RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

MMBT4403

PNP Type Bipolar Transistor

Features

- Low profile package
- Ideal for automated placement
- Power Dissipation of 300mW
- High Stability and High Reliability
- RoHS Compliant

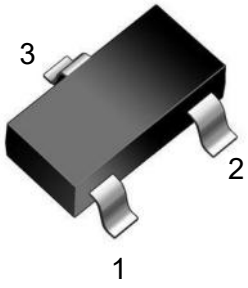
Mechanical Data

- Package: SOT-23
- Lead Finish:Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020

Applications

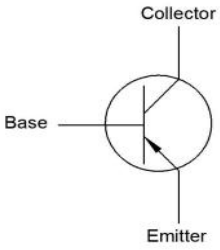
- Amplifying Signal
- Electronic switch
- Oscillating circuit
- Variable resistance

Appearance&Symbol

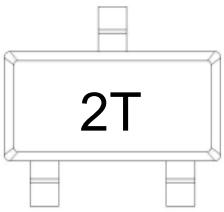


Package：SOT-23

1：Base
2：Emitter
3：Collector



Marking Information



Marking Code：2T

Absolute Maximum Ratings(T=25ºC, RH=45%-75%, unless otherwise noted)

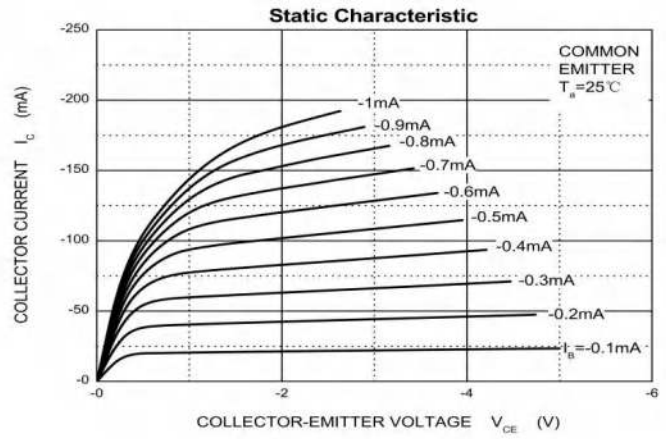
Parameters	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current Continuous	I_C	-600	mA
Collector Power Dissipation	P_C	300	mW
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	500	℃/W
Junction Temperature	T_J	-55 to +150	℃
Junction and Storage Temperature	T_{STG}	-55 to +150	℃

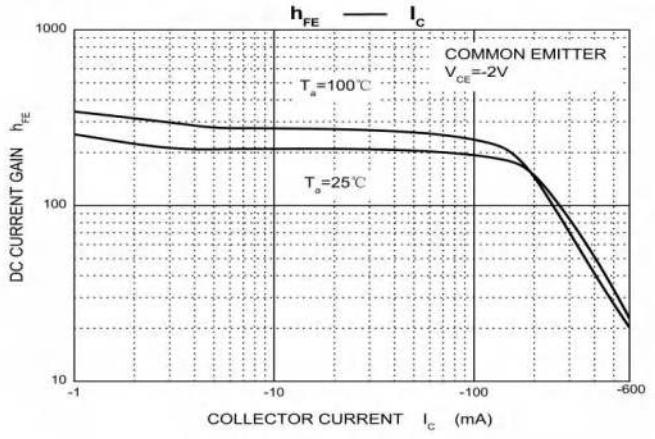
2026-04/114
REV:A

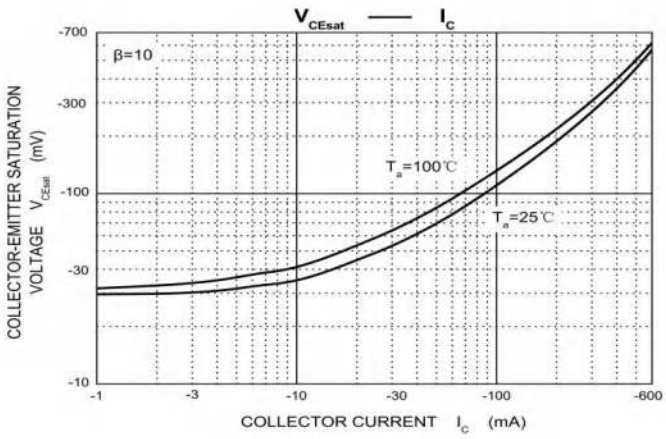
Electrical Characteristics(T=25ºC, RH=45%-75%, unless otherwise noted)

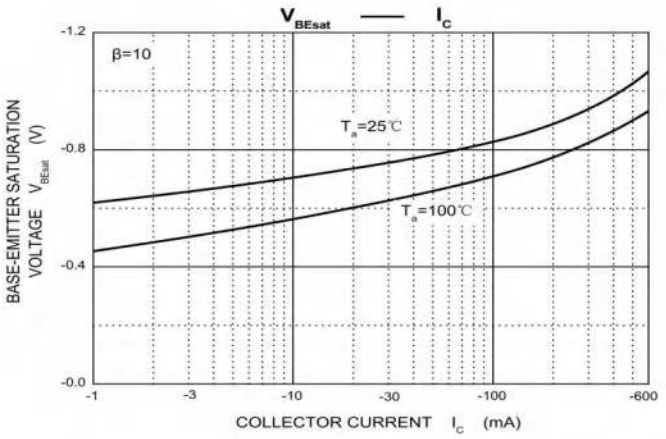
Parameters	Symbol	Test Condition	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-100uA, I_E= 0	-40		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-1mA, I_B=0	-40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-100uA, I_C= 0	-5		V
Collector cut-off current	I_{CBO}	V_{CB}=-35V, I_E=0		-100	nA
Emitter cut-off current	I_{EBO}	V_{EB}=-4V, I_C= 0		-100	nA
Collector cut-off current	I_{CEX}	V_{CE}=-35 V, V_{BE}= -0.4V		-100	nA
DC current gain	$h_{EF(1)}$	V_{CE}=-1V, I_C=-0.1mA	30		
	$h_{EF(2)}$	V_{CE}=-1V, I_C= -1mA	60		
	$h_{EF(3)}$	V_{CE}=-1V, I_C= -10mA	100		
	$h_{EF(4)}$	V_{CE}=-2V, I_C= -150mA	100	300	
	$h_{EF(5)}$	V_{CE}=-2V, I_C= -500mA	20		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-150mA, I_B= -15mA		-0.4	V
		I_C=-500mA, I_B= -50mA		-0.75	V
Base -emitter saturation voltage	$V_{BE(sat)}$	I_C=-150mA, I_B = -15mA		-0.95	V
		I_C=-500mA, I_B = -50mA		-1.3	V
Transition frequency	f_T	V_{CE}=-10V, I_C=-20mA,f=100MHz	200		MHz
Delay time	t_d	V_{CC}=-30V,$V_{BE(off)}$=-0.5V, I_C=-150mA,I_{B1}=-15mA		15	ns
Rise time	t_r			20	ns
Storage time	t_s	V_{CE}=-30V, I_C=-150mA, I_{B1}=I_{B2}=-15mA		225	ns
Fall time	t_f			60	ns

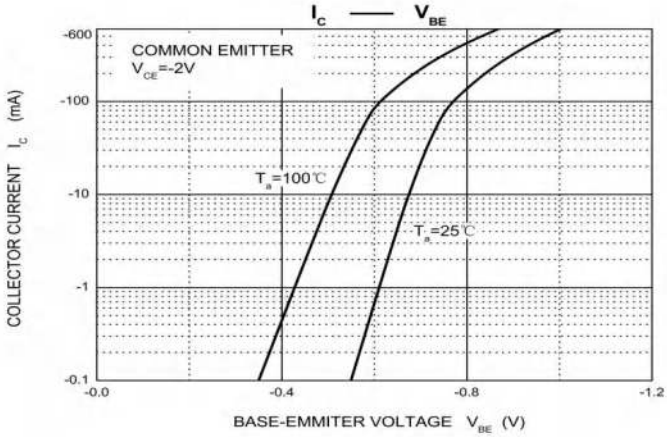
RATING AND CHARACTERISTICS CURVES (MMBT4403)

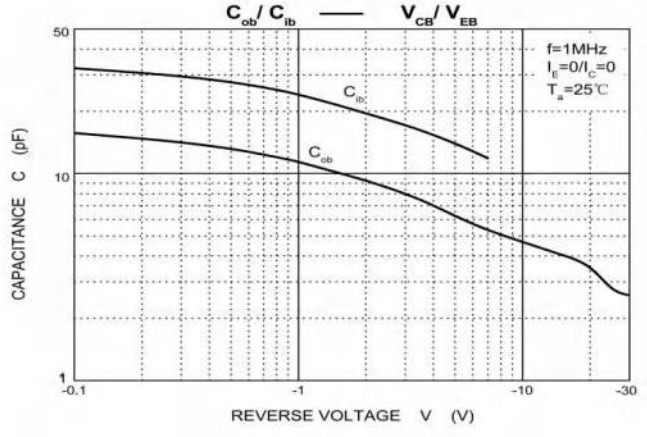


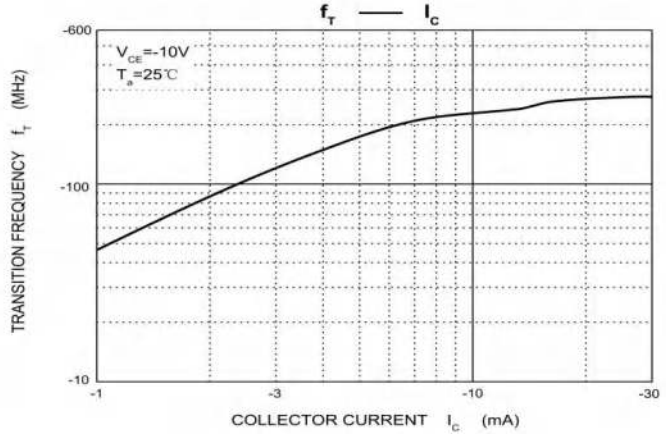


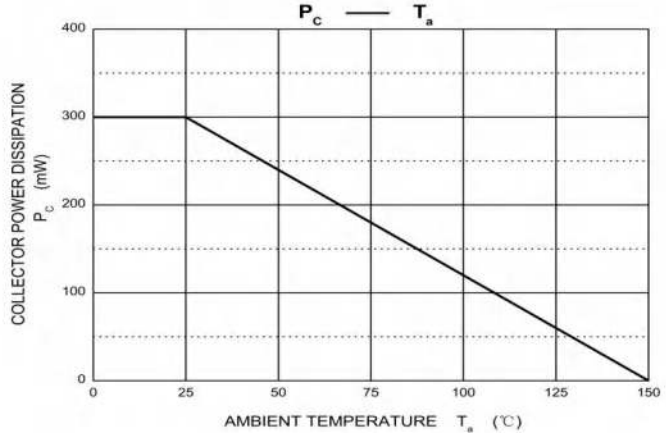






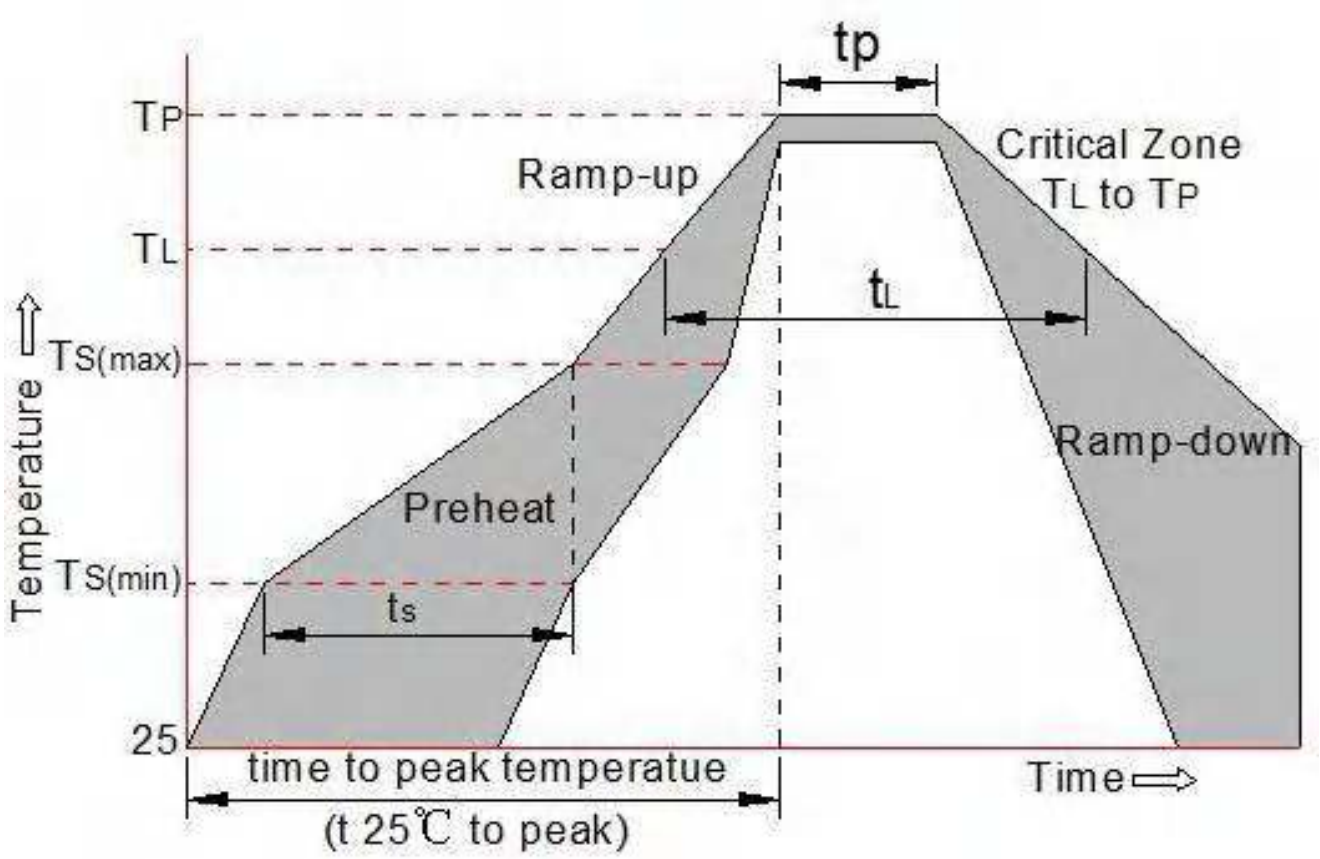




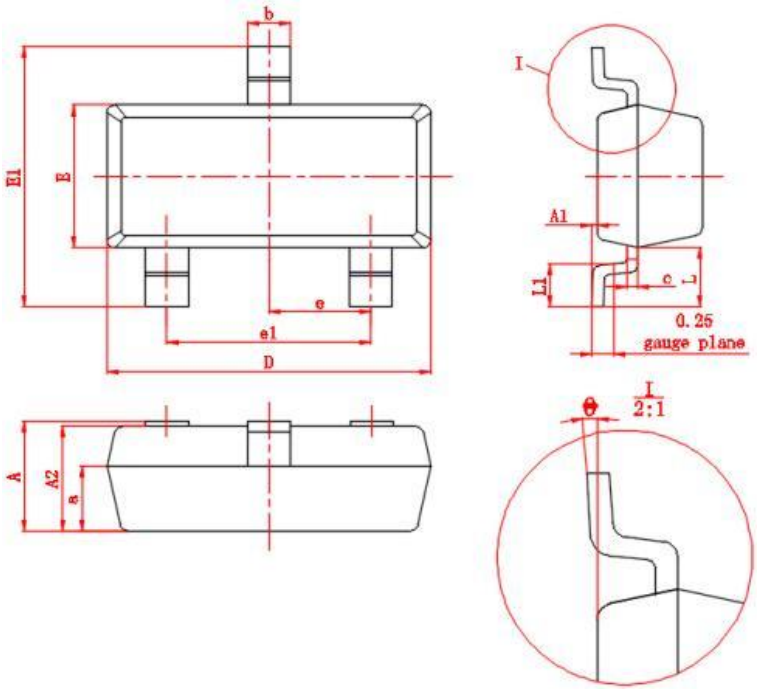


Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

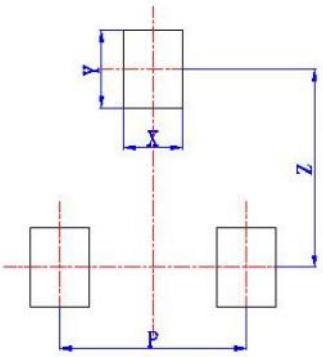


Package mechanical data



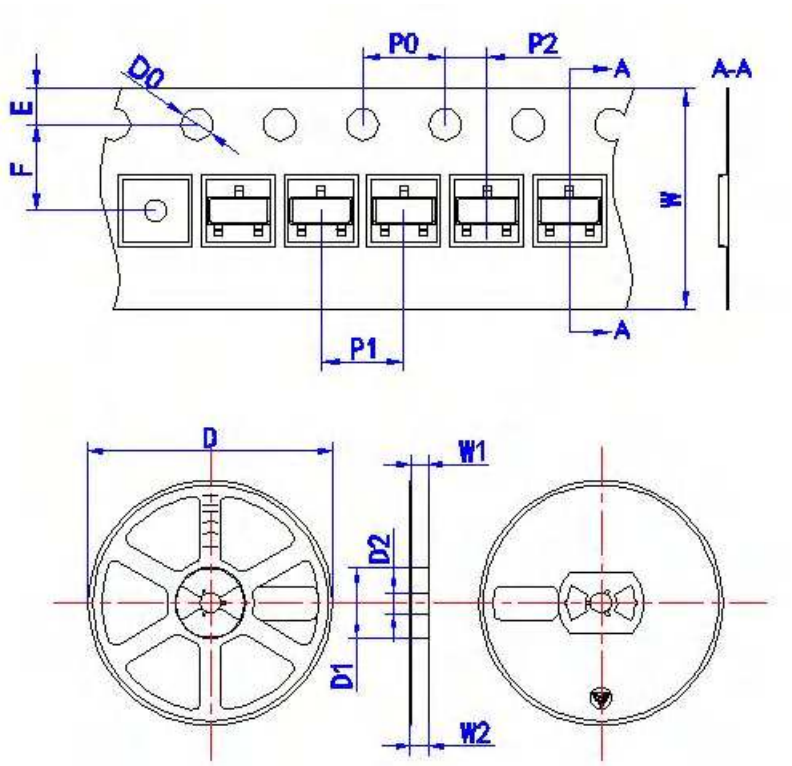
Symbol	Dimension in Millimeters	
	Min	Max
A	0.9	1.15
A1	0	0.1
A2	0.9	1.05
a	(0.6)	
D	2.8	3.0
E	1.2	1.4
E1	2.25	2.55
e	(0.95)	
e1	1.8	2.0
b	0.3	0.5
c	0.08	0.15
L	(0.55)	
L1	0.3	0.5
θ	0°	8°

Suggested Land Pattern



Symbol	Dimension in Millimeters
	Typ
X	(0.6)
Y	(0.8)
Z	(2.02)
P	(1.9)

Tape & reel specification



Symbol	Dimension in Millimeters
Tape	
D0	1.50+0.10/-0.00
E	1.75±0.10
F	3.50±0.10
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.10
W	8.00+0.3/-0.1
Reel	
D	178.0±2.00
D1	54.40±1.00
D2	13.00±1.00
W1	9.50±1.00
W2	12.30±1.00

REEL PACK

PACKAGE	PACKING CODE	REEL (EA)	COMPONENT SPACE(mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SOT-23/-3L	-T	3,000	---	---	178	438*438*220	180,000	7.93

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