

SOT-23 Plastic-Encapsulate Transistors

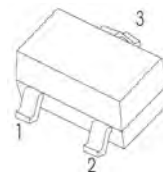
MMBTA94 TRANSISTOR (PNP)

FEATURES

- High Breakdown Voltage

MARKING:4D

SOT - 23



1. BASE
2. EMITTER
3. COLLECTOR

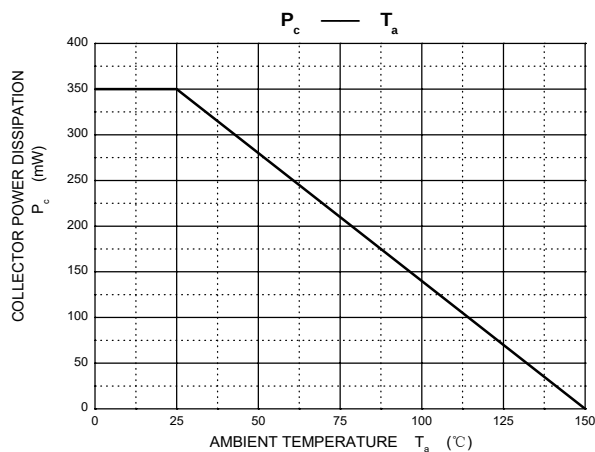
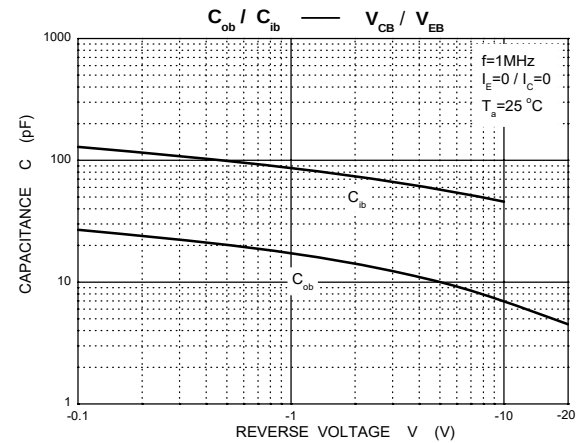
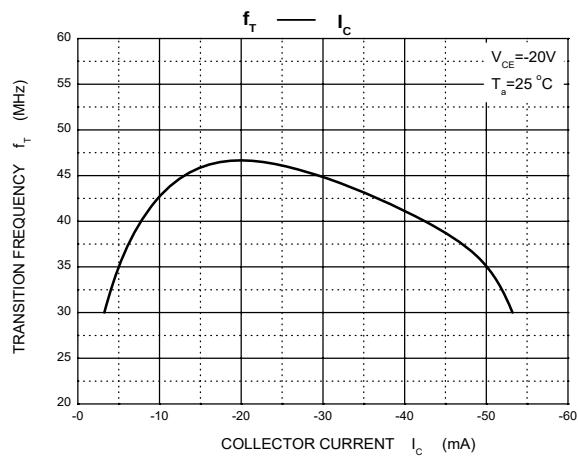
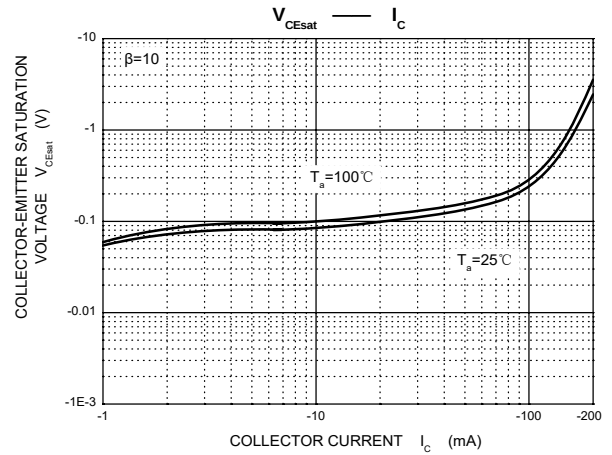
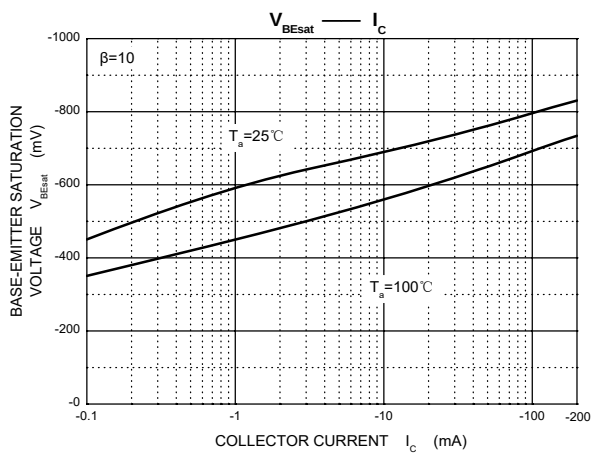
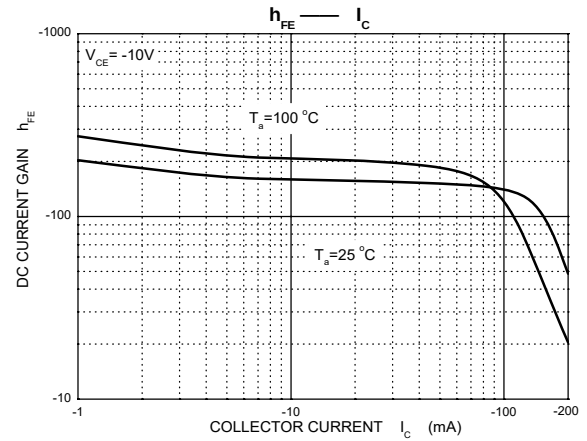
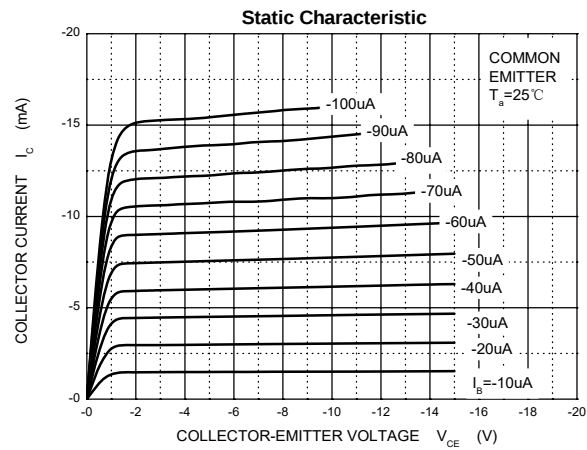
MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

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	$^{\circ}\text{C}/\text{W}$
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

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

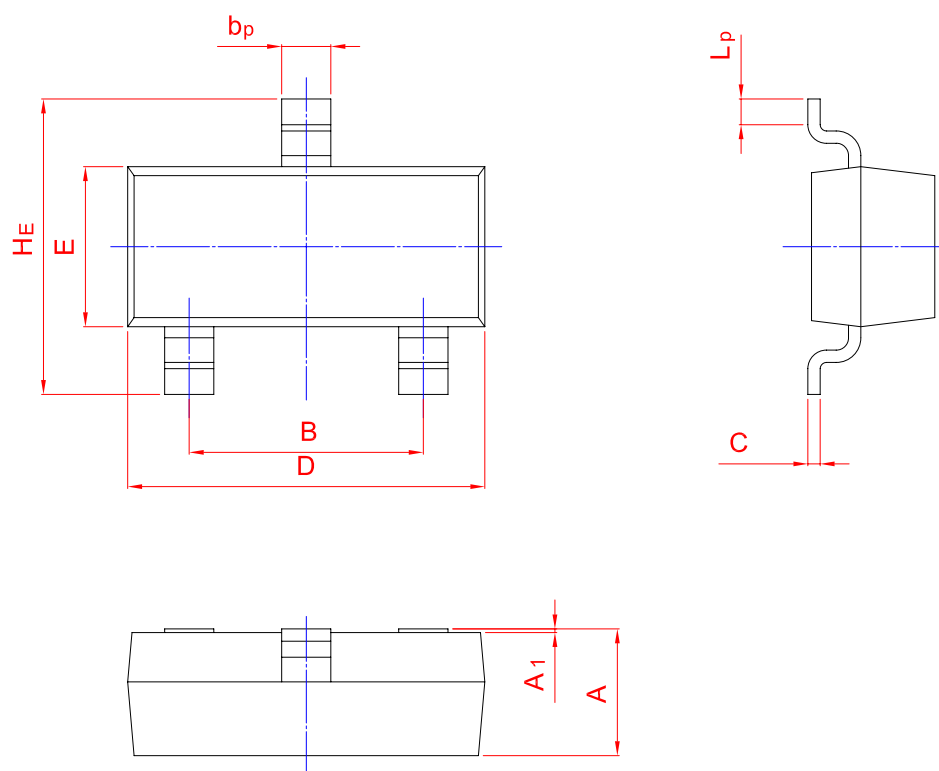
Typical Characteristics



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b_p	C	D	E	H_E	A_1	L_p
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20