

# MMBT4403

## MMBT4403 SOT-23 Plastic-Encapsulate Switching Transistors (PNP)

### General description

SOT-23 Plastic-Encapsulate Switching Transistors (PNP)

### FEATURES

- Power Dissipation of 300mW
- High Stability and High Reliability
- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0



Marking:2T

### Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Parameters	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CB0</sub>	-40	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-40	V
Emitter -Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current-Continuous	I <sub>c</sub>	-600	mA
Collector Power Dissipation	P <sub>c</sub>	300	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55-+150	°C
Thermal resistance From junction to ambient	R <sub>θJA</sub>	417	°C/W

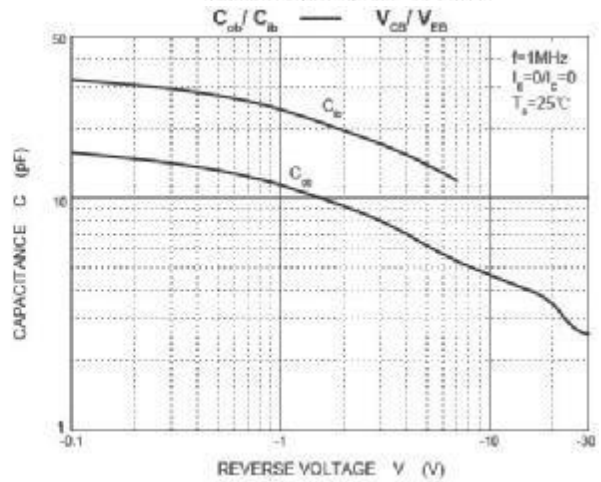
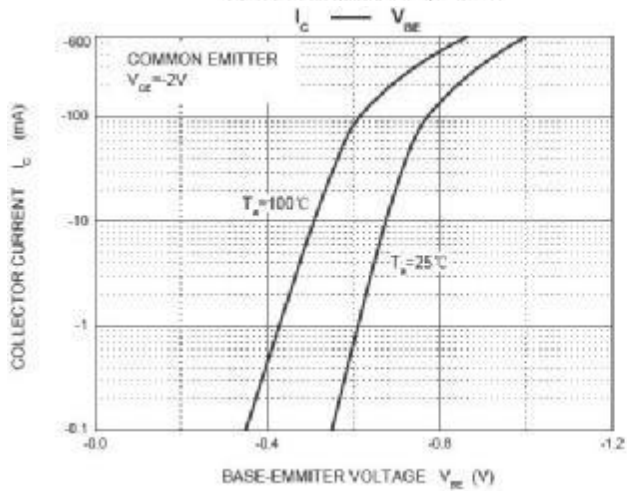
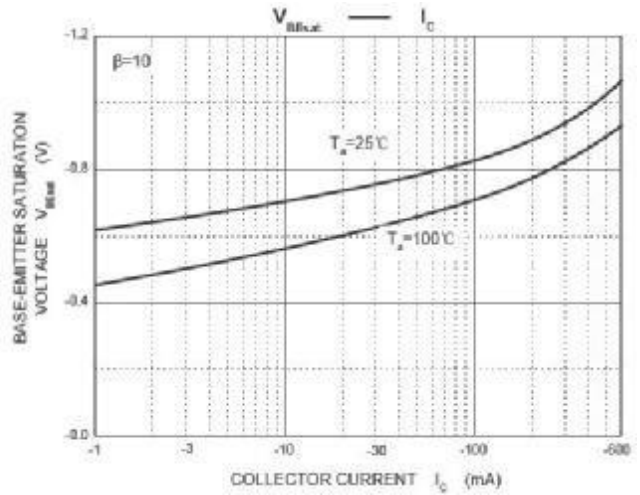
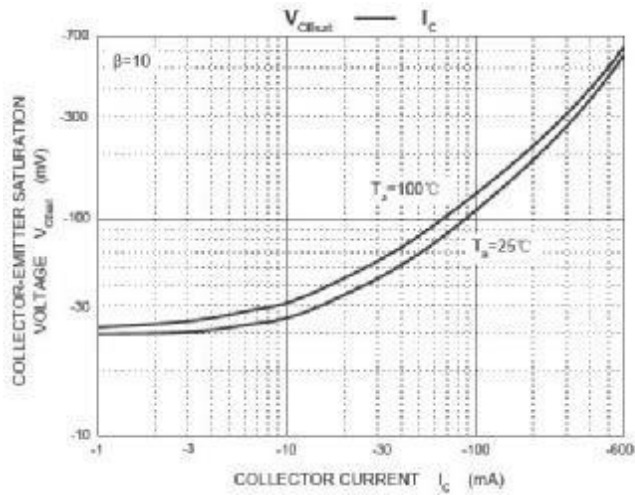
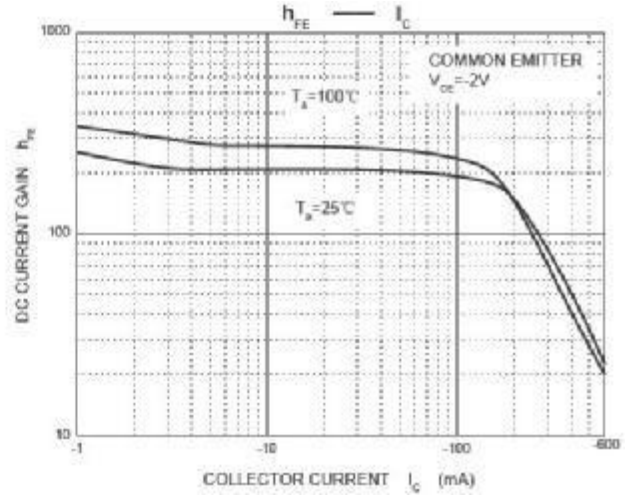
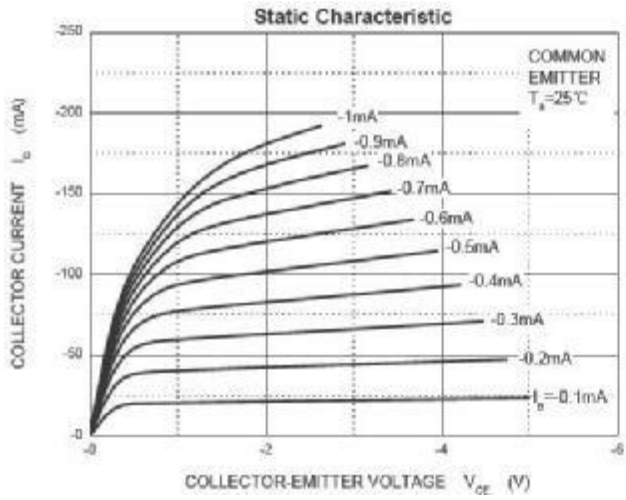
### Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified).

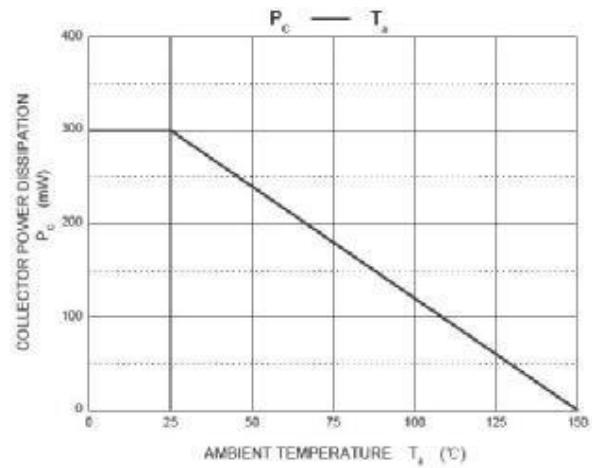
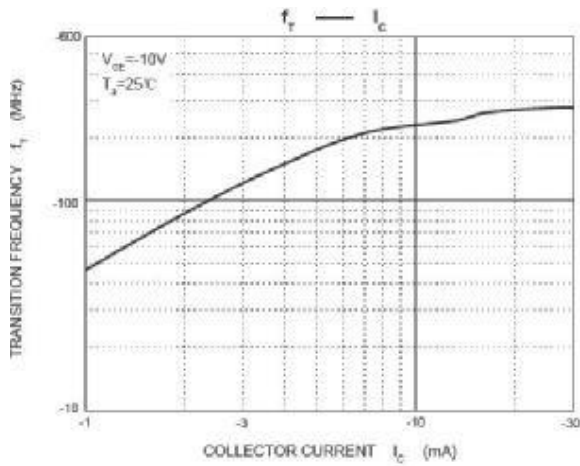
Parameter	Symbols	Test Condition	Limits		Unit
			Min	Max	
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =-100uA, I <sub>E</sub> =0	-40		V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-1mA, I <sub>B</sub> =0	-40		V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =-100uA, 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		-100	nA
Collector cut-off current	I <sub>CEX</sub>	V <sub>CE</sub> =-35V, V <sub>EB(off)</sub> =-0.4V		-100	nA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =-4V, I <sub>C</sub> =0		-100	nA
DC current gain	h <sub>FE</sub> (1)	V <sub>CE</sub> =-1V, I <sub>C</sub> =-0.1mA	30		
	h <sub>FE</sub> (2)	V <sub>CE</sub> =-1V, I <sub>C</sub> =-1mA	60		
	h <sub>FE</sub> (3)	V <sub>CE</sub> =-1V, I <sub>C</sub> =-10mA	100		
	h <sub>FE</sub> (4)	V <sub>CE</sub> =-2V, I <sub>C</sub> =-150mA	100	300	
	h <sub>FE</sub> (5)	V <sub>CE</sub> =-2V, I <sub>C</sub> =-500mA	20		
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-150mA, I <sub>B</sub> =-15mA		-0.40	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		-1.30	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, I <sub>C</sub> =-150mA, I <sub>B1</sub> =-15mA		15	nS
Rise time	t <sub>r</sub>			20	nS
Storage time	t <sub>s</sub>			225	nS
Fall time	t <sub>f</sub>	V <sub>CC</sub> =-30V, I <sub>C</sub> =-150mA, I <sub>B1</sub> =I <sub>B2</sub> =-15mA		60	nS



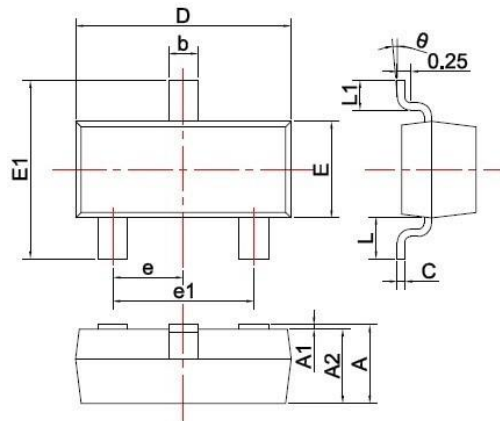
# MMBT4403

## RATING AND CHARACTERISTIC CURVES





## SOT-23 PACKAGE OUTLINE Plastic surface mounted package

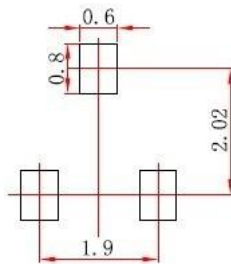


SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

Unit: mm

Precautions: PCB Design

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

## **Important Notice and Disclaimer**

DOESHARE has used reasonable care in preparing the information included in this document, but DOESHARE does not warrant that such information is error free. DOESHARE assumes no liability whatsoever for any damages incurred by you resulting from errors in or omissions from the information included herein.

DOESHARE no warranty, representation or guarantee regarding the documents, circuits and products specification, DOESHARE reservation rights to make changes for any documents, products, circuits and specifications at any time without notice.

Purchasers are solely responsible for the choice, selection and use of the DOESHARE products and services described herein, and DOESHARE assumes no liability whatsoever relating to the choice, selection or use of the products and services described herein.

No license, express or implied, by implication or otherwise under any intellectual property rights of DOESHARE.

Resale of DOESHARE products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by DOESHARE for the DOESHARE product or service described herein and shall not create or extend in any manner whatsoever, any liability of DOESHARE.

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Bipolar Transistors - BJT category](#):*

*Click to view products by [Doeshare manufacturer](#):*

Other Similar products are found below :

[619691C](#) [MCH4017-TL-H](#) [MMBT-2369-TR](#) [BC546/116](#) [BC557/116](#) [BSW67A](#) [NJVMJD148T4G](#) [NTE123AP-10](#) [NTE153MCP](#) [NTE16](#)  
[NTE195A](#) [NTE92](#) [C4460](#) [2N4401-A](#) [2N6728](#) [2SA1419T-TD-H](#) [2SA2126-E](#) [2SB1204S-TL-E](#) [2SC2712S-GR,LF](#) [2SC5488A-TL-H](#)  
[2SD2150T100R](#) [SP000011176](#) [2N2907A](#) [2N3904-NS](#) [2N5769](#) [2SC2412KT146S](#) [2SD1816S-TL-E](#) [CPH6501-TL-E](#) [MCH4021-TL-E](#)  
[MJE340](#) [US6T6TR](#) [NJL0281DG](#) [732314D](#) [CPH3121-TL-E](#) [CPH6021-TL-H](#) [873787E](#) [IMZ2AT108](#) [UMX21NTR](#) [MCH6102-TL-E](#)  
[NJL0302DG](#) [2N3583](#) [30A02MH-TL-E](#) [TN6717A](#) [NSV40301MZ4T1G](#) [NTE13](#) [NTE26](#) [NTE282](#) [NTE323](#) [NTE350](#) [NTE81](#)