



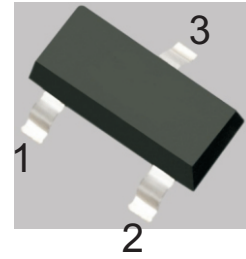
MMBT4403

PNP TRANSISTOR

FEATURES

- Switching Transistor

SOT-23



- 1.BASE  
2.EMITTER  
3.COLLECTOR

MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

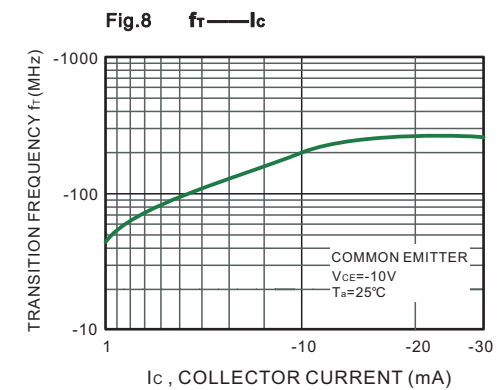
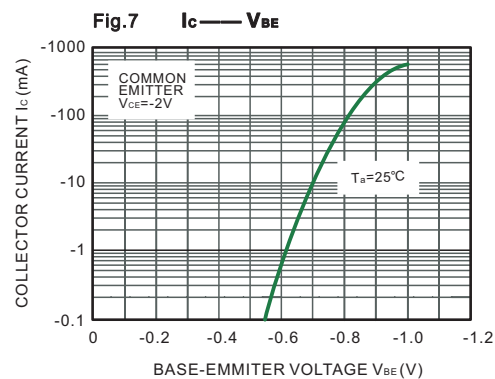
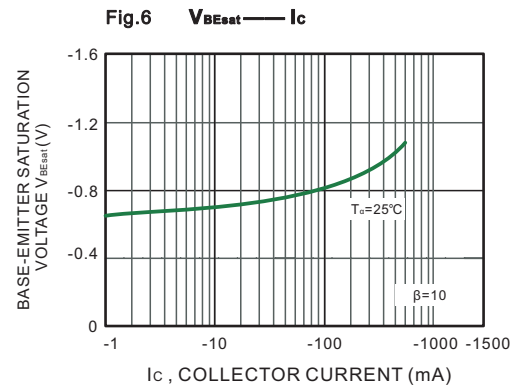
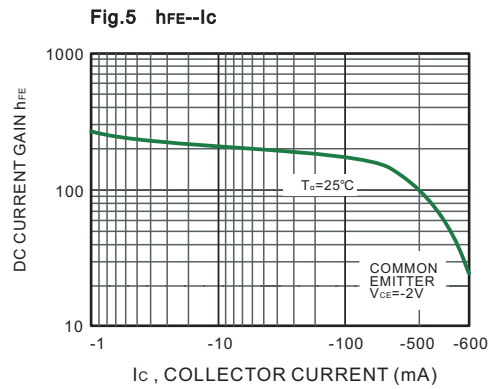
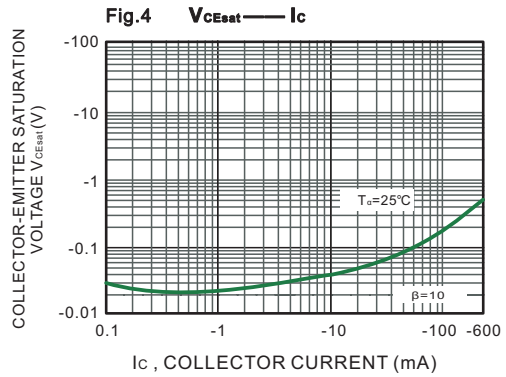
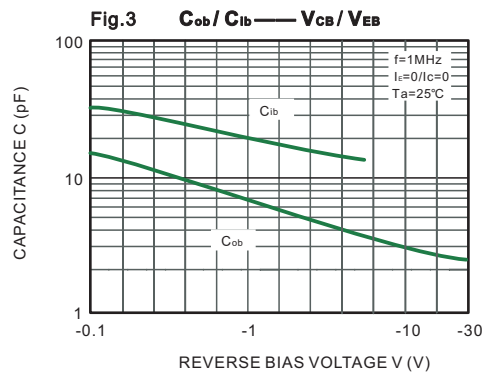
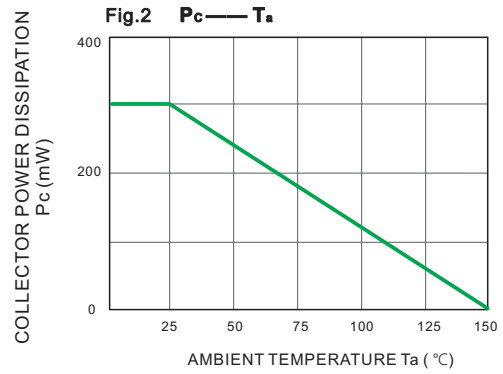
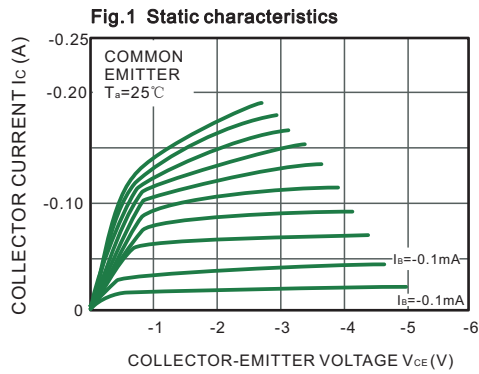
Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CB0}$	-40	V
Collector-Emitter Voltage	$V_{CEO}$	-40	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current — Continuous	$I_C$	-600	mA
Collector Power Dissipation	$P_C$	300	mW
Thermal Resistance From Junction To Ambient	$R_{thJA}$	417	°C/W
Operation Junction and Storage Temperature Range	$T_J, T_{stg}$	-55~+150	°C

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

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

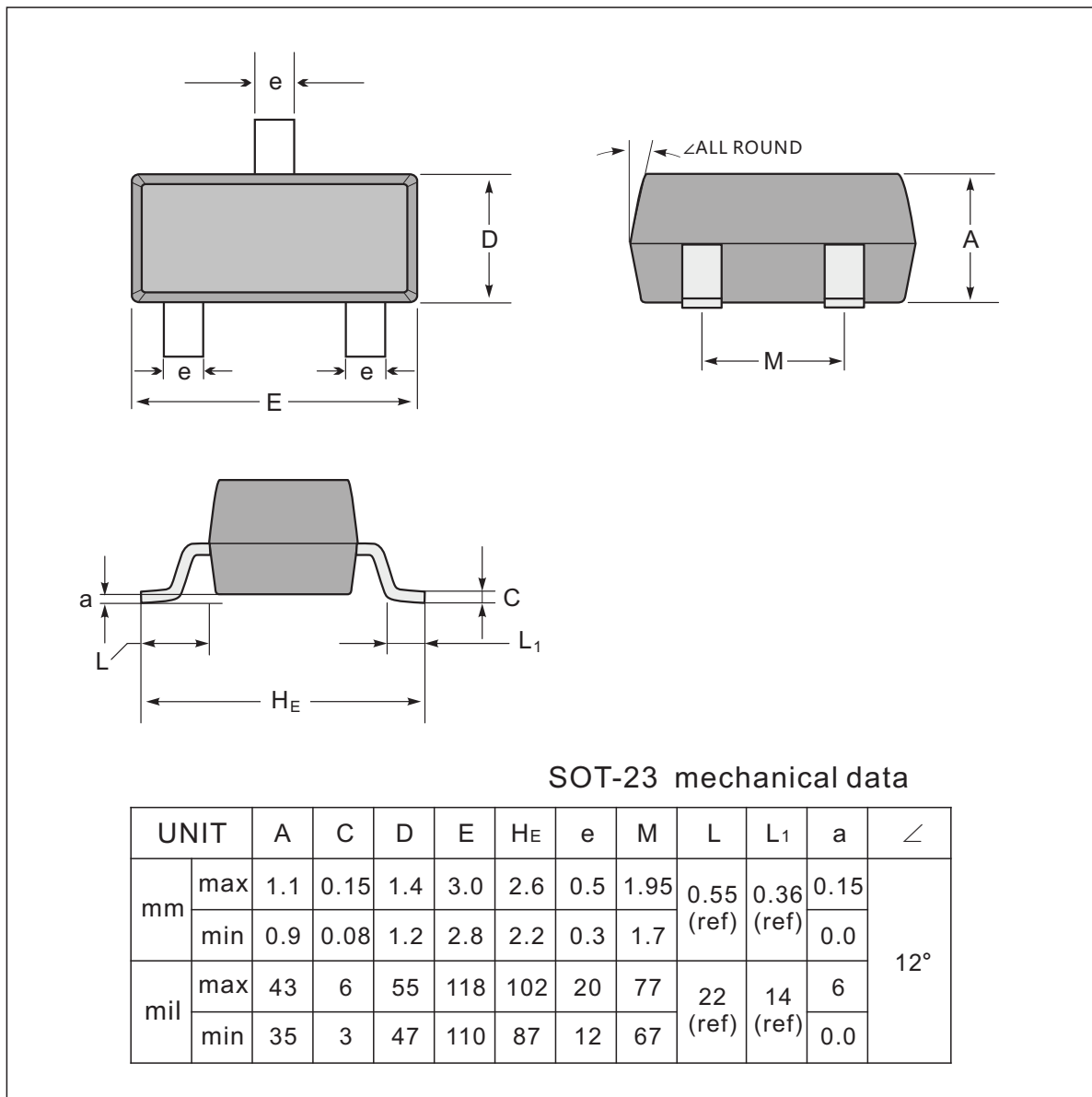


### TYPICAL CHARACTERISTICS

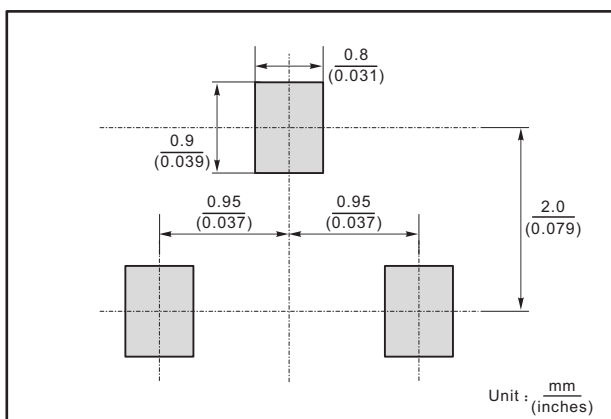




### SOT-23 Package Outline Dimensions



#### The recommended mounting pad size



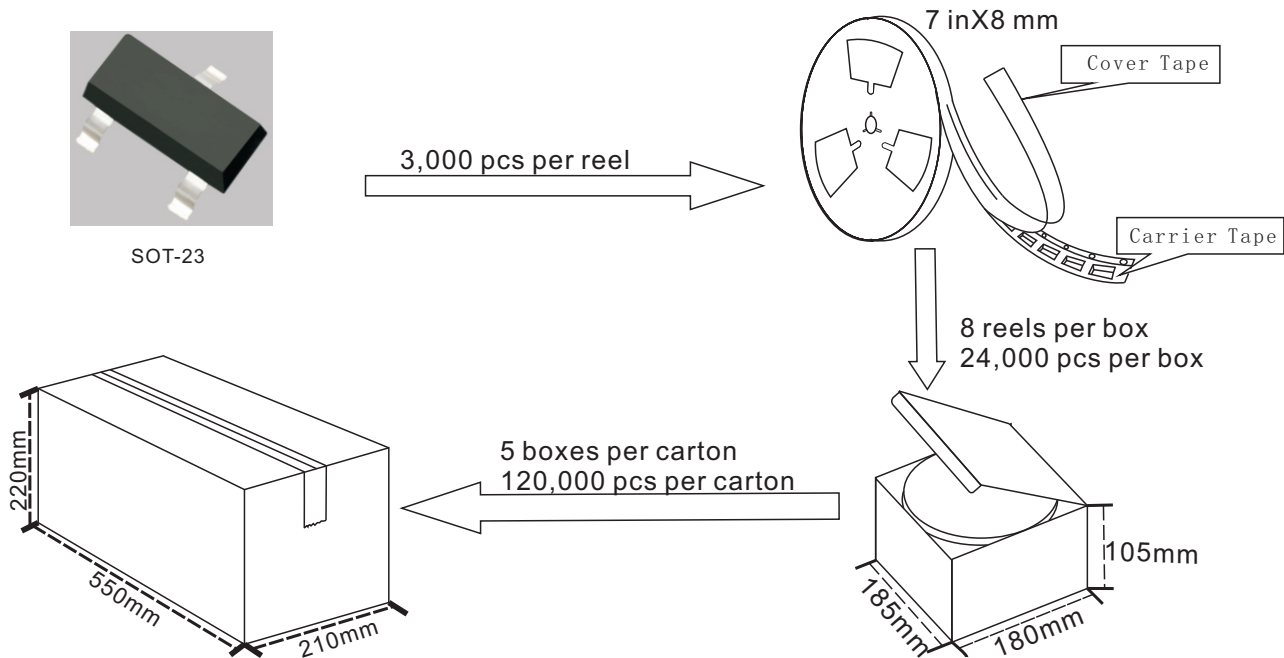
#### Marking

Type number	Marking code
MMBT4403	2T

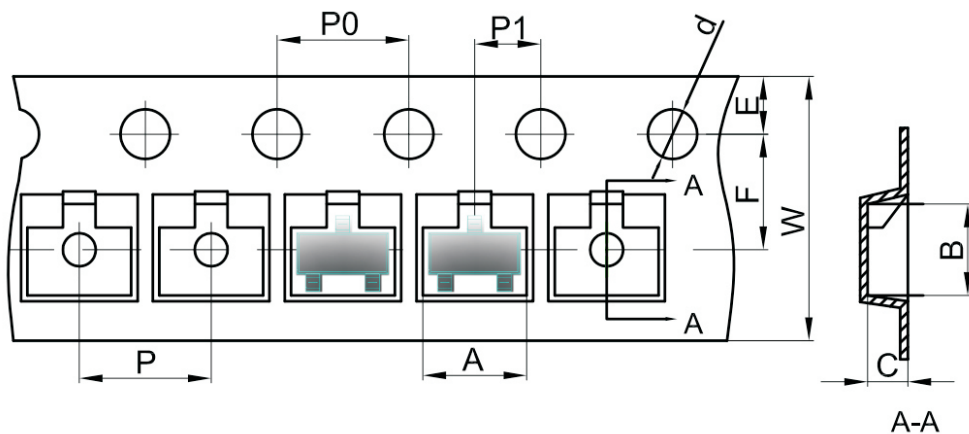


## SOT-23 Packing

1. The method of packaging and dimension are shown as below figure. (Dimension in mm)



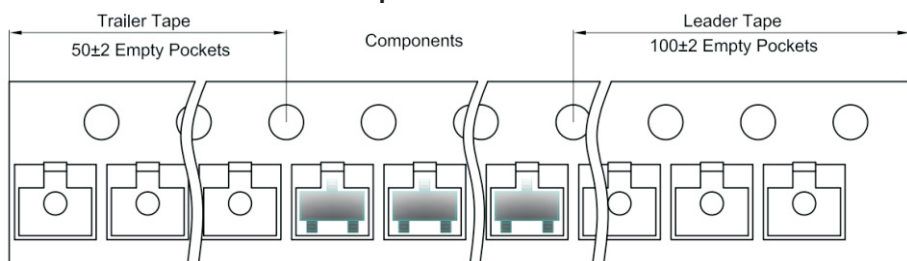
### SOT-23 Embossed Carrier Tape



Dimensions are in millimeter

Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

### SOT-23 Tape Leader and Trailer



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