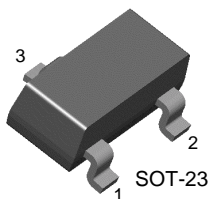


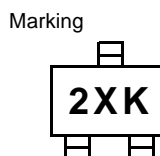
# MMBT4401K

## PNP Epitaxial Silicon Transistor

### Switching Transistor



1. Base 2. Emitter 3. Collector



### Absolute Maximum Ratings T<sub>a</sub> = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	40	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current	600	mA
P <sub>C</sub>	Collector Dissipation	350	mW
T <sub>STG</sub>	Storage Temperature	150	°C

### Electrical Characteristics T<sub>a</sub> = 25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
BV <sub>CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 100μA, I <sub>E</sub> = 0	60		V
BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage *	I <sub>C</sub> = 1.0mA, I <sub>B</sub> = 0	40		V
BV <sub>EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 100μA, I <sub>C</sub> = 0	6		V
I <sub>BEV</sub>	Base Cut-off Current	V <sub>CE</sub> = 35V, V <sub>EB</sub> = 0.4V		100	nA
I <sub>CEX</sub>	Collector Cut-off Current	V <sub>CE</sub> = 35V, V <sub>EB</sub> = 0.4V		100	nA
h <sub>FE</sub>	DC Current Gain *	V <sub>CE</sub> = 1V, I <sub>C</sub> = 0.1mA V <sub>CE</sub> = 1V, I <sub>C</sub> = 1mA V <sub>CE</sub> = 1V, I <sub>C</sub> = 10mA V <sub>CE</sub> = 1V, I <sub>C</sub> = 150mA V <sub>CE</sub> = 2V, I <sub>C</sub> = 500mA	20 40 80 100 40	300	
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage *	I <sub>C</sub> = 150mA, I <sub>B</sub> = 15mA I <sub>C</sub> = 500mA, I <sub>B</sub> = 50mA		0.4 0.75	V V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage *	I <sub>C</sub> = 150mA, I <sub>B</sub> = 15mA I <sub>C</sub> = 500mA, I <sub>B</sub> = 50mA	0.75	0.95 1.2	V V
f <sub>T</sub>	Current Gain Bandwidth Product	I <sub>C</sub> = 20mA, V <sub>CE</sub> = 10V, f = 100MHz	250		MHz
C <sub>ob</sub>	Output Capacitance	V <sub>CB</sub> = 5V, I <sub>E</sub> = 0, f = 100KHz		6.5	pF
t <sub>ON</sub>	Turn On Time	V <sub>CC</sub> = 30V, V <sub>BE</sub> = 2V I <sub>C</sub> = 150mA, I <sub>B1</sub> = 15mA		35	ns
t <sub>OFF</sub>	Turn Off Time	V <sub>CC</sub> = 30V, I <sub>C</sub> = 150mA I <sub>B1</sub> = I <sub>B2</sub> = 15mA		255	ns

\* Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%

## Typical Performance Characteristics

Figure 1. DC current Gain

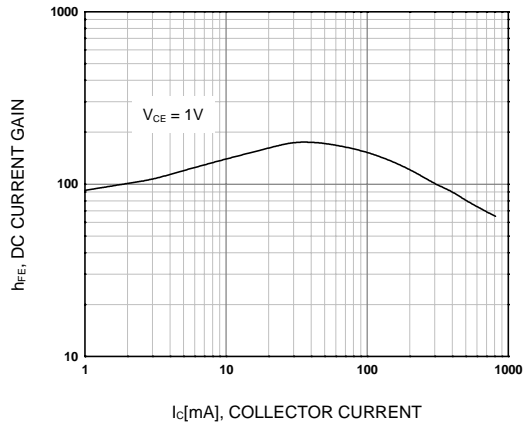


Figure 2. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

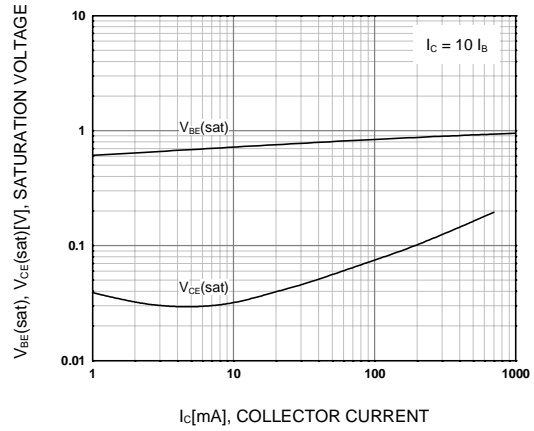


Figure 3. Collector-Base Capacitance

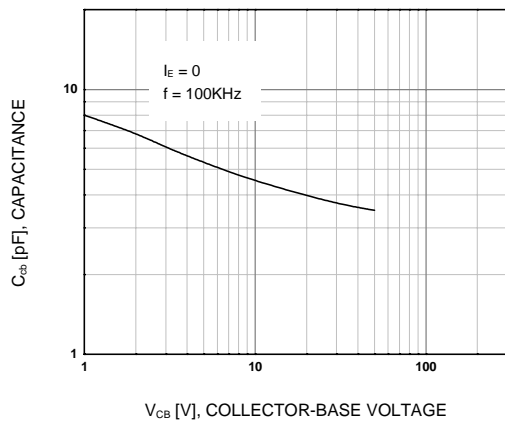
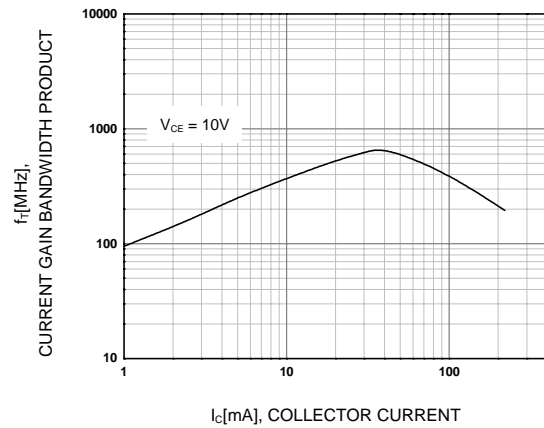
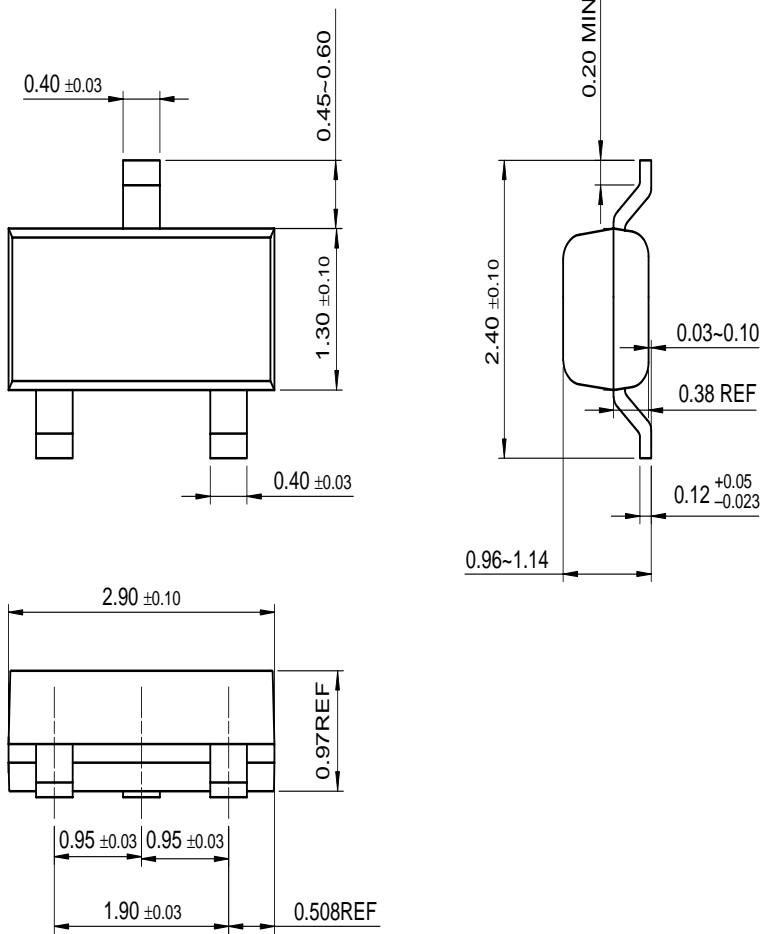


Figure 4. Current Gain Bandwidth Product



Mechanical Dimensions

SOT-23



Dimensions in Millimeters

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FACT Quiet Series™		OCXPro™	RapidConnect™	UHC™
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