

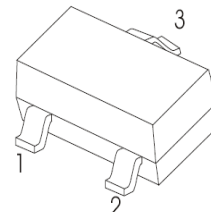
SOT-23 Plastic-Encapsulate Transistor
MMBT4403 TRANSISTOR (PNP)
SOT-23
FEATURES

- Switching transistor

MARKING: 2T
MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current –Continuous	-600	mA
P_{C^*}	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance, junction to Ambient	417	$^{\circ}\text{C}/\text{W}$
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150	$^{\circ}\text{C}$

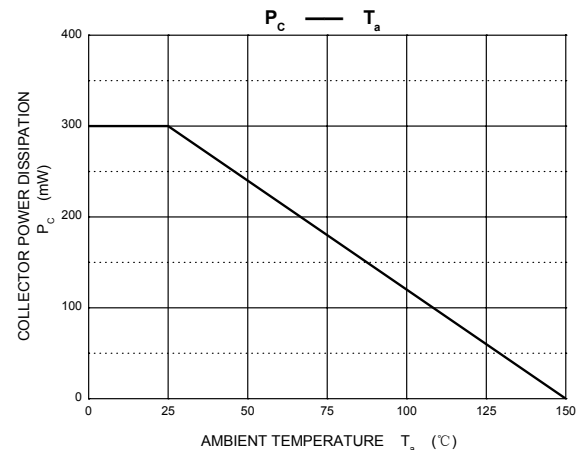
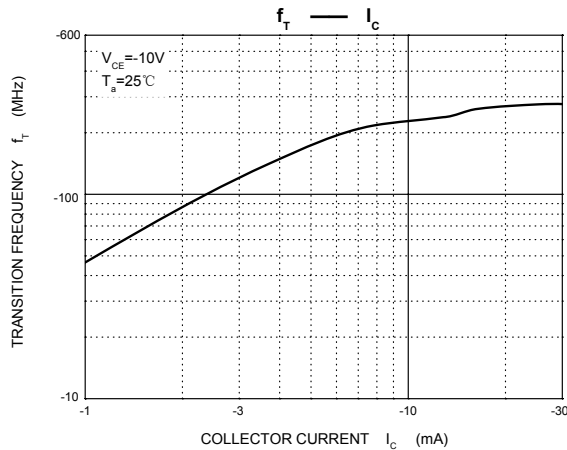
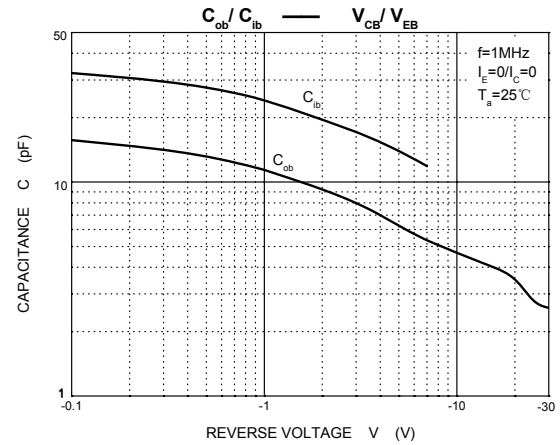
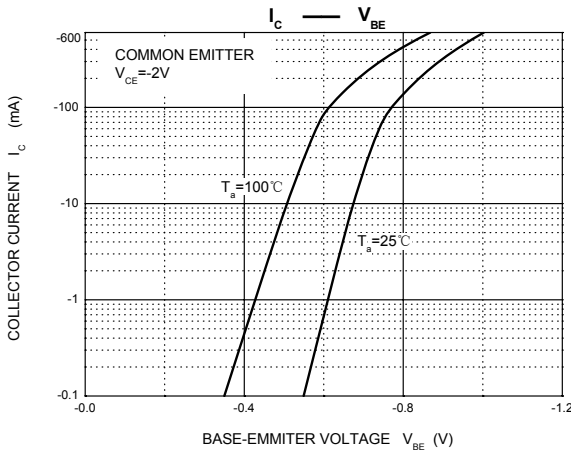
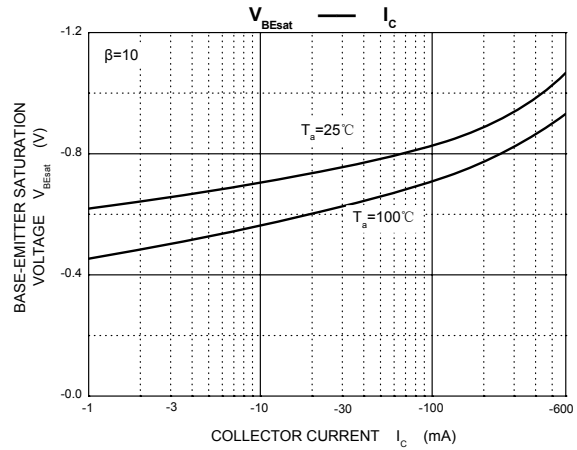
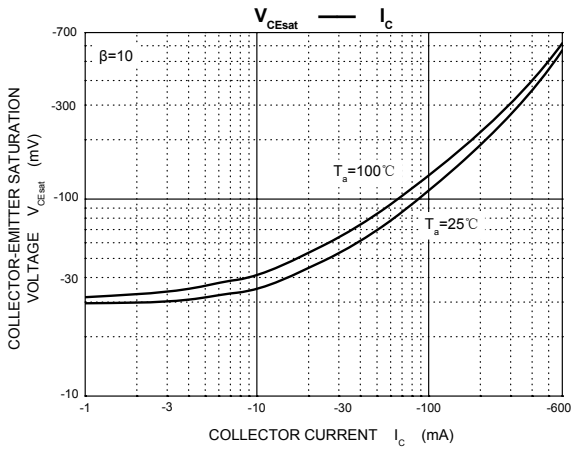
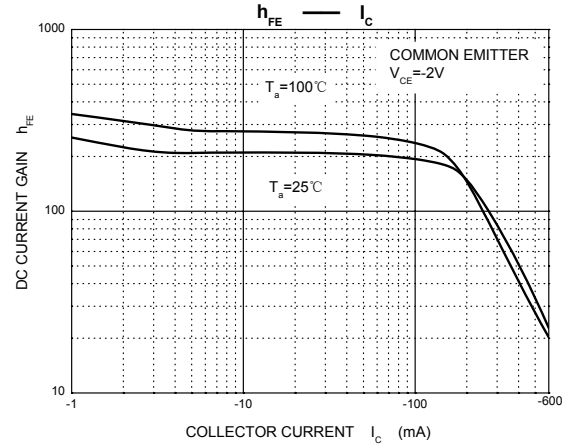
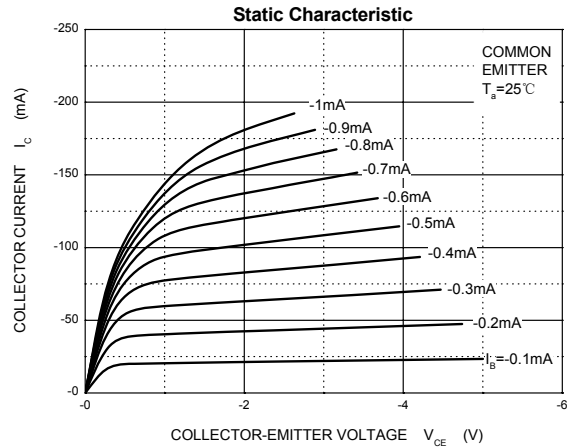
1. BASE
2. EMITTER
3. COLLECTOR


ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-100\mu\text{A}, I_E=0$	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, I_B=0$	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-100\mu\text{A}, I_C=0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB}=-35\text{V}, I_E=0$			-0.1	μA
Collector cut-off current	I_{CEX}	$V_{CE}=-35\text{V}, V_{BE}=0.4\text{V}$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=-4\text{V}, I_C=0$			-0.1	μA
DC current gain	h_{FE1}	$V_{CE}=-1\text{V}, I_C=-0.1\text{mA}$	30			
	h_{FE2}	$V_{CE}=-1\text{V}, I_C=-1\text{mA}$	60			
	h_{FE3}	$V_{CE}=-1\text{V}, I_C=-10\text{mA}$	100			
	h_{FE4}	$V_{CE}=-2\text{V}, I_C=-150\text{mA}$	100		300	
	h_{FE5}	$V_{CE}=-2\text{V}, I_C=-500\text{mA}$	20			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-150\text{mA}, I_B=-15\text{mA}$			-0.4	V
		$I_C=-500\text{mA}, I_B=-50\text{mA}$			-0.75	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-150\text{mA}, I_B=-15\text{mA}$			-0.95	V
		$I_C=-500\text{mA}, I_B=-50\text{mA}$			-1.3	V
Transition frequency	f_T	$V_{CE}=-10\text{V}, I_C=-20\text{mA}, f=100\text{MHz}$	200			MHz
Delay time	t_d	$V_{CC}=-30\text{V}, V_{BE(off)}=-0.5\text{V}$			15	ns
Rise time	t_r	$I_C=-150\text{mA}, I_{B1}=-15\text{mA}$			20	ns
Storage time	t_s	$V_{CC}=-30\text{V}, I_C=-150\text{mA}$			225	ns
Fall time	t_f	$I_{B1}=I_{B2}=-15\text{mA}$			60	ns

The above data are for reference only.

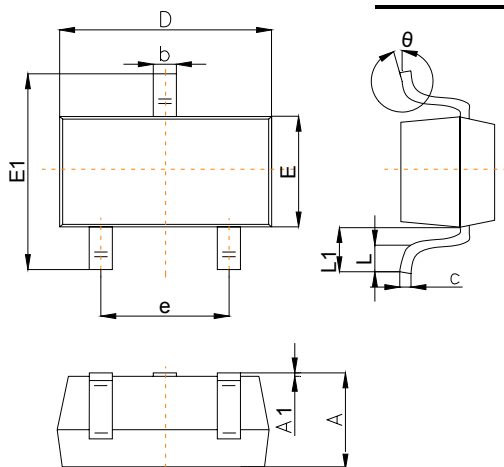
Typical Characteristics



The curve above is for reference only.

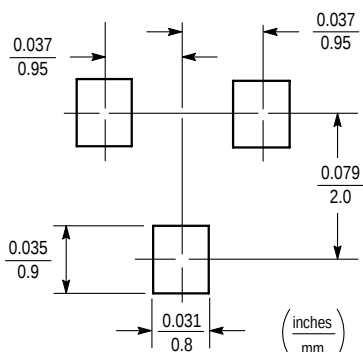
Outline Drawing

SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		
	Min	Typ	Max
A	0.65		1.40
A1	0.00		0.20
b	0.30		0.55
c	0.08		0.20
D	2.70		3.10
E	1.15		1.65
E1	2.10		2.80
e	1.70		2.10
L	0.15		0.50
L1	0.35		0.70
θ	0°		12°

Suggested Pad Layout



Note:

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

PACKAGE SPECIFICATIONS

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (pcs)	Box Size (mm)	QTY/Box (pcs)	Carton Size (mm)	Q'TY/Carton (pcs)
SOT-23	7'	330	3000	203×203×195	45000	438×438×220	180000