

MMBT5401

DATASHEET

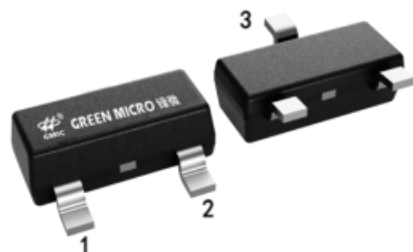
Specification Revision History:

Version	Date	Description
V1.0	2021/07	New
V1.1	2023/08	Modify Ordering Information
V1.2	2024/02	Modify Ordering Information
V1.3	2025/05	Add application precautions and overall typesetting.

Features

- ※PNP Transistors
- ※High Voltage Transistors
- ※Pb-Free Packages are Available

Simplified Outline



- 1.Base
- 2.Emitter
- 3.Collector

SOT-23

Ordering Information

Product Model	Package Type	Marking	Packing	Packing Qty
MMBT5401-GM	SOT-23	2L	REEL	3000PCS/REEL

Absolute Maximum Ratings $T_a = 25\text{ }^{\circ}\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	-160	V
Collector-emitter voltage	V_{CE0}	-150	V
Emitter-base voltage	V_{EB0}	-5	V
Collector current-continuous	I_c	-0.6	A
Collector Power Dissipation	P_c	300	mW
Junction and storage temperature	T_J, T_{stg}	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics $T_a = 25^\circ\text{C}$

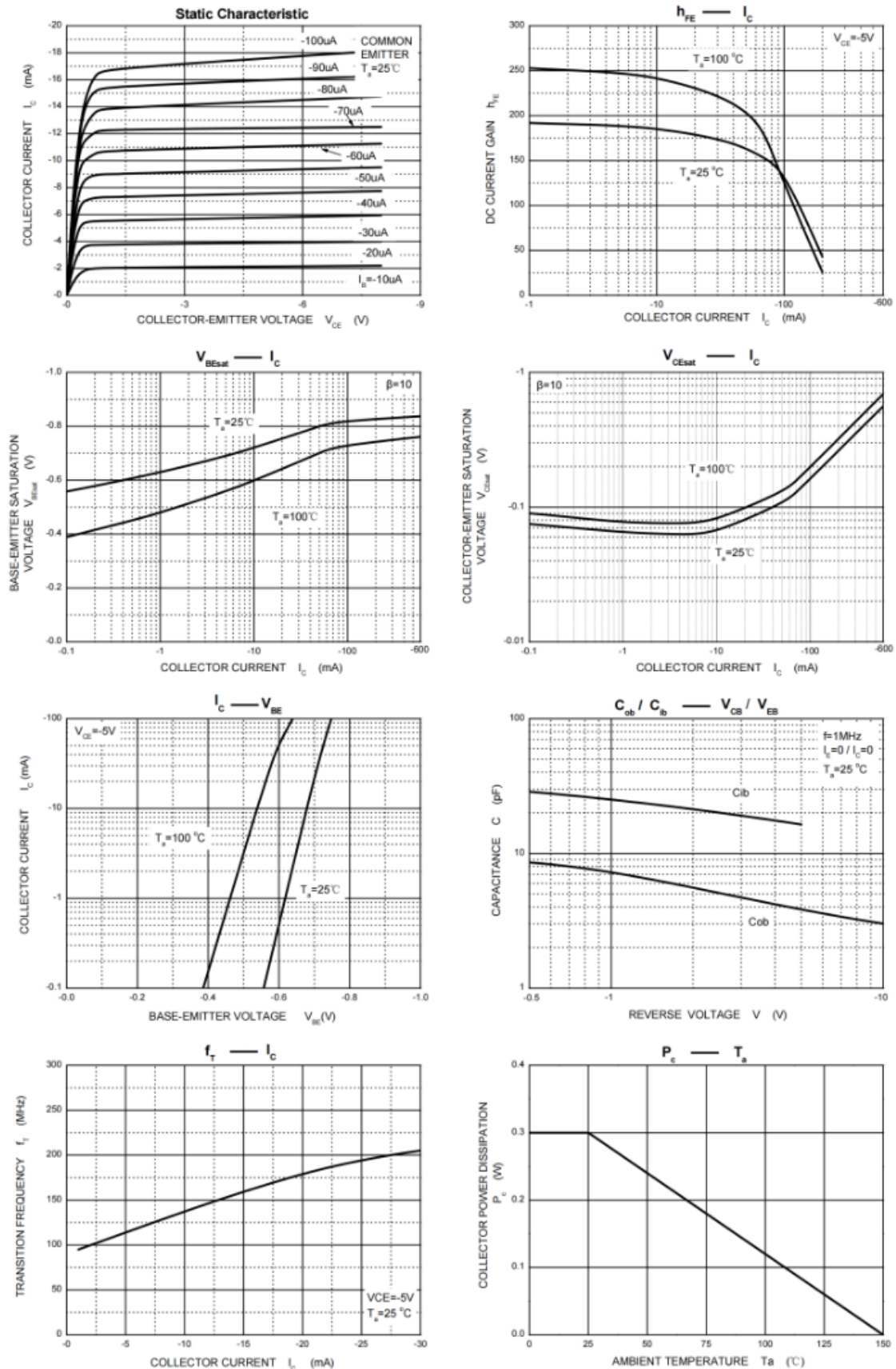
Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V_{CBO}	$I_C = -100\ \mu\text{A}, I_E = 0$	-160			V
Collector-emitter breakdown voltage *	V_{CEO}	$I_C = -1.0\ \text{mA}, I_B = 0$	-150			V
Emitter-base breakdown voltage	V_{EBO}	$I_E = -10\ \mu\text{A}, I_C = 0$	-5			V
Collector cutoff current	I_{CBO}	$V_{CB} = -120\ \text{V}, I_E = 0$			-0.1	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -4.0\ \text{V}, I_C = 0$			-0.1	μA
DC current gain *	h_{FE}	$I_C = -1.0\ \text{mA}, V_{CE} = -5\ \text{V}$	80			
		$I_C = -10\ \text{mA}, V_{CE} = -5\ \text{V}$	100		300	
		$I_C = -50\ \text{mA}, V_{CE} = -5\ \text{V}$	50			
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = -50\ \text{mA}, I_B = -5.0\ \text{mA}$			-0.5	V
Base-emitter saturation voltage *	$V_{BE(sat)}$	$I_C = -50\ \text{mA}, I_B = -5.0\ \text{mA}$			-1.0	V
Transistor frequency	f_T	$V_{CE} = -5\ \text{V}, I_C = -10\ \text{mA}, f = 30\ \text{MHz}$	100			MHz

* Pulse Test: Pulse Width = 300 μs , Duty Cycle=2.0%.

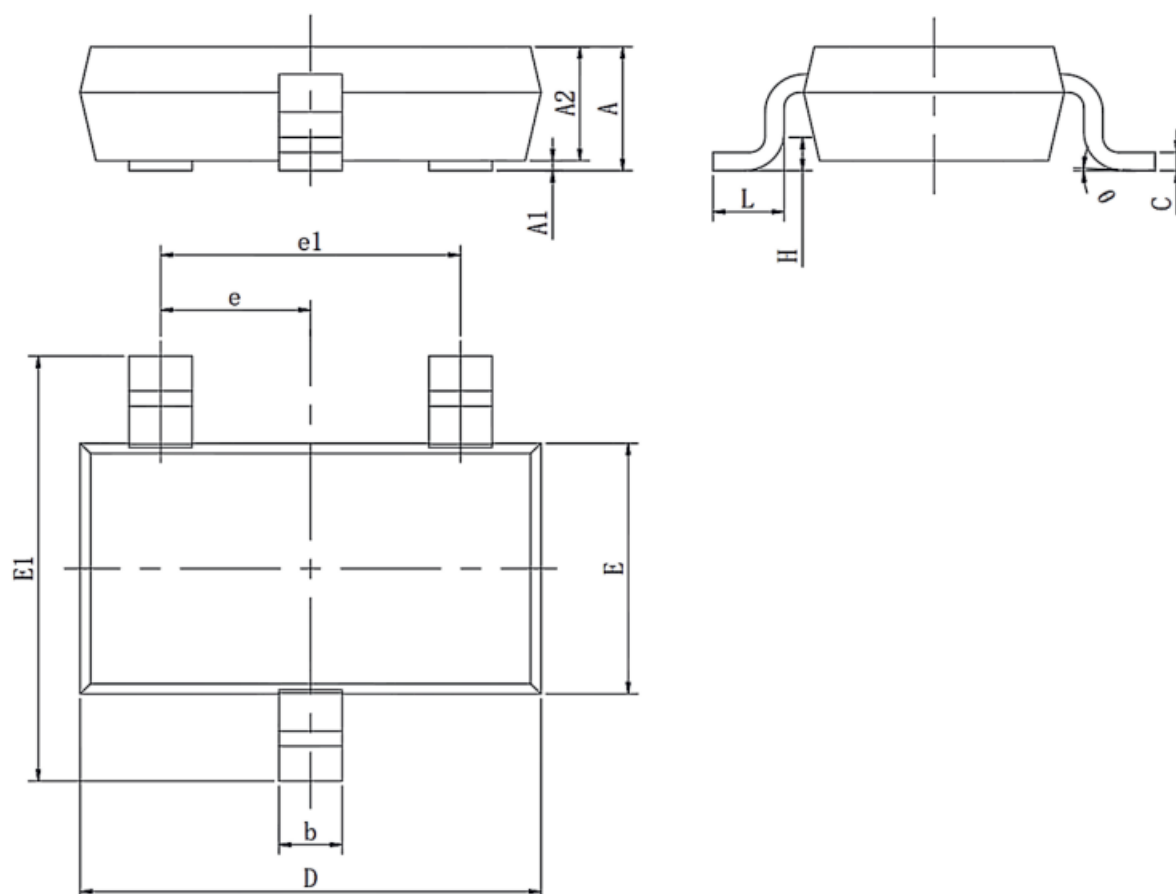
Classification of $h_{FE}(2)$

Type	MMBT5401
Range	100-300

Typical Characteristics



Outline Dimensions

SOT-23
Unit : mm


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	0.200	0.003	0.008
D	2.800	3.020	0.110	0.119
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.95 (BSC)		0.037(BSC)	
e1	1.90 (BSC)		0.075(BSC)	
L	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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