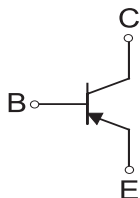
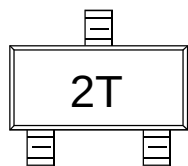


SOT-23 Plastic-Encapsulate Transistors**MMBT4403**

TRANSISTOR (PNP)

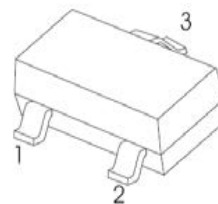
FEATURES

- Switching transistor

MARKING**Equivalent Circuit**

HFE	100-300	
RANK	L	H
RANGE	100 - 200	200 - 300

SOT - 23



1. BASE
2. EMITTER
3. COLLECTOR

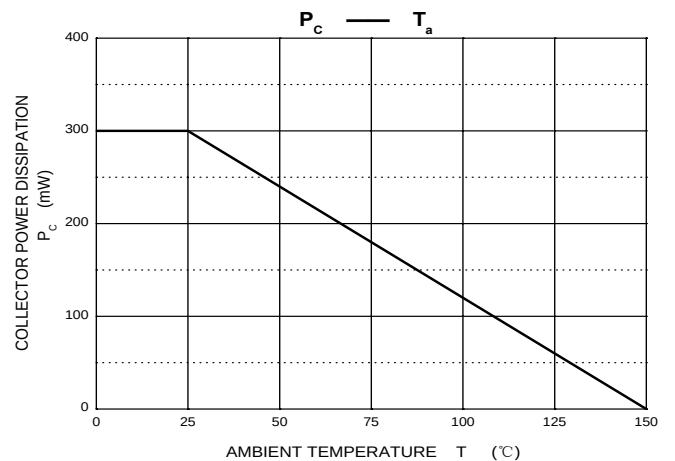
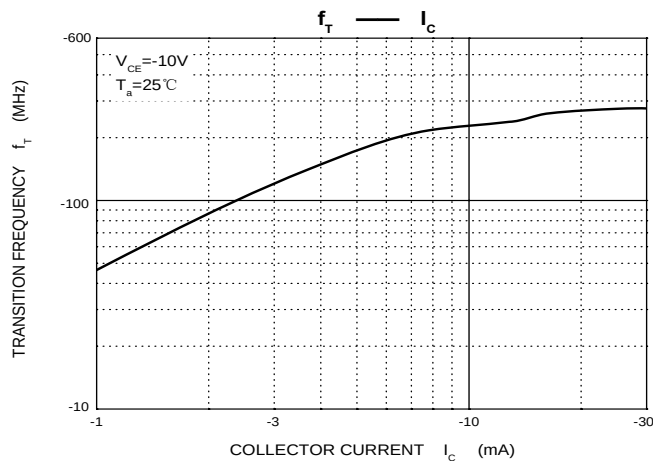
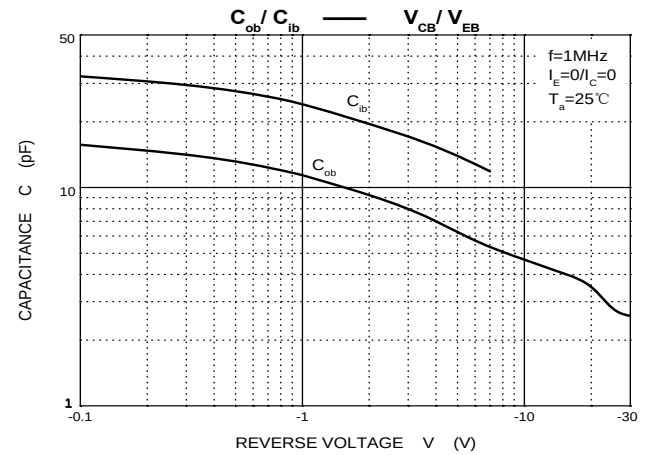
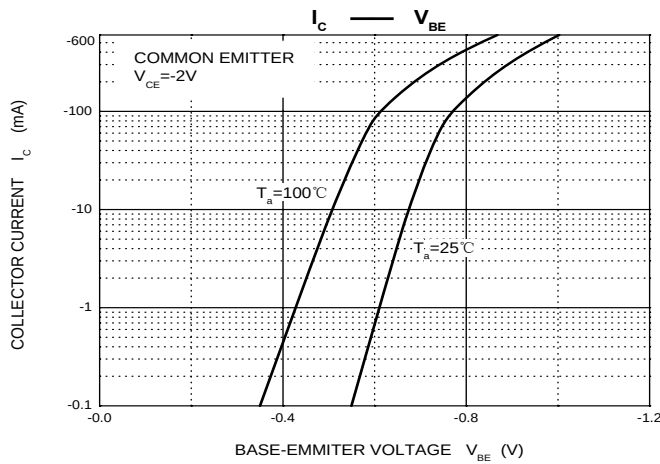
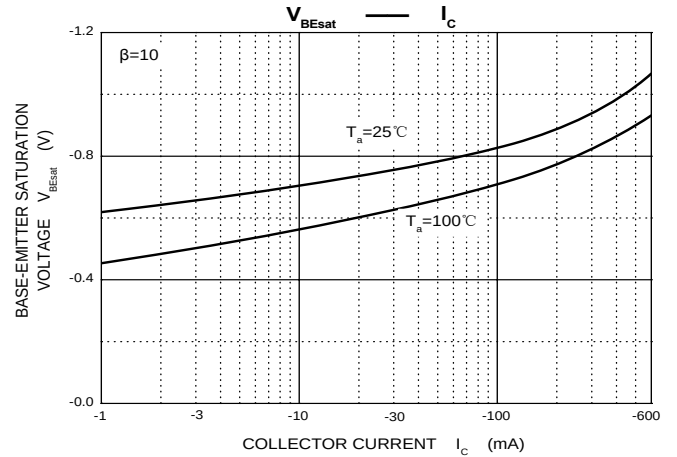
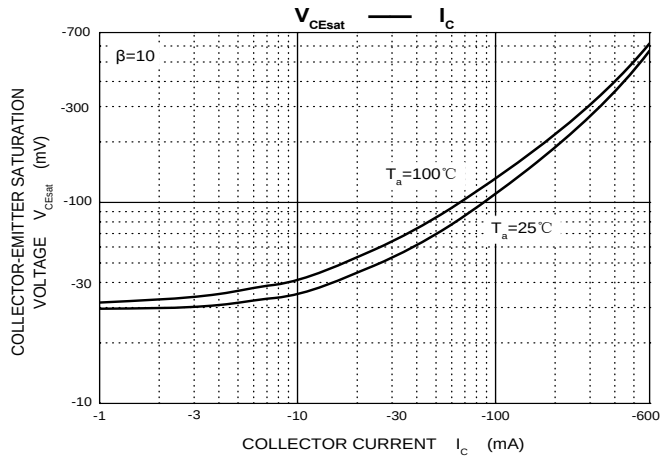
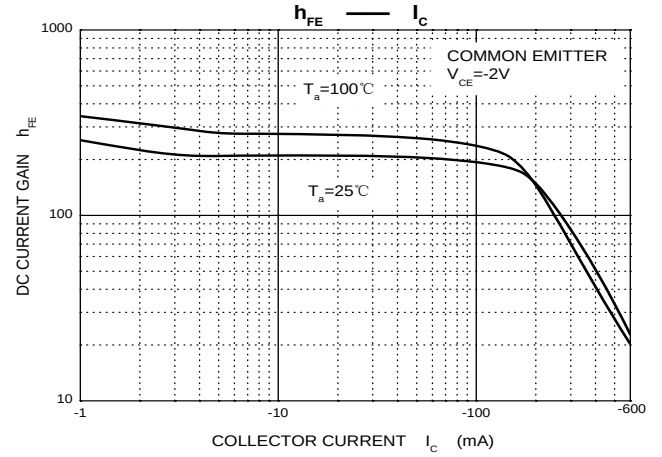
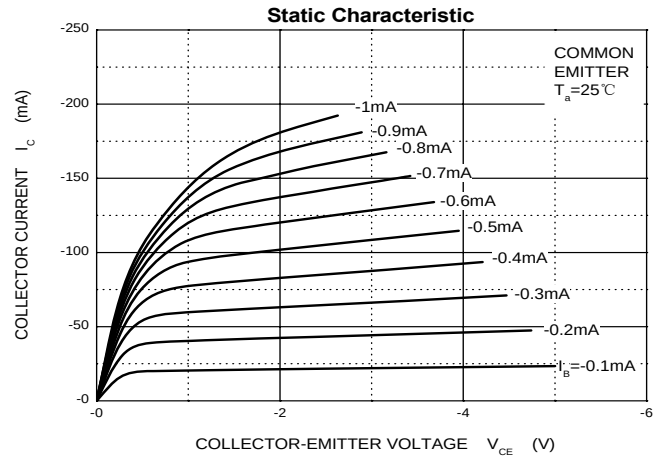
MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

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	-600	mA
P_C	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	417	$^{\circ}\text{C/W}$
T_j, T_{stg}	Operation Junction and Storage Temperature Range	-55 ~ +150	$^{\circ}\text{C}$

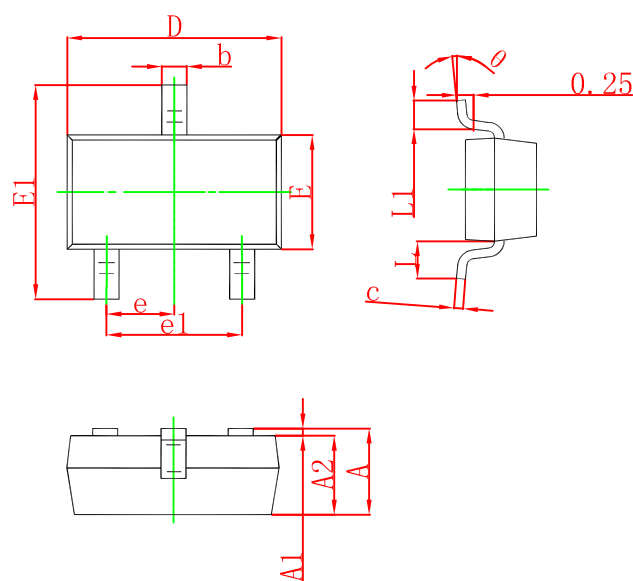
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

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

Typical Characteristics

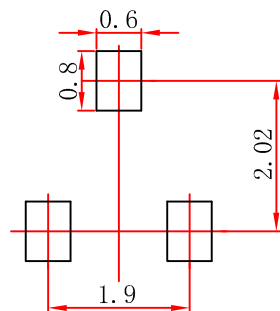


Package Outline Dimensions (SOT-23)



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°

Suggested Pad Layout (SOT-23)



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