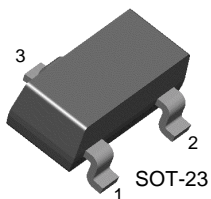


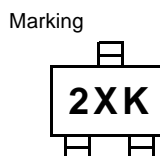
# MMBT4401K

## PNP Epitaxial Silicon Transistor

### Switching Transistor



1. Base 2. Emitter 3. Collector



### Absolute Maximum Ratings $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{CEO}$	Collector-Emitter Voltage	40	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current	600	mA
$P_C$	Collector Dissipation	350	mW
$T_{STG}$	Storage Temperature	150	$^\circ\text{C}$

### Electrical Characteristics $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 100\mu\text{A}, I_E = 0$	60		V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage *	$I_C = 1.0\text{mA}, I_B = 0$	40		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100\mu\text{A}, I_C = 0$	6		V
$I_{BEV}$	Base Cut-off Current	$V_{CE} = 35\text{V}, V_{EB} = 0.4\text{V}$		100	nA
$I_{CEX}$	Collector Cut-off Current	$V_{CE} = 35\text{V}, V_{EB} = 0.4\text{V}$		100	nA
$h_{FE}$	DC Current Gain *	$V_{CE} = 1\text{V}, I_C = 0.1\text{mA}$ $V_{CE} = 1\text{V}, I_C = 1\text{mA}$ $V_{CE} = 1\text{V}, I_C = 10\text{mA}$ $V_{CE} = 1\text{V}, I_C = 150\text{mA}$ $V_{CE} = 2\text{V}, I_C = 500\text{mA}$	20 40 80 100 40	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage *	$I_C = 150\text{mA}, I_B = 15\text{mA}$ $I_C = 500\text{mA}, I_B = 50\text{mA}$		0.4 0.75	V V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage *	$I_C = 150\text{mA}, I_B = 15\text{mA}$ $I_C = 500\text{mA}, I_B = 50\text{mA}$	0.75	0.95 1.2	V V
$f_T$	Current Gain Bandwidth Product	$I_C = 20\text{mA}, V_{CE} = 10\text{V}, f = 100\text{MHz}$	250		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = 5\text{V}, I_E = 0, f = 100\text{KHz}$		6.5	pF
$t_{ON}$	Turn On Time	$V_{CC} = 30\text{V}, V_{BE} = 2\text{V}$ $I_C = 150\text{mA}, I_{B1} = 15\text{mA}$		35	ns
$t_{OFF}$	Turn Off Time	$V_{CC} = 30\text{V}, I_C = 150\text{mA}$ $I_{B1} = I_{B2} = 15\text{mA}$		255	ns

\* Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

## Typical Performance Characteristics

Figure 1. DC current Gain

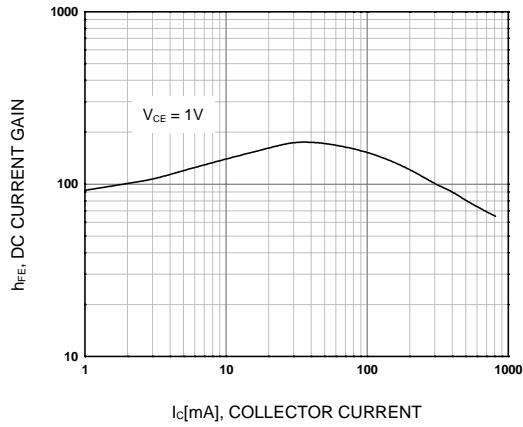


Figure 2. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

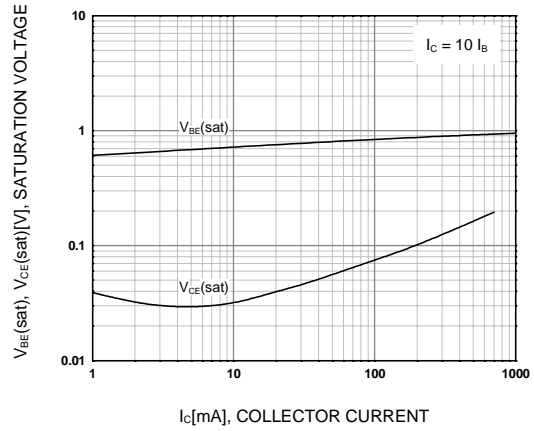


Figure 3. Collector-Base Capacitance

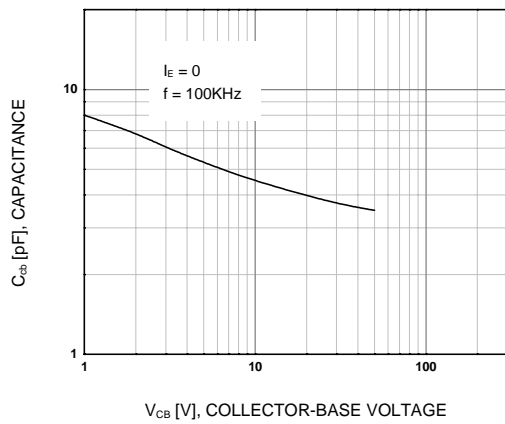
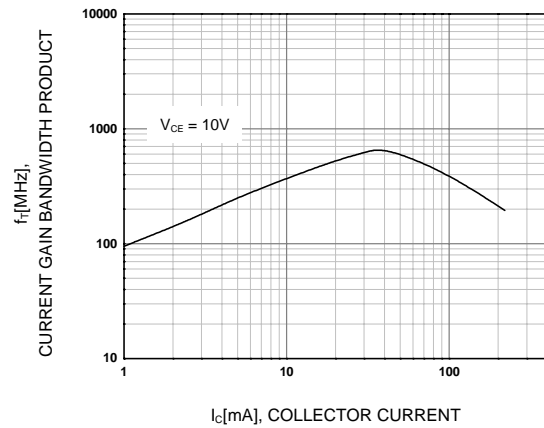
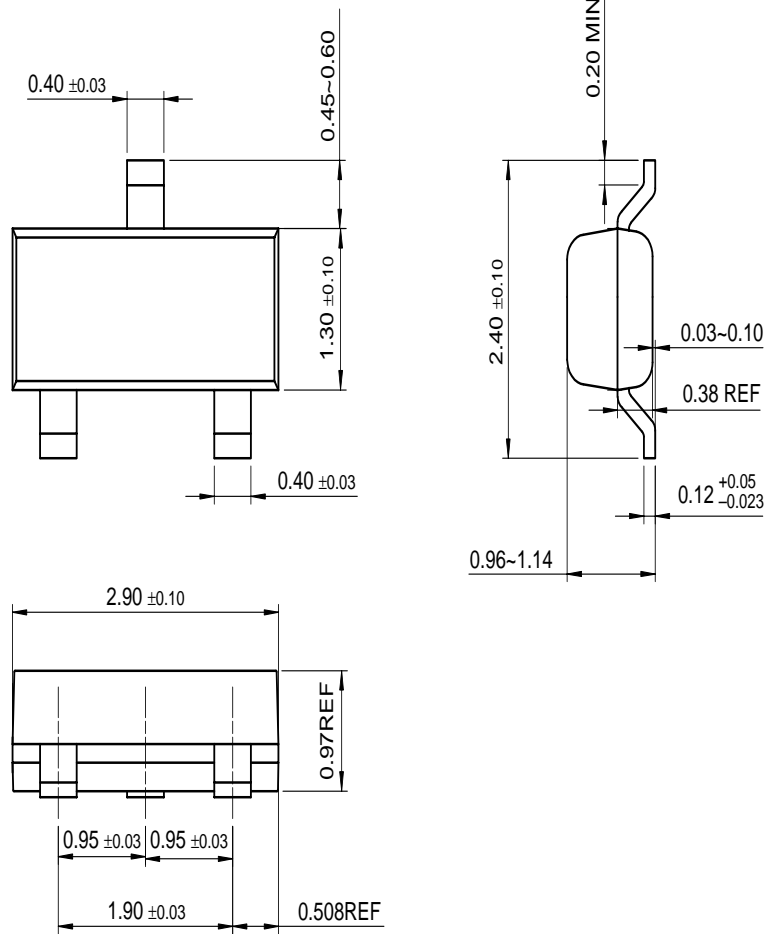


Figure 4. Current Gain Bandwidth Product



Mechanical Dimensions

SOT-23



Dimensions in Millimeters

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FACT Quiet Series™		OCXPro™	RapidConnect™	UHC™
Across the board. Around the world.™		OPTOLOGIC®	μSerDes™	UltraFET®
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