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**MMBTA05** TRANSISTOR (NPN)

**SOT-23 Plastic-Encapsulate Transistors**

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客户确认：

公司签章：

部门

工程部

品保部

采购部

签名

日期



**SOT-23 Plastic-Encapsulate Transistors**

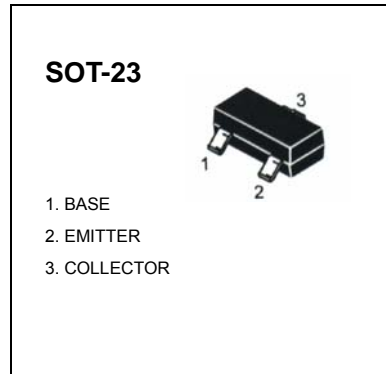
**MMBTA05** TRANSISTOR (NPN)

**FEATURES**

Driver transistor

**MARKING :1H**

**MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)**

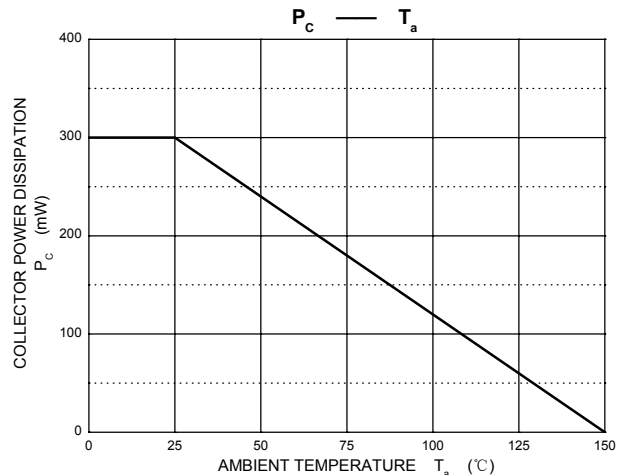
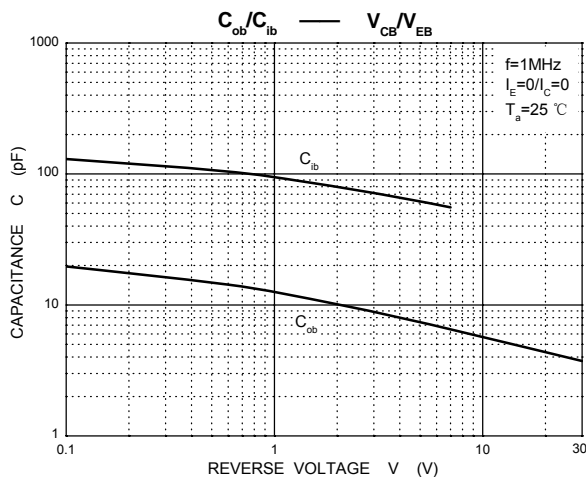
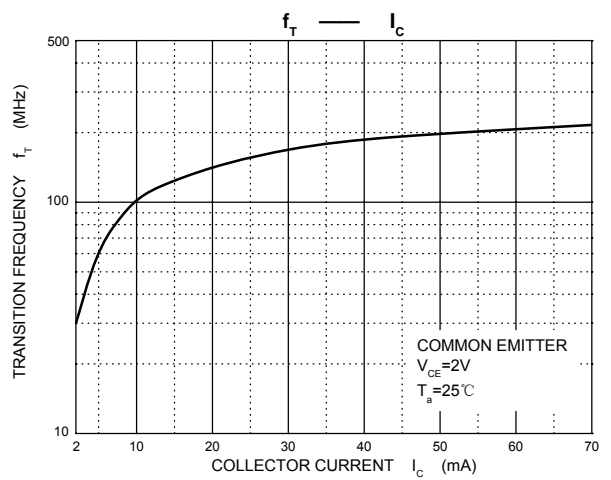
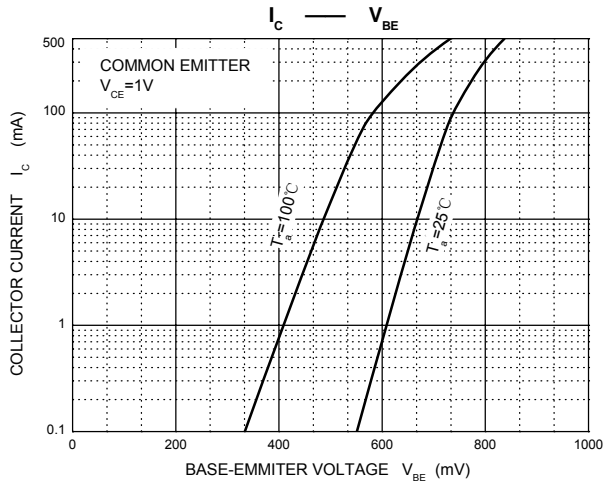
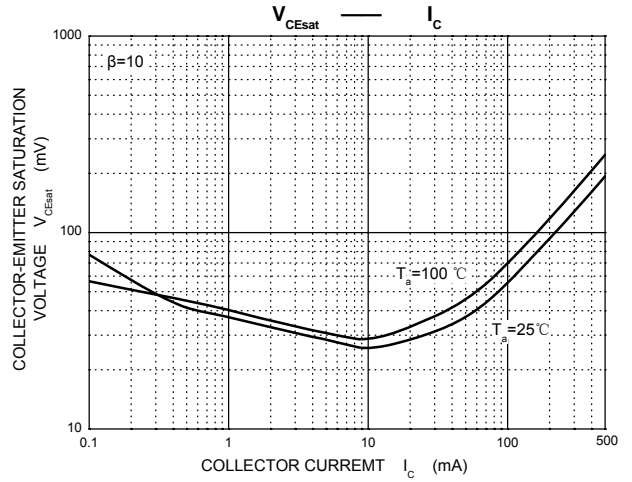
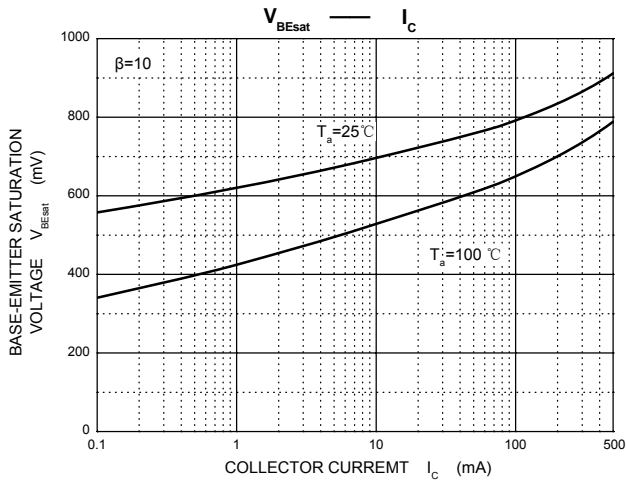
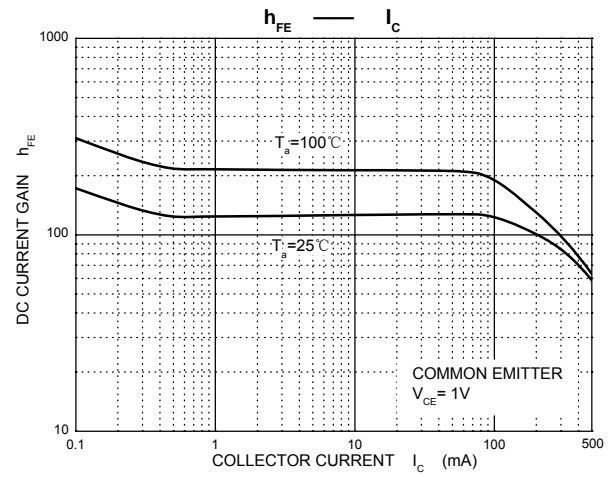
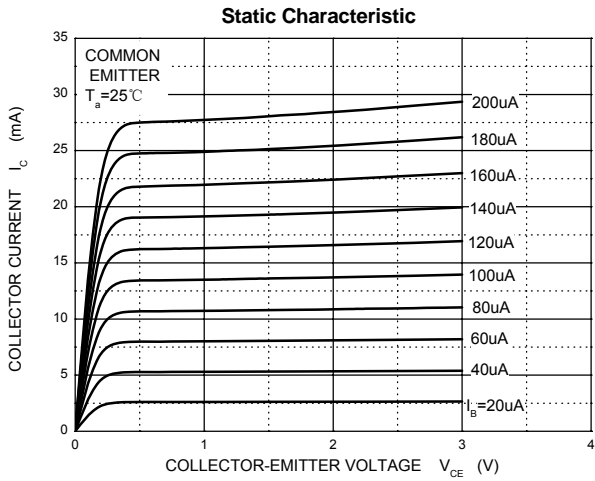


Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	60	V
V <sub>EBO</sub>	Emitter-Base Voltage	4	V
I <sub>C</sub>	Collector Current -Continuous	0.5	A
P <sub>C</sub>	Collector Power Dissipation	300	mW
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C

**ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 100μA, I <sub>E</sub> =0	60			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 1mA, I <sub>B</sub> =0	60			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =100μA, I <sub>C</sub> =0	4			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =60V, I <sub>E</sub> =0			0.1	μA
Collector cut-off current	I <sub>CEO</sub>	V <sub>CE</sub> =60V, I <sub>B</sub> =0			0.1	μA
Collector cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =3V, I <sub>C</sub> =0			0.1	μA
DC current gain	h <sub>FE1</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> = 10mA	100		400	
	h <sub>FE2</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> = 100mA	100			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA			0.25	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> = 100mA			1.2	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> =10mA f=100MHz	100			MHz

# Typical Characteristics



## SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

## SOT-23 Suggested Pad Layout



### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.