

# SOT-23 Plastic-Encapsulate Transistors

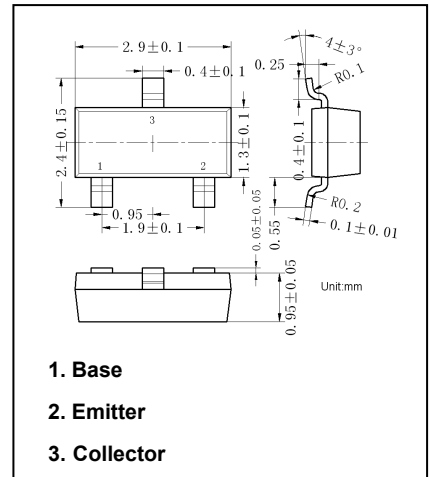
## MMBT4403

PNP Transistor

### Features

- Switching transistor

Marking: 2T



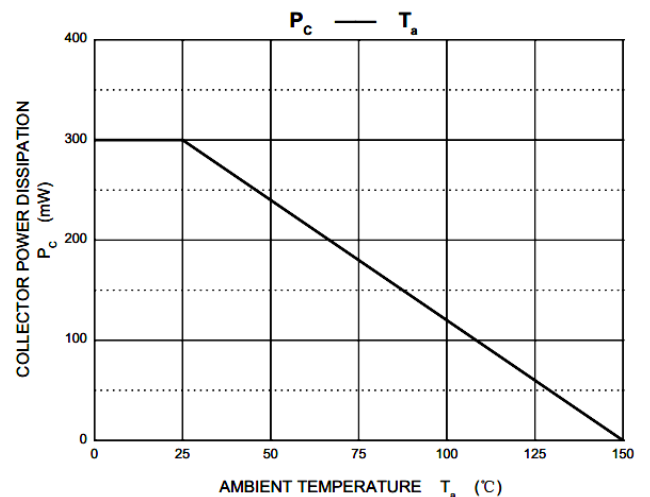
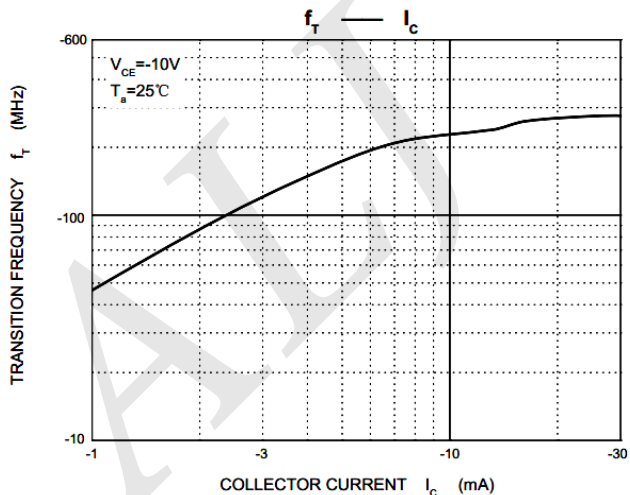
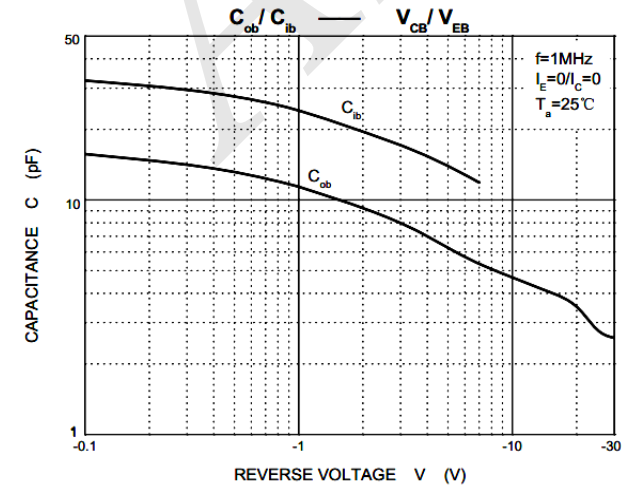
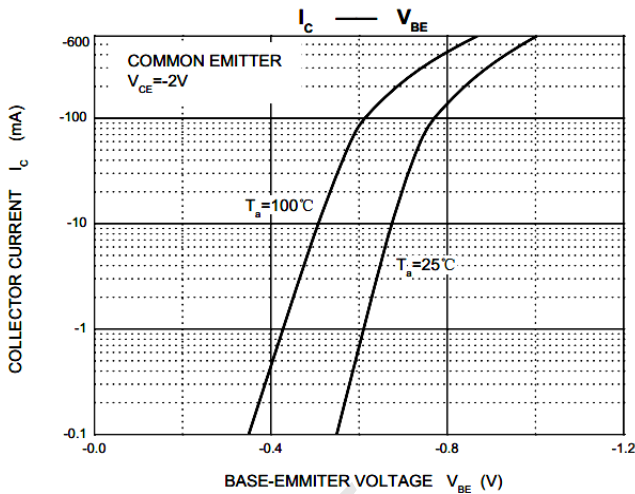
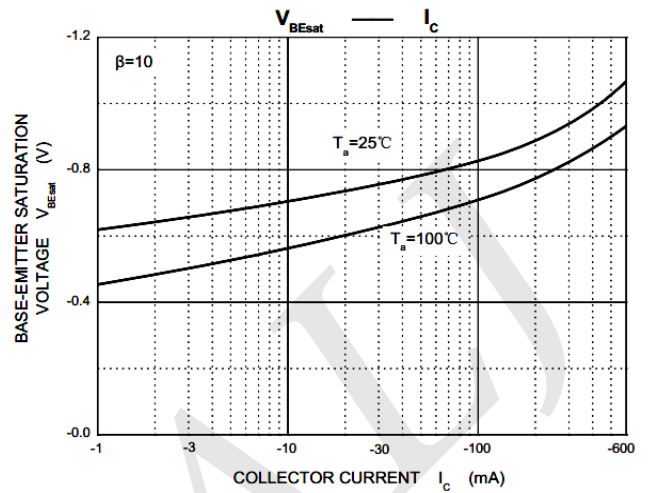
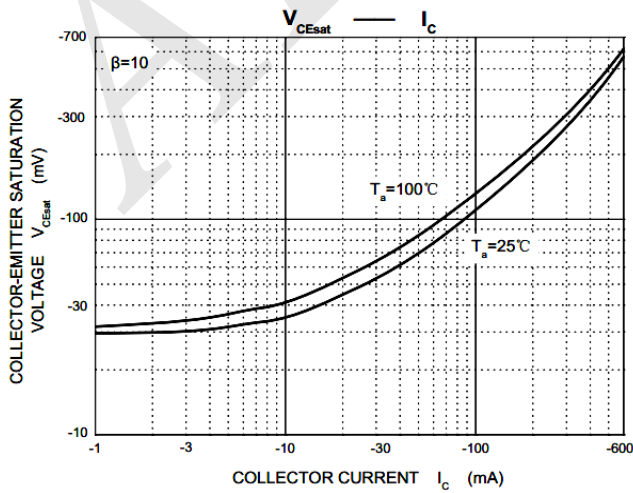
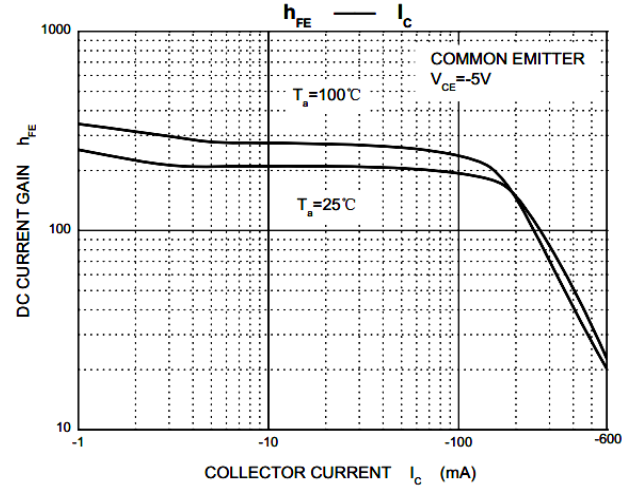
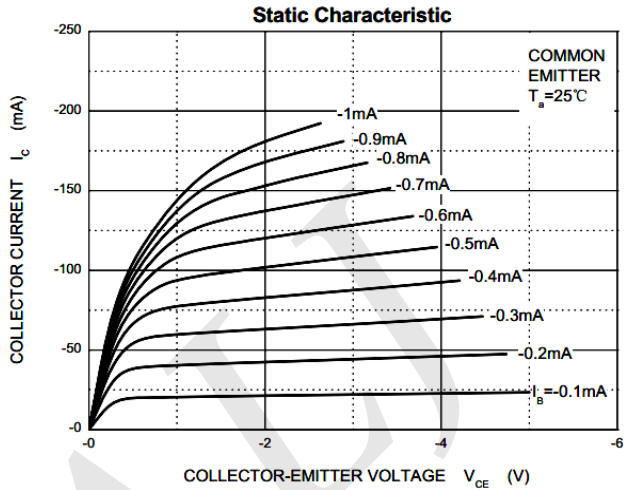
### Maximum Ratings (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CEO</sub>	Collector emitter voltage	-40	V
V <sub>CBO</sub>	Collector base voltage	-40	V
V <sub>EBO</sub>	Emitter base voltage	-5	V
I <sub>c</sub>	Collector current(DC)	-0.6	A
P <sub>c</sub>	Collector power dissipation	0.3	W
T <sub>j</sub>	Junction temperature	150	°C
T <sub>stg</sub>	Storage temperature	- 55 to +150	°C
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	417	°C/W

**Electrical Characteristics (T<sub>a</sub>=25°C unless otherwise specified)**

Symbol	Parameter	Test Conditions	Min	Max	Unit
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> = -1mA, I <sub>B</sub> = 0	-40		V
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> = -100μA, I <sub>E</sub> = 0	-40		V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> = -100μA, I <sub>C</sub> = 0	-5		V
I <sub>CBO</sub>	Collector cut off current	V <sub>CB</sub> = -35V, I <sub>E</sub> = 0		-100	nA
I <sub>CEX</sub>	Collector cut off current	V <sub>CE</sub> = -35V, V <sub>BE</sub> = 0.4V		-100	nA
I <sub>EBO</sub>	Emitter cut off current	V <sub>EB</sub> = -4 V, I <sub>C</sub> = 0		-100	nA
h <sub>FE</sub>	Dc current gain	V <sub>CE</sub> = -5V, I <sub>C</sub> = -1mA	100		
		V <sub>CE</sub> = -2V, I <sub>C</sub> = -150mA	200	300	
		V <sub>CE</sub> = -2V, I <sub>C</sub> = -500mA	20		
		V <sub>CE</sub> = -1V, I <sub>C</sub> = -0.1mA	30		
		V <sub>CE</sub> = -1V, I <sub>C</sub> = -1mA	60		
		V <sub>CE</sub> = -1V, I <sub>C</sub> = -10mA	100		
V <sub>CE (sat)</sub>	Collector emitter saturation voltage	I <sub>C</sub> = -150mA, I <sub>B</sub> = -15mA		-0.4	V
		I <sub>C</sub> = -500mA, I <sub>B</sub> = -50mA		-0.75	V
V <sub>BE (sat)</sub>	Base-emitter saturation voltage	I <sub>C</sub> = -150mA, I <sub>B</sub> = -15mA		-0.95	V
		I <sub>C</sub> = -500mA, I <sub>B</sub> = -50mA		-1.3	V
f <sub>T</sub>	Transition frequency	V <sub>CE</sub> = -10V, I <sub>C</sub> = -20mA f = 100MHz	200		MHz
t <sub>d</sub>	Delay time	V <sub>CC</sub> = -30V, V <sub>BE(off)</sub> = -0.5V		15	ns
t <sub>r</sub>	Rise time	I <sub>C</sub> = -150mA, I <sub>B1</sub> = -15mA		20	ns
t <sub>s</sub>	Storage time	V <sub>CC</sub> = -30V, I <sub>C</sub> = -150mA		225	ns
t <sub>f</sub>	Fall time	I <sub>B1</sub> = I <sub>B2</sub> = -15mA		60	ns

# Typical Characteristics



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