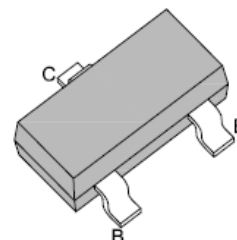


### SMD VHF/UHF Transistor (NPN)

#### Features

- NPN Silicon Epitaxial Planar Transistor
- RoHS compliance



#### Mechanical Data

SOT-23



<b>Case:</b>	SOT-23, Plastic Package
<b>Terminals:</b>	Solderable per MIL-STD-202G, Method 208
<b>Weight:</b>	0.008 gram

#### Maximum Ratings *(T<sub>Ambient</sub>=25°C unless noted otherwise)*

Symbol	Description	MMBTH10	Unit
	Marking Code	3E	
<b>V<sub>CB0</sub></b>	Collector-Base Voltage	30	V
<b>V<sub>CEO</sub></b>	Collector-Emitter Voltage	25	V
<b>V<sub>EBO</sub></b>	Emitter-Base Voltage	3.0	V
<b>*P<sub>tot</sub></b>	Power Dissipation FR-5 Board, T <sub>a</sub> =25°C	225	mW
	Derate above 25°C	1.8	mW/° C
<b>*R<sub>θJA</sub></b>	Thermal Resistance from Junction to Ambient in Free Air	556	° C/mW
<b>**P<sub>tot</sub></b>	Power Dissipation Alumina Substrate, T <sub>a</sub> =25°C	300	mW
	Derate above 25°C	2.4	mW/° C
<b>**R<sub>θJA</sub></b>	Thermal Resistance from Junction to Ambient in Free Air	417	° C/mW
<b>T<sub>J</sub>, T<sub>STG</sub></b>	Junction and Storage Temperature Range	150	° C

# SMD VHF/UHF Transistor (NPN)

## MMBTH10

**Note:** \* FR-5 Board=25.4x19.05x1.58mm (1.0x0.75x0.062")

\*\*Alumina Substrate=10.16x7.62x0.61mm (0.4x0.3x0.024"), 99.5% alumina

### Electrical Characteristics ( $T_{Ambient}=25^{\circ}C$ unless noted otherwise)

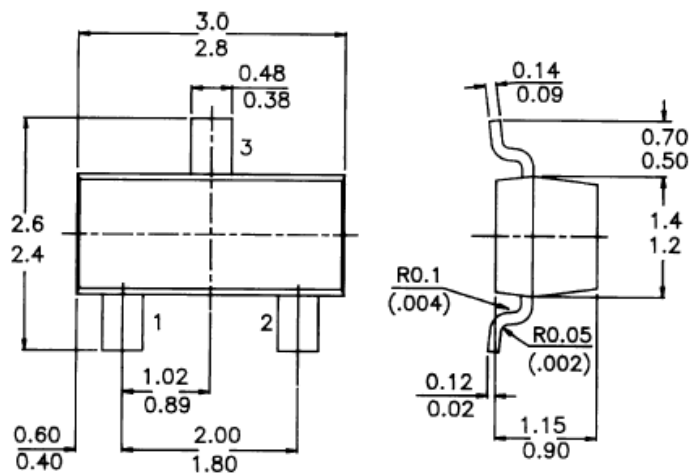
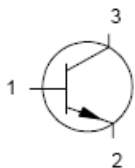
Symbol	Description	MMBTH10		Unit	Conditions
		Min.	Max.		
<b>h<sub>FE</sub></b>	D.C. Current Gain	60	-		$V_{CE}=10V, I_C=4mA$
<b>V<sub>CB0</sub></b>	Collector-Base Voltage	30	-	V	$I_C=100\mu A, I_E=0$
<b>V<sub>CEO</sub></b>	Collector-Emitter Voltage	25	-	V	$I_C=1mA, I_B=0$
<b>V<sub>EBO</sub></b>	Emitter-Base Voltage	3	-	V	$I_E=10\mu A, I_C=0$
<b>V<sub>CE(sat)</sub></b>	Collector-Emitter Saturation Voltage	-	0.50	V	$I_C=4mA, I_B=0.4mA$
<b>V<sub>BE(on)</sub></b>	Base-Emitter on Voltage	-	0.95	V	$V_{CE}=10V, I_C=4mA$
<b>I<sub>CB0</sub></b>	Collector-Emitter Cut-off Current	-	100	nA	$V_{CB}=25V, I_E=0$
<b>I<sub>EBO</sub></b>	Emitter Cut-off Current	-	100	nA	$V_{EB}=2V, I_C=0$

### Dimensions in mm

#### SOT-23

#### Pin configuration

- 1 = BASE
- 2 = EMITTER
- 3 = COLLECTOR



# SMD VHF/UHF Transistor (NPN)

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**MMBTH10**

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