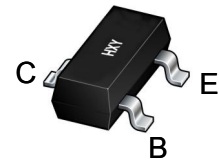




## FEATURES

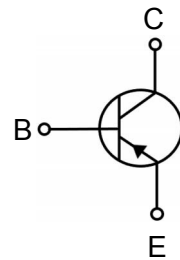
- Collector Current:  $I_C = -0.6A$
- Power Dissipation of 300mw



SOT-23

## Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MMBT4403	SOT-23	2T	3000



## MAXIMUM RATINGS (Ta=25 unless otherwise noted)

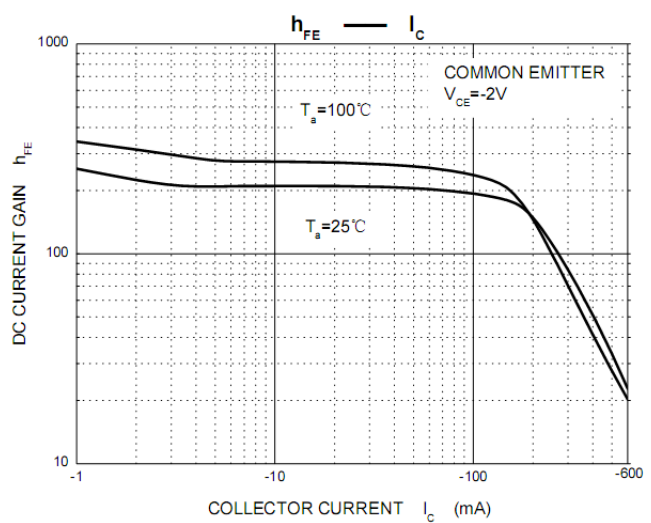
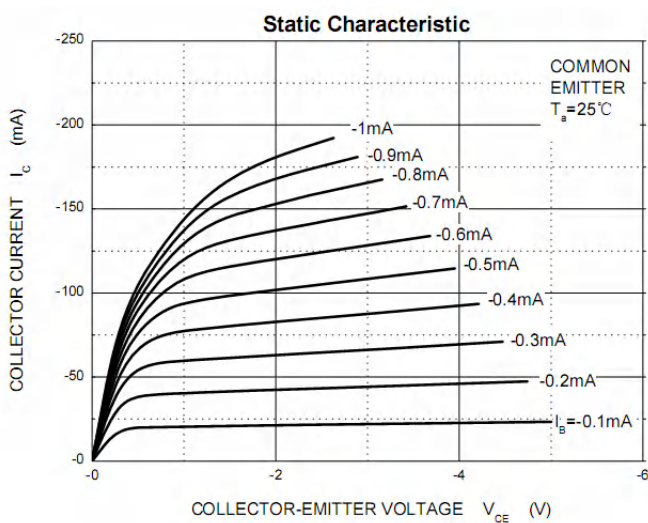
Parameter	Symbol	Limit	Unit
Collector-Base Voltage	$V_{CBO}$	-40	V
Collector-Emitter Voltage	$V_{CEO}$	-40	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-600	mA
Collector Power Dissipation	$P_C$	300	mW
Thermal Resistance From Junction To Ambient	$R_{OJA}$	417	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{stg}$	-55~+150	°C

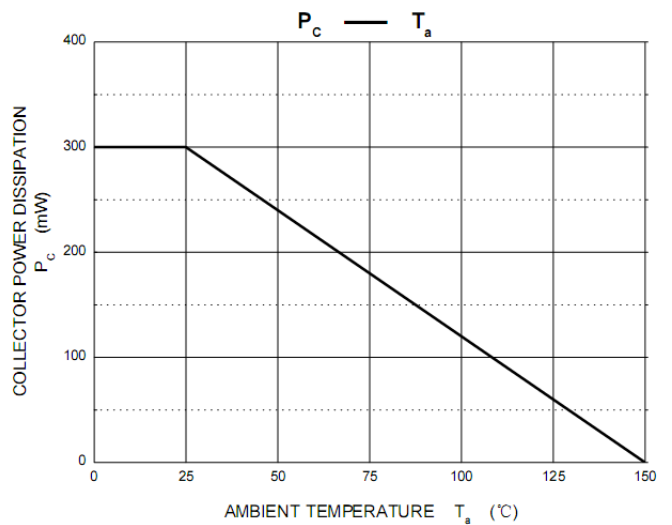
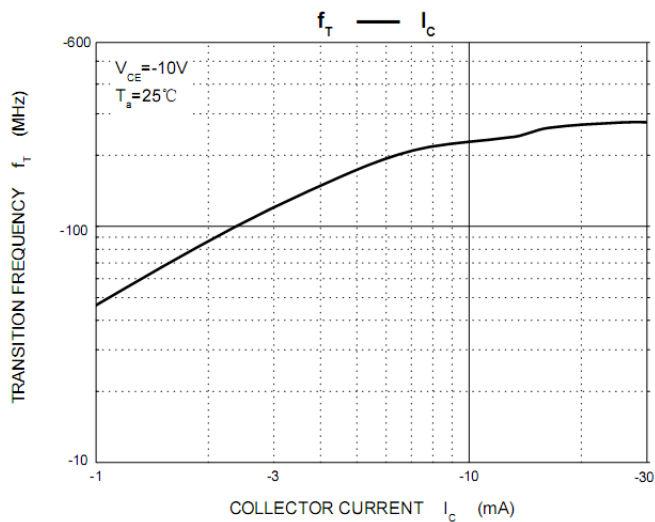
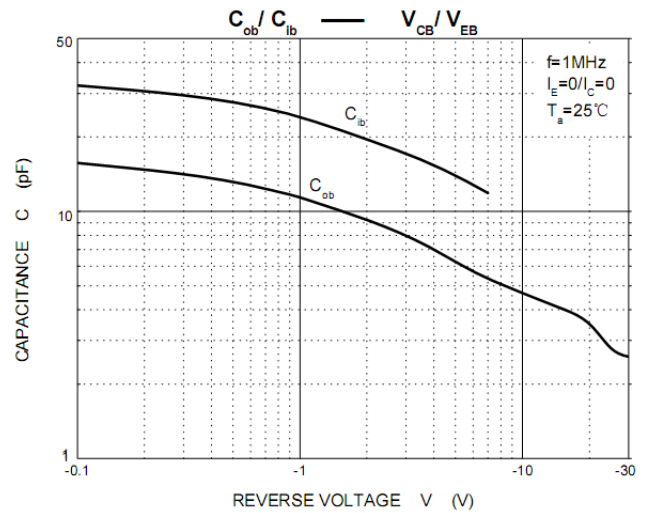
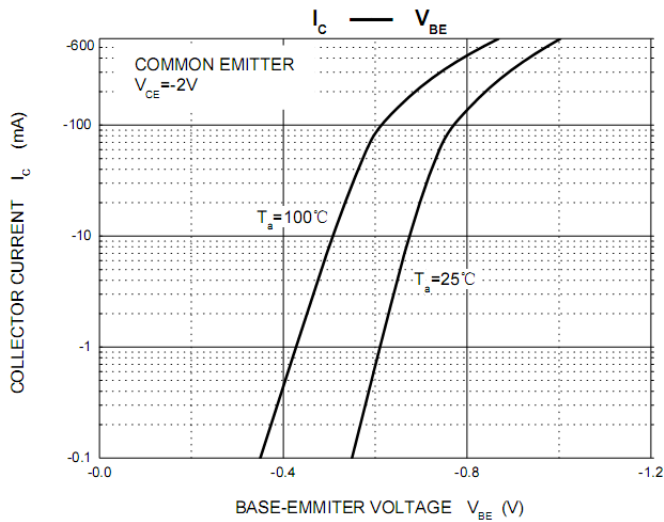
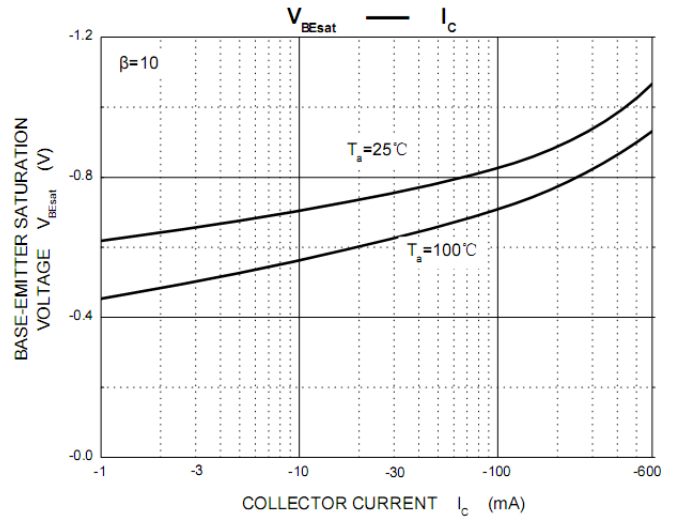
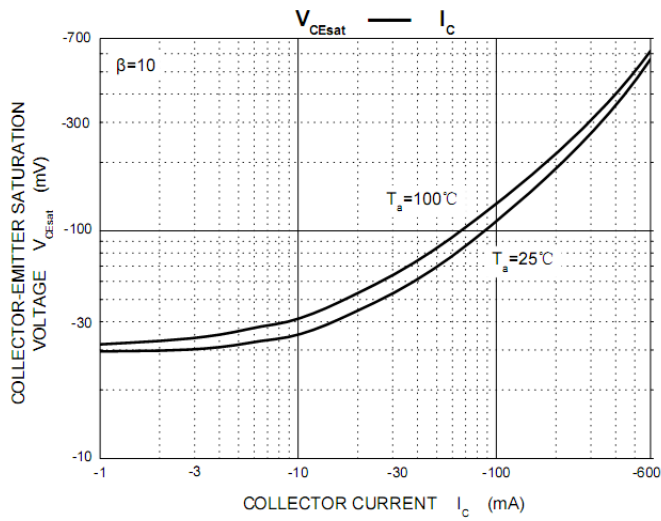


**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25 unless otherwise specified)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =-100 μ A, I <sub>E</sub> =0	-40			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-1mA, I <sub>B</sub> =0	-40			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =-100 μ A, I <sub>C</sub> =0	-5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =-35V, I <sub>E</sub> =0			-0.1	μ A
Collector cut-off current	I <sub>CEX</sub>	V <sub>CE</sub> =-35V, V <sub>BE</sub> =0.4V			-0.1	μ A
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =-4V, I <sub>C</sub> =0			-0.1	μ A
DC current gain	h <sub>FE1</sub>	V <sub>CE</sub> =-1V, I <sub>C</sub> =-0.1mA	H			
	h <sub>FE2</sub>	V <sub>CE</sub> =-1V, I <sub>C</sub> =-1mA	10			
	h <sub>FE3</sub>	V <sub>CE</sub> =-1V, I <sub>C</sub> =-10mA	100			
	h <sub>FE4</sub>	V <sub>CE</sub> =-2V, I <sub>C</sub> =-150mA	100		300	
	h <sub>FE5</sub>	V <sub>CE</sub> =-2V, I <sub>C</sub> =-500mA	100			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	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
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	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
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-20mA, f =100MHz	200			MHz
Delay time	t <sub>d</sub>	V <sub>CC</sub> =-30V, V <sub>BE(off)</sub> =-0.5V			15	μs
Rise time	t <sub>r</sub>	I <sub>C</sub> =-150mA, I <sub>B1</sub> =-15mA			20	μs
Storage time	t <sub>s</sub>	V <sub>CC</sub> =-30V, I <sub>C</sub> =-150mA			225	μs
Fall time	t <sub>f</sub>	I <sub>B1</sub> =I <sub>B2</sub> =-15mA			10	μs

**Typical Characteristics**





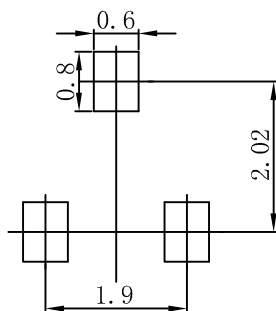


### SOT-23 Package Outline Dimensions



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:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.



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