

# NPN Silicon Epitaxial Planar Transistor

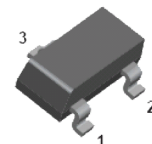
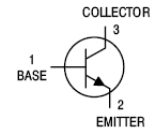


## Features:

- Epitaxial planar die construction
- Complementary PNP type available: MMBT4403
- Ideal for medium power amplification and switching

## Applications:

- General purpose application, switching application



SOT-23

## Maximum Rating @ T<sub>A</sub> = 25°C unless otherwise specified

Parameter	Symbol	Value	Units
Collector-Base Voltage	V <sub>CB0</sub>	60	V
Collector-Emitter Voltage	V <sub>CEO</sub>	40	
Emitter-Base Voltage	V <sub>EBO</sub>	6	
Collector Current -Continuous	I <sub>C</sub>	600	mA
Collector Power Dissipation	P <sub>C</sub>	350	mW
Junction and Storage Temperature	T <sub>j</sub> , T <sub>stg</sub>	-55 to +150	°C

## Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

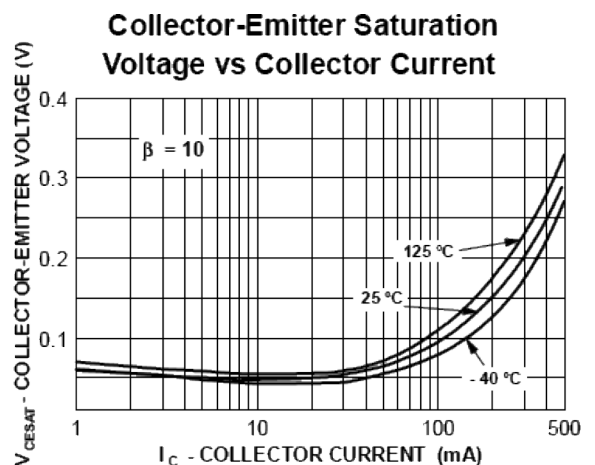
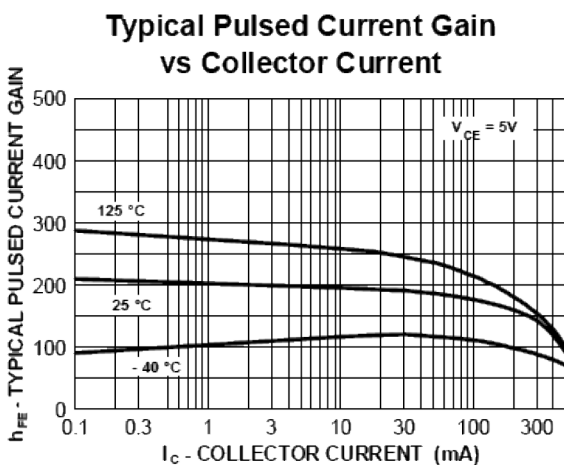
Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 100μA, I <sub>E</sub> = 0	60			V
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 1mA, I <sub>B</sub> = 0	40			
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 100μA, I <sub>C</sub> = 0	6			

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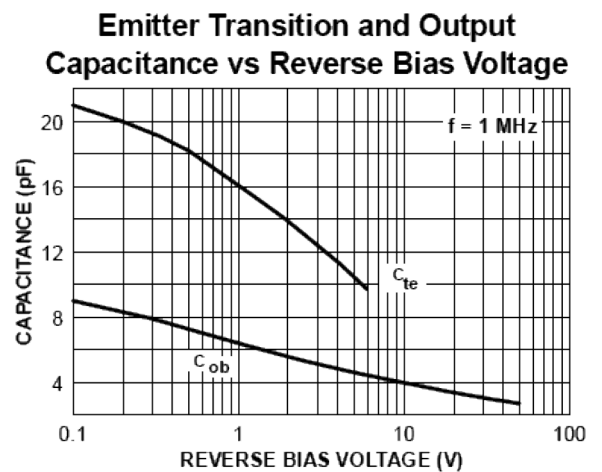
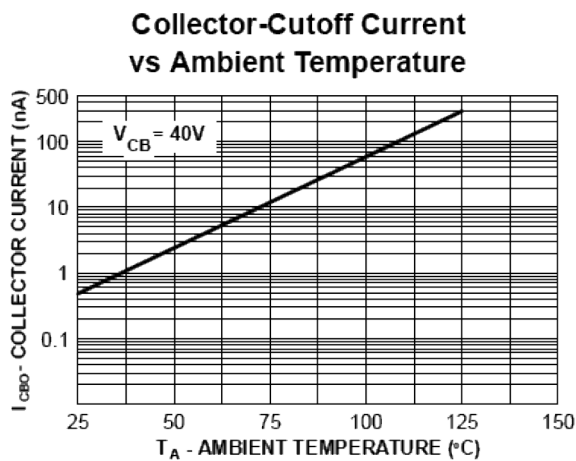
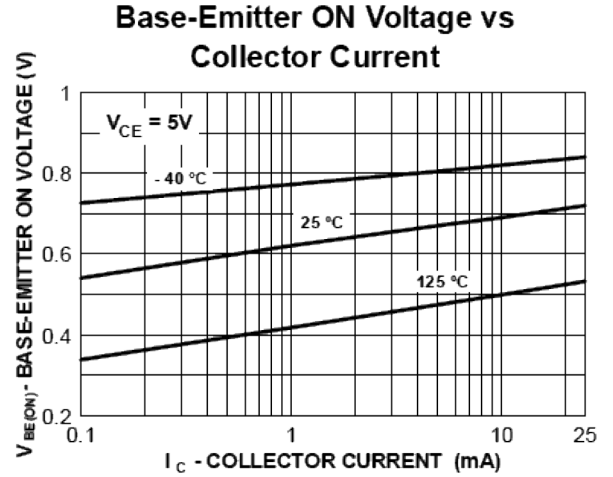
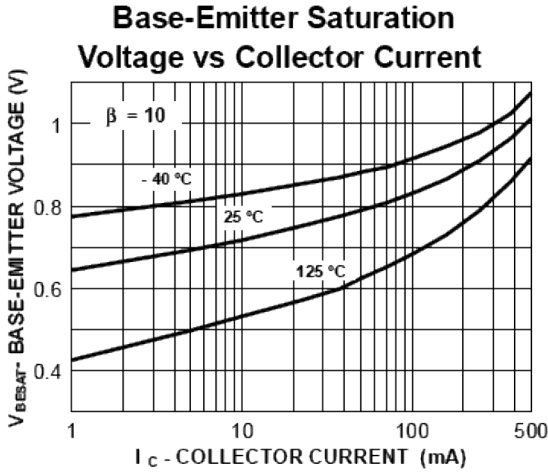


Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Collector Cut-Off Current	$I_{CEX}$	$V_{CE} = 35V, V_{EB} = 0.4V$			0.1	$\mu A$
Base Cut-Off Current	$I_{BL}$	$V_{CE} = 35V, V_{EB} = 0.4V$				
DC Current Gain	$h_{FE}$	$V_{CE} = 1V, I_C = 0.1mA$	20		300	
		$V_{CE} = 1V, I_C = 1mA$	40			
		$V_{CE} = 1V, I_C = 10mA$	80			
		$V_{CE} = 1V, I_C = 150mA$	100			
		$V_{CE} = 2V, I_C = 500mA$	40			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 150mA, I_B = 15mA$ $I_C = 500mA, I_B = 50mA$			0.4 0.75	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 150mA, I_B = 15mA$ $I_C = 500mA, I_B = 50mA$		0.75	0.95 1.2	
Transition Frequency	$f_T$	$V_{CE} = 10V, I_C = 20mA$ $f = 100MHz$	250			MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 5V, I_E = 0,$ $f = 1MHz$			6.5	pF

## Typical Characteristics @ $T_A = 25^\circ C$ unless otherwise specified



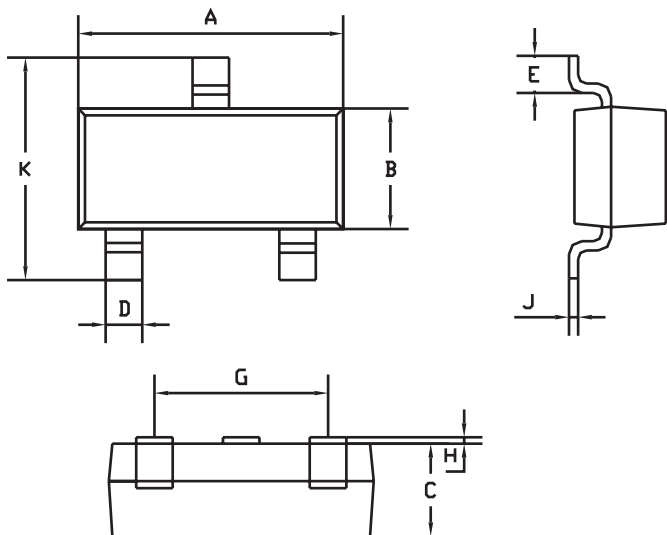
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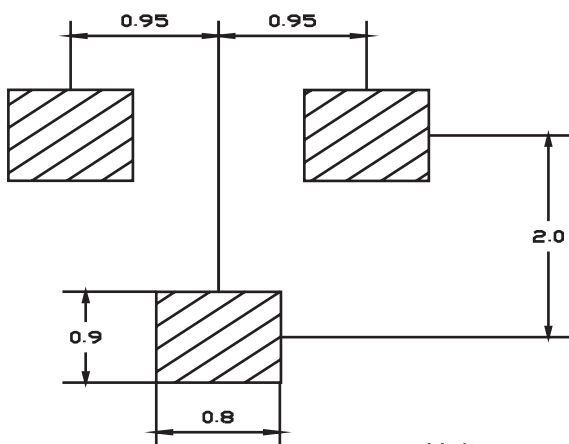


## Plastic Surface Mounted Package:



SOT-23		
Dim	Min	Max
A	2.85	2.95
B	1.25	1.35
C	1 Typical	
D	0.37	0.43
E	0.35	0.48
G	1.85	1.95
H	0.02	0.1
J	0.1 Typical	
K	2.35	2.45
All Dimensions in mm		

## Soldering Footprint:



Unit : mm

## Part Number Table

Description	Part Number
Transistor, Bipolar, NPN, 40V, 600mA, SOT-23	MMBT4401-7-F

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