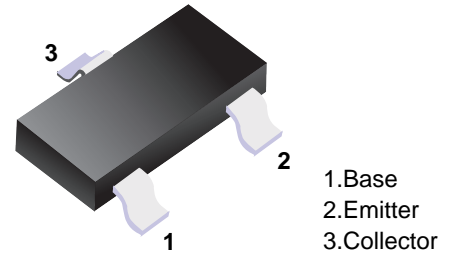


■ NPN Transistors



■ Features

- High Collector-Emitter Voltage
- Complement to MMBTA94

■ Simplified outline(SOT-23)

■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V <sub>CB0</sub>	400	V
Collector - Emitter Voltage	V <sub>CE0</sub>	400	
Emitter - Base Voltage	V <sub>EB0</sub>	6	
Collector Current - Continuous	I <sub>c</sub>	200	mA
Collector Current -Pulsed	I <sub>CM</sub>	300	
Collector Power Dissipation	P <sub>c</sub>	350	mW
Thermal Resistance From Junction To Ambient	R <sub>θJA</sub>	357	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to 150	

■ Electrical Characteristics Ta = 25°C

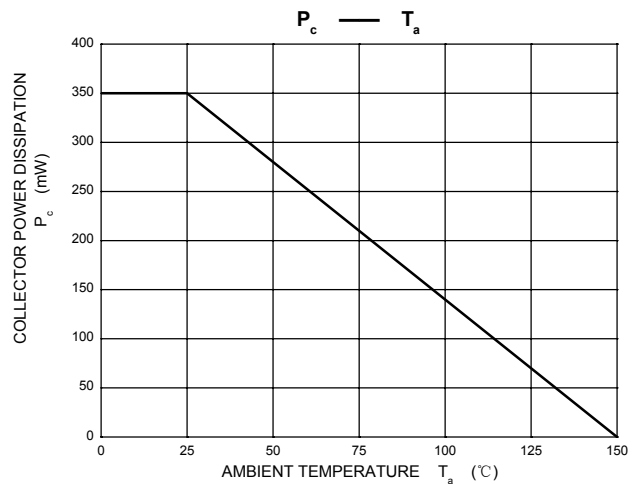
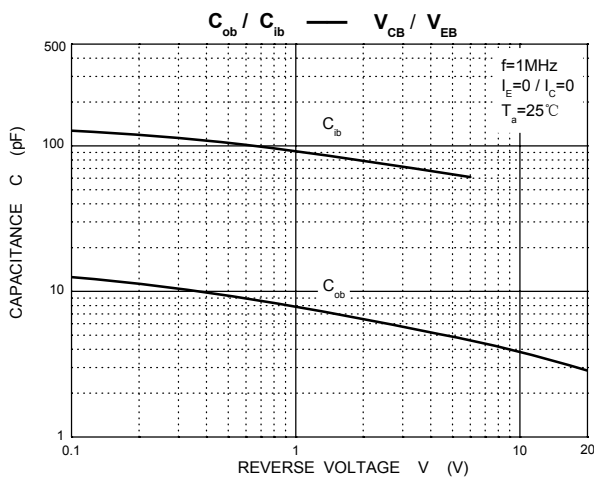
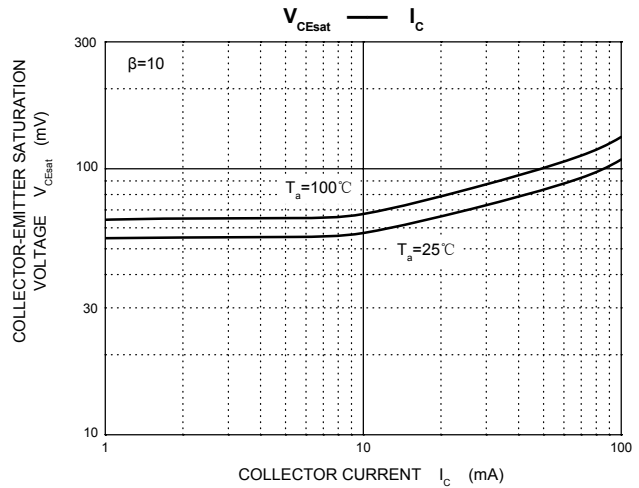
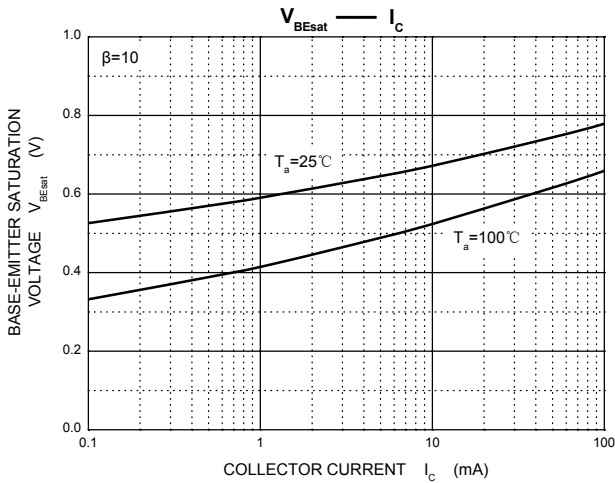
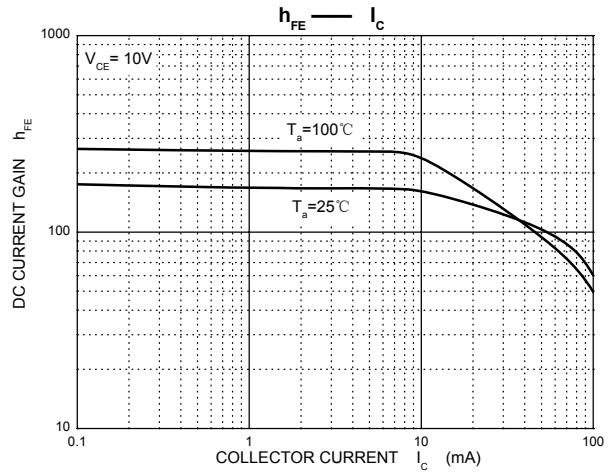
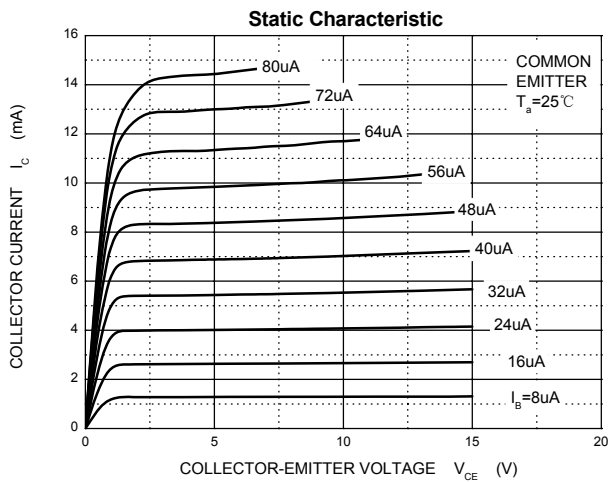
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V <sub>CB0</sub>	I <sub>c</sub> = 100 μA, I <sub>E</sub> = 0	400			V
Collector- emitter breakdown voltage *1	V <sub>CE0</sub>	I <sub>c</sub> = 1 mA, I <sub>B</sub> = 0	400			
Emitter - base breakdown voltage	V <sub>EB0</sub>	I <sub>E</sub> = 100 μA, I <sub>c</sub> = 0	6			
Collector-base cut-off current	I <sub>CB0</sub>	V <sub>CB</sub> = 400 V, I <sub>E</sub> = 0			100	nA
Emitter cut-off current	I <sub>EB0</sub>	V <sub>EB</sub> = 4V, I <sub>c</sub> =0			100	
Collector-emitter saturation voltage *1	V <sub>CE(sat)1</sub>	I <sub>c</sub> =10 mA, I <sub>B</sub> =1mA			0.2	V
	V <sub>CE(sat)2</sub>	I <sub>c</sub> =50 mA, I <sub>B</sub> =5mA			0.3	
Base - emitter saturation voltage *1	V <sub>BE(sat)</sub>	I <sub>c</sub> =10 mA, I <sub>B</sub> =1mA			0.75	
DC current gain *1	h <sub>FE(1)</sub>	V <sub>CE</sub> = 10V, I <sub>c</sub> = 1mA	50			
	h <sub>FE(2)</sub>	V <sub>CE</sub> = 10V, I <sub>c</sub> = 10mA	80		300	
	h <sub>FE(3)</sub>	V <sub>CE</sub> = 10V, I <sub>c</sub> = 50mA	40			
	h <sub>FE(4)</sub>	V <sub>CE</sub> = 10V, I <sub>c</sub> = 100mA	40			
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 20V, I <sub>E</sub> = 0, f=1MHz			7	pF
Transition frequency	f <sub>t</sub>	V <sub>CE</sub> =20, I <sub>c</sub> = 10mA, f=30MHz	50			MHz

\*1: Pulse test: pulse width ≤300μs, duty cycle ≤ 2.0%.

■ Classification of h<sub>FE(2)</sub>

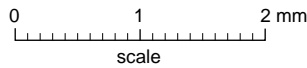
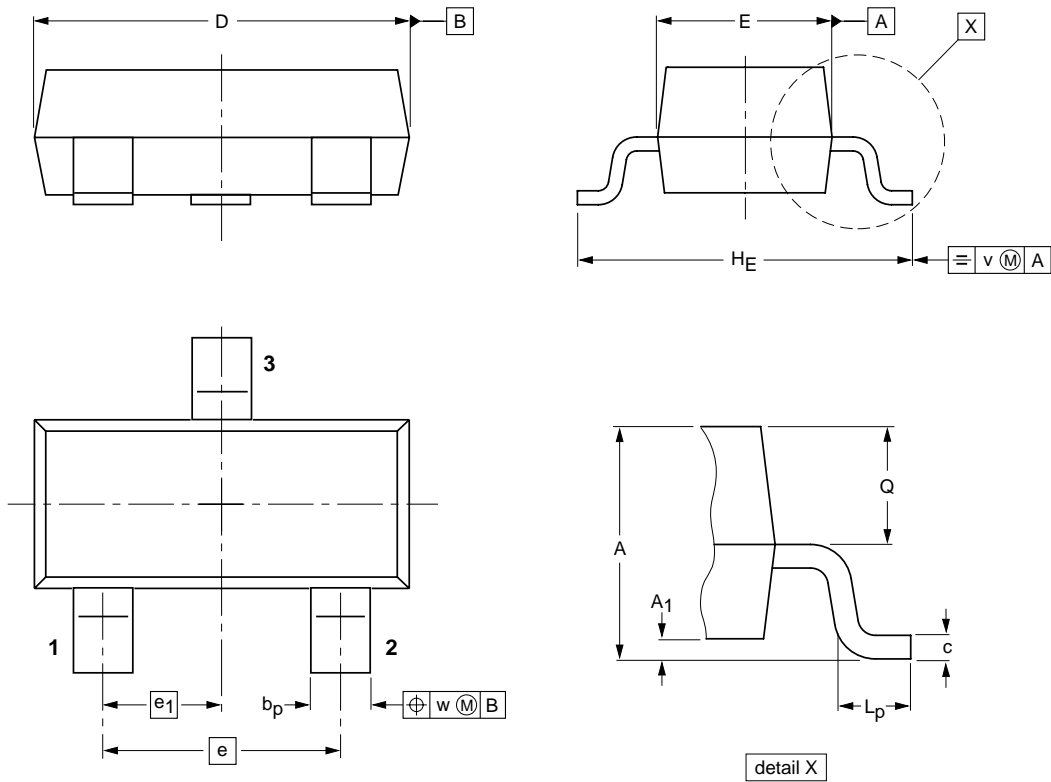
Type	MMBTA44	MMBTA44-L
Range	80-300	100-200
Marking	3D	

■ Typical Characteristics



**Package Outline**

**SOT-23**



**DIMENSIONS (mm are the original dimensions)**

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	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