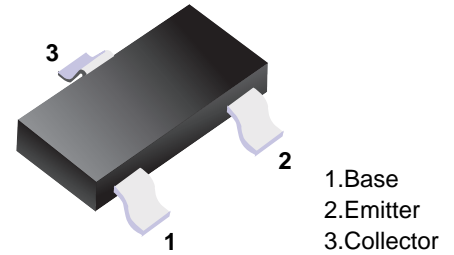


■ PNP Transistors



■ Simplified outline(SOT-23)

■ Features

- High Voltage Transistors
- Pb-Free Packages are Available

■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage	V <sub>CB0</sub>	-160	V
Collector-emitter voltage	V <sub>CEO</sub>	-150	V
Emitter-base voltage	V <sub>EBO</sub>	-5	V
Collector current-continuous	I <sub>C</sub>	-0.6	A
Collector Power Dissipation	P <sub>C</sub>	300	mW
Junction and storage temperature	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

■ Electrical Characteristics Ta = 25°C

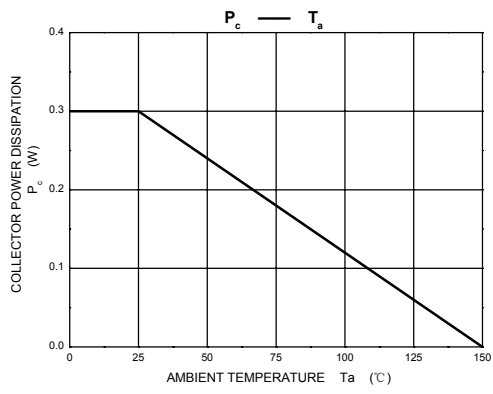
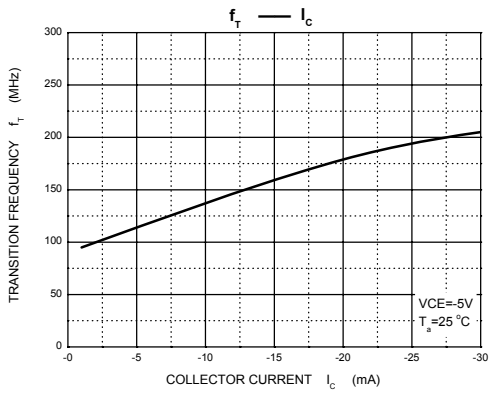
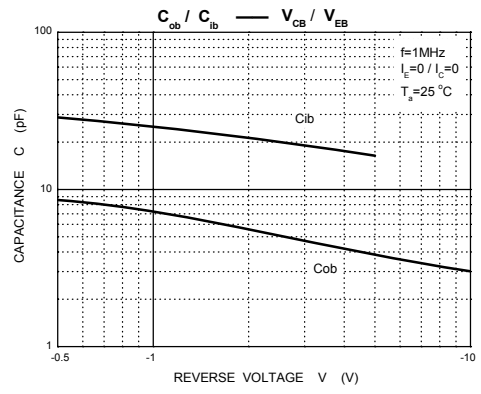
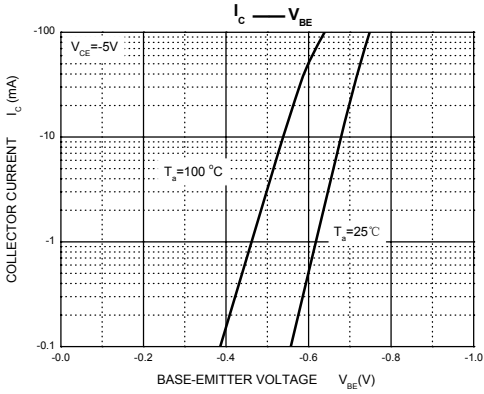
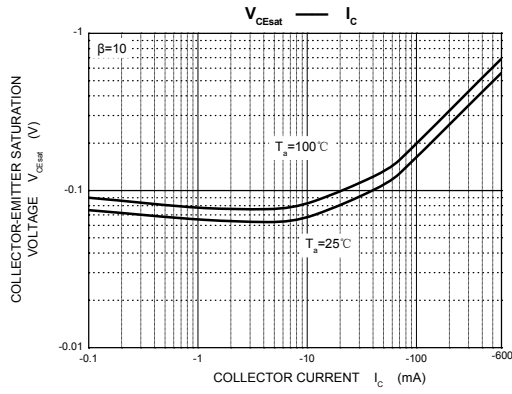
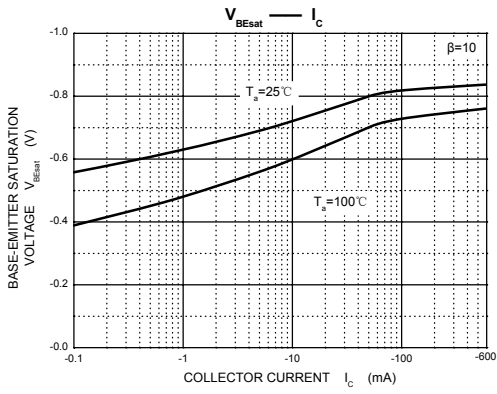
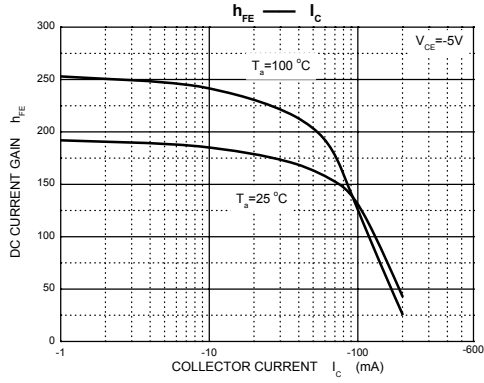
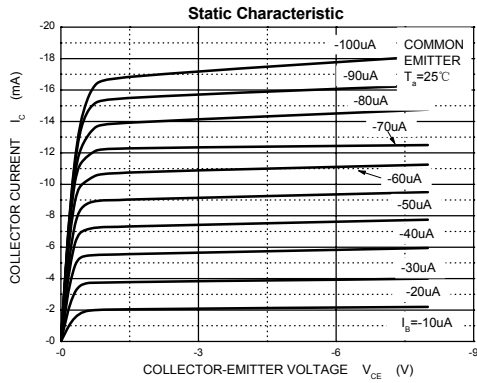
Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>CB0</sub>	I <sub>C</sub> = -100 μA, I <sub>E</sub> = 0	-160			V
Collector-emitter breakdown voltage *	V <sub>CEO</sub>	I <sub>C</sub> = -1.0 mA, I <sub>B</sub> = 0	-150			V
Emitter-base breakdown voltage	V <sub>EBO</sub>	I <sub>E</sub> = -10 μA, I <sub>C</sub> = 0	-5			V
Collector cutoff current	I <sub>CB0</sub>	V <sub>CB</sub> = -120 V, I <sub>E</sub> = 0			-0.1	μA
Emitter cutoff current	I <sub>EBO</sub>	V <sub>EB</sub> = -4.0 V, I <sub>C</sub> = 0			-0.1	μA
DC current gain *	h <sub>FE</sub>	I <sub>C</sub> = -1.0 mA, V <sub>CE</sub> = -5 V	80			
		I <sub>C</sub> = -10 mA, V <sub>CE</sub> = -5 V	100		300	
		I <sub>C</sub> = -50 mA, V <sub>CE</sub> = -5 V	50			
Collector-emitter saturation voltage *	V <sub>CE(sat)</sub>	I <sub>C</sub> = -50 mA, I <sub>B</sub> = -5.0 mA			-0.5	V
Base-emitter saturation voltage *	V <sub>BE(sat)</sub>	I <sub>C</sub> = -50 mA, I <sub>B</sub> = -5.0 mA			-1.0	V
Transistor frequency	f <sub>T</sub>	V <sub>CE</sub> = -5V, I <sub>C</sub> = -10mA, f = 30MHz	100			MHz

\* Pulse Test: Pulse Width = 300 μs, Duty Cycle=2.0%.

■ Classification of h<sub>FE</sub>(2)

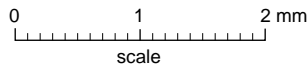
Type	MMBT5401	MMBT5401-L	MMBT5401-H
Range	100-300	100-200	200-300
Marking	2L		

■ 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