



# MMBT5401

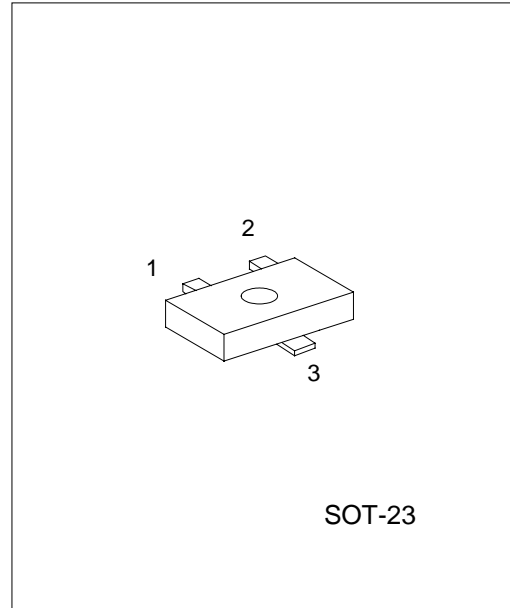
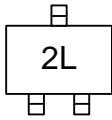
## PNP EPITAXIAL SILICON TRANSISTOR

### HIGH VOLTAGE SWITCHING TRANSISTOR

■ FEATURES

- \*Collector-Emitter Voltage:  $V_{CE0}=-150V$
- \*Collector Dissipation:  $P_c(max)=350mW$
- \*High current gain

■ MARKING



\*Pb-free plating product number:MMBT5401L

■ PIN CONFIGURATION

PIN NO.	PIN NAME
1	Emitter
2	Base
3	Collector

[www.DataSheet4U.com](http://www.DataSheet4U.com)

■ ORDERING INFORMATION

Order Number		Package	Packing
Normal	Lead free		
MMBT5401-AE3-R	MMBT5401L-AE3-R	SOT-23	Tape Reel

# MMBT5401

## PNP EPITAXIAL SILICON TRANSISTOR

### ■ ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector -Base Voltage	V <sub>CB0</sub>	-160	V
Collector -Emitter Voltage	V <sub>CE0</sub>	-150	V
Emitter -Base Voltage	V <sub>EBO</sub>	-5	V
DC Collector Current	I <sub>C</sub>	-600	mA
Power Dissipation	P <sub>D</sub>	350	mW
Operating Temperature	T <sub>J</sub>	+150	°C
Storage Temperature	T <sub>STG</sub>	-40 ~ +150	°C

### ■ ELECTRICAL CHARACTERISTICS (Ta= 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	V <sub>CB0</sub>	I <sub>C</sub> =-100μA, I <sub>E</sub> =0	-160			V
Collector-Emitter Breakdown Voltage	V <sub>CE0</sub>	I <sub>C</sub> =-1mA, I <sub>B</sub> =0	-150			V
Emitter-Base Breakdown Voltage	V <sub>EBO</sub>	I <sub>E</sub> =-10μA, I <sub>C</sub> =0	-6			V
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> =-120V, I <sub>E</sub> =0			-50	nA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>BE</sub> =-3V, I <sub>C</sub> =0			-50	nA
DC Current Gain(note)	h <sub>FE</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-1mA	80			
		V <sub>CE</sub> =-5V, I <sub>C</sub> =-10mA	80		400	
		V <sub>CE</sub> =-5V, I <sub>C</sub> =-50mA	80			
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1mA I <sub>C</sub> =50mA, I <sub>B</sub> =5mA			-0.2 -0.5	V
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-10mA, I <sub>B</sub> =-1mA I <sub>C</sub> =-50mA, I <sub>B</sub> =-5mA			1 1	V
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-10mA, f=100MHz	100		400	MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V, I <sub>E</sub> =0, f=1MHz			6.0	pF
Noise Figure	N <sub>F</sub>	I <sub>C</sub> =-0.25mA, V <sub>CE</sub> =-5V R <sub>S</sub> =1kΩ, f=10Hz ~ 15.7kHz			8	dB

Note: Pulse test: PW<300μs, Duty Cycle<2%

### ■ CLASSIFICATION OF h<sub>FE</sub>

RANK	A	B	C
RANGE	80-170	150-240	200-400

## ■ TYPICAL CHARACTERISTICS

Fig.1 Collector output Capacitance

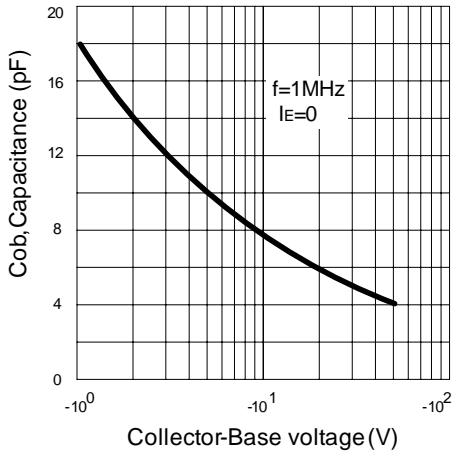


Fig.2 DC current Gain

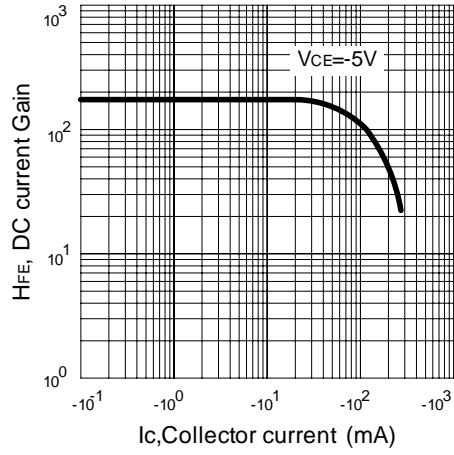


Fig.3 Base-Emitter on Voltage

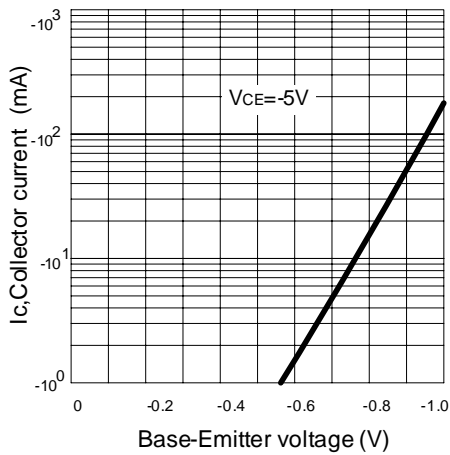


Fig.4 Saturation voltage

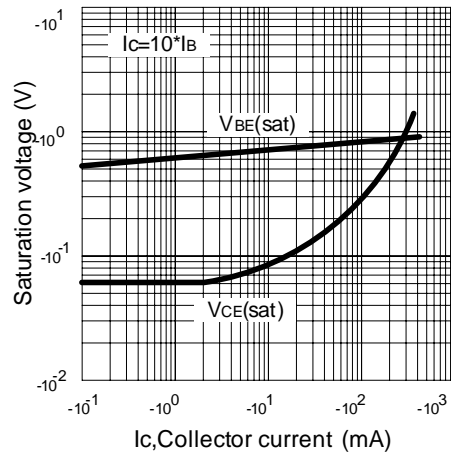
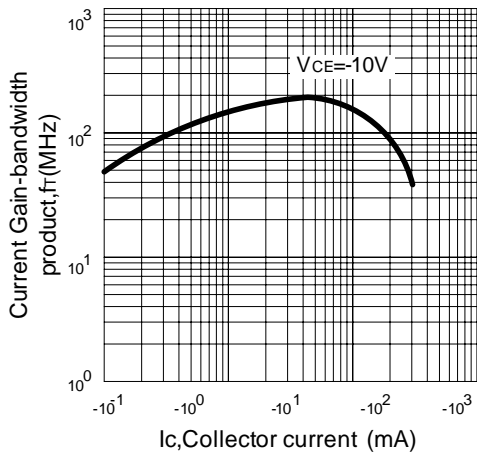


Fig.5 Current gain -bandwidth product



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