

■ PNP Transistors



■ Simplified outline(SOT-23)

■ Features

- High Breakdown Voltage
- Complement to MMBTA44

■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V _{CB0}	-400	V
Collector - Emitter Voltage	V _{CEO}	-400	
Emitter - Base Voltage	V _{EBO}	-5	
Collector Current - Continuous	I _C	-200	mA
Collector Current -Pulsed	I _{CM}	-300	
Collector Power Dissipation	P _C	350	mW
Thermal Resistance From Junction To Ambient	R _{θJA}	150	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature range	T _{stg}	-55 to 150	

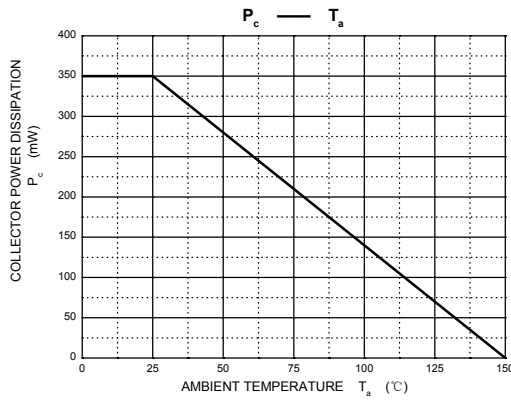
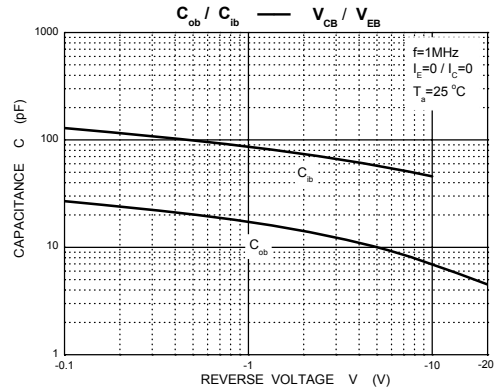
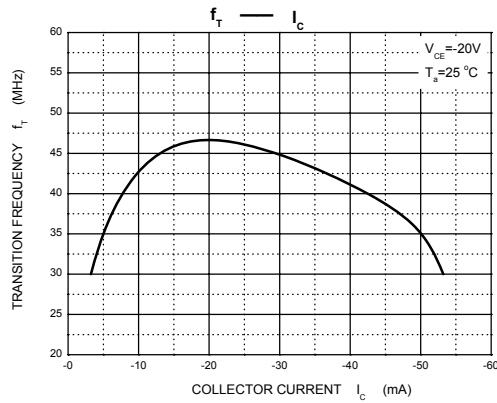
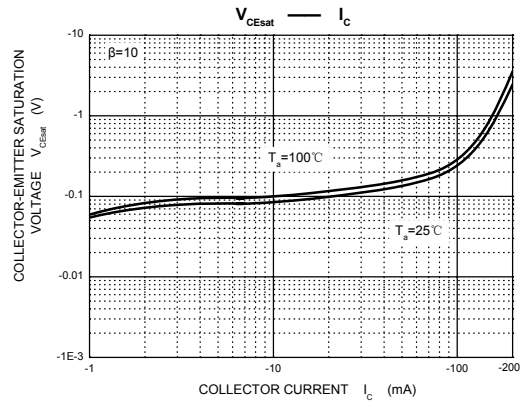
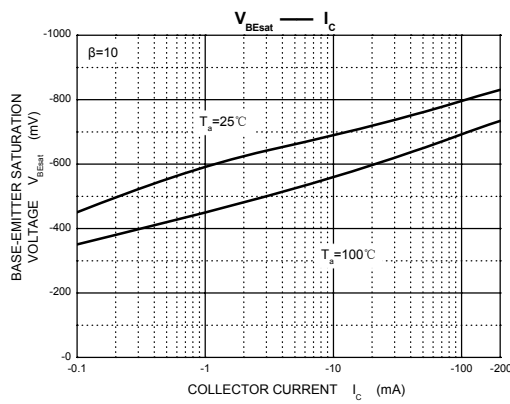
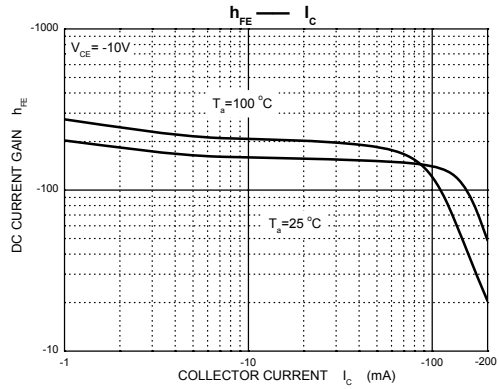
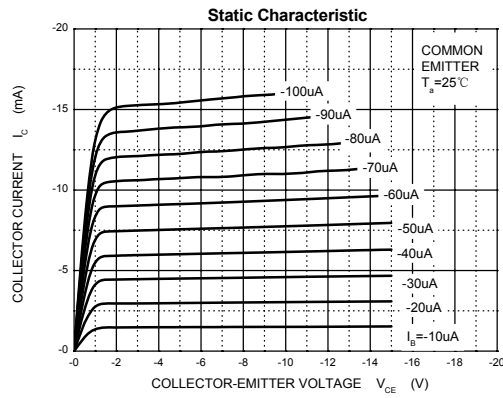
■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V _{CB0}	I _C = -100 μA, I _E =0	-400			V
Collector- emitter breakdown voltage	V _{CEO}	I _C = -1 mA, I _B =0	-400			
Emitter - base breakdown voltage	V _{EBO}	I _E = -100 μA, I _C =0	-5			
Collector-base cut-off current	I _{CB0}	V _{CB} = -400 V, I _E =0			-100	nA
Emitter cut-off current	I _{EBO}	V _{EB} = -4V, I _C =0			-100	
Collector-emitter saturation voltage	V _{CE(sat)1}	I _C =-10 mA, I _B =-1mA			-0.2	V
	V _{CE(sat)2}	I _C =-50 mA, I _B =-5mA			-0.3	
Base - emitter saturation voltage	V _{BE(sat)}	I _C = -10mA, I _B =- 1mA			-0.75	
DC current gain	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			
Transition frequency	f _T	V _{CE} = -20V, I _C = 10mA, f=30MHz	50			MHz

■ Classification of h_{FE(1)}

Type	MMBTA94	MMBTA94-L
Range	80-300	100-200
Marking	4D	

■ Typical Characteristics



Package Outline

SOT-23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SOT-23	Tape/Reel, 7" reel	3000	EIA-481-1