	V
$V_{CEO}$	Collector-Emitter Voltage	-400	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_c$	Collector Current -Continuous	-200	mA
$I_{CM}$	Collector Current -Pulsed	-300	mA
$P_c$	Collector Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	357	°C/W
$T_j$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature	-55 ~ +150	°C

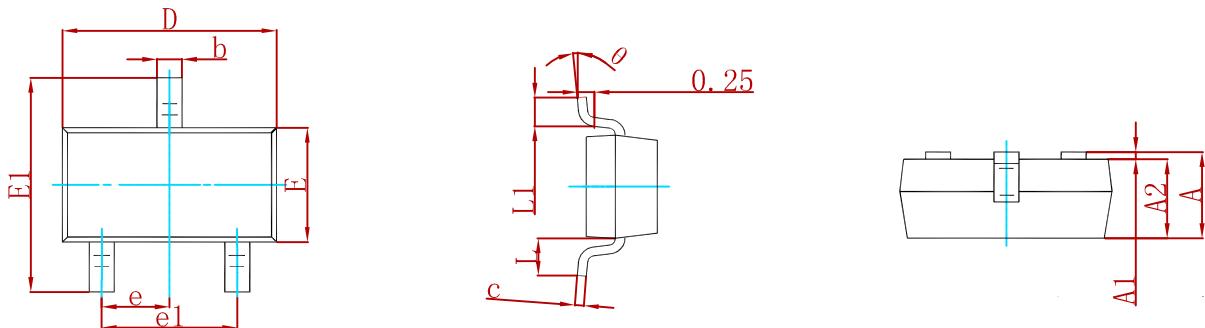
**ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
<b>Collector-base breakdown voltage</b>	$V_{(BR)CBO}$	$I_c=-100\mu A, I_E=0$	-400			V
<b>Collector-emitter breakdown voltage</b>	$V_{(BR)CEO}$	$I_c=-1mA, I_B=0$	-400			V
<b>Emitter-base breakdown voltage</b>	$V_{(BR)EBO}$	$I_E=-100\mu A, I_C=0$	-5			V
<b>Collector cut-off current</b>	$I_{CBO}$	$V_{CB}=-400V, I_E=0$			-0.1	μA
<b>Collector cut-off current</b>	$I_{CEO}$	$V_{CE}=-400V, I_B=0$			-5	μA
<b>Emitter cut-off current</b>	$I_{EBO}$	$V_{EB}=-4V, I_C=0$			-0.1	μA
<b>DC current gain</b>	$h_{FE(1)}$	$V_{CE}=-10V, I_c=-10mA$	80		300	
	$h_{FE(2)}$	$V_{CE}=-10V, I_c=-1mA$	70			
	$h_{FE(3)}$	$V_{CE}=-10V, I_c=-100mA$	40			
	$h_{FE(4)}$	$V_{CE}=-10V, I_c=-50mA$	40			
<b>Collector-emitter saturation voltage</b>	$V_{CE(sat)1}$	$I_c=-10mA, I_B=-1mA$			-0.2	V
	$V_{CE(sat)2}$	$I_c=-50mA, I_B=-5mA$			-0.3	V
<b>Base-emitter saturation voltage</b>	$V_{BE(sat)}$	$I_c=-10mA, I_B=-1mA$			-0.75	V
<b>Transition frequency</b>	$f_T$	$V_{CE}=-20V, I_c=-10mA, f=30MHz$	50			MHz

## Typical Characteristics

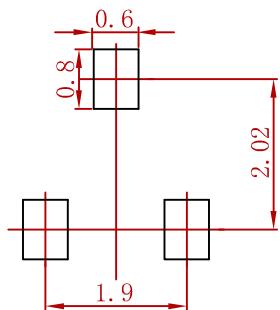


## PACKAGE MECHANICAL DATA



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
$\theta$	0°	8°	0°	8°

## Suggested Pad Layout



### Note:

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

## REEL SPECIFICATION

P/N	PKG	QTY
MMBTA94	SOT-23	3000

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