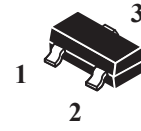
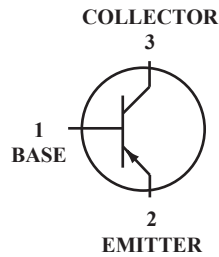


## High-Voltage PNP Transistor Surface Mount

 Lead(Pb)-Free



**SOT-23**

### Maximum Ratings

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	-300	Vdc
Collector-Base Voltage	V <sub>CB0</sub>	-300	Vdc
Emitter-Base Voltage	V <sub>EB0</sub>	-5.0	Vdc
Collector Current-Continuous	I <sub>C</sub>	-500	mA <sub>dc</sub>

### Thermal Characteristics

Characteristics	Symbol	Max	Unit
Total Device Dissipation FR-5 Board <sup>(1)</sup> T <sub>A</sub> =25 °C Derate above 25 °C	P <sub>D</sub>	225 1.8	mW mW/ °C
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	556	°C/W
Total Device Dissipation Alumina Substrate, <sup>(2)</sup> T <sub>A</sub> =25 °C Derate above 25 °C	P <sub>D</sub>	300 2.4	mW mW/ °C
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	417	°C/W
Junction and Storage, Temperature	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

### Device Marking

MMBTA92=2D

### Electrical Characteristics (T<sub>A</sub>=25°C Unless Otherwise noted)

Characteristics	Symbol	Min	Max	Unit
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### Off Characteristics

Collector-Emitter Breakdown Voltage <sup>(3)</sup> (I <sub>C</sub> =-1.0mA <sub>dc</sub> , I <sub>B</sub> =0)	V(BR)CEO	-300	-	Vdc
Collector-Base Breakdown Voltage (I <sub>C</sub> =-100μA <sub>dc</sub> , I <sub>E</sub> =0)	V(BR)CBO	-300	-	Vdc
Emitter-Base Breakdown Voltage (I <sub>E</sub> =-10μA <sub>dc</sub> , I <sub>C</sub> =0)	V(BR)EBO	-5.0	-	Vdc
Collect Cutoff Current (V <sub>CB</sub> = -200Vdc, I <sub>E</sub> =0)	I <sub>CBO</sub>	-	-0.25	μA <sub>dc</sub>
Emitte Cutoff Current (V <sub>EB</sub> =3V, I <sub>C</sub> =0)	I <sub>EBO</sub>	-	-0.1	μA <sub>dc</sub>

1.FR-5=1.0 x 0.75 x 0.062 in.

2.Alumina=0.4 x 0.3 x 0.024 in. 99.5% alumina.

3.Pulse Test:Pulse Width ≤300 μS, Duty Cycle ≤2.0%.

**Electrical Characteristics** ( $T_A=25^\circ\text{C}$  unless otherwise noted) (Continued)

Characteristics	Symbol	Min	Max	Unit
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**On Characteristics**

DC Current Gain ( $I_C = -1.0\text{ mAdc}, V_{CE} = -10\text{Vdc}$ ) ( $I_C = -10\text{ mAdc}, V_{CE} = -10\text{Vdc}$ ) ( $I_C = -30\text{ mAdc}, V_{CE} = -10\text{Vdc}$ )	$H_{FE}(1)$ $H_{FE}(2)$ $H_{FE}(3)$	25 100 25	- 200 -	-
Collector-Emitter Saturation Voltage (3) ( $I_C = -20\text{ mAdc}, I_B = -2.0\text{mAdc}$ )	$V_{CE(sat)}$	-	0.5	Vdc
Base-Emitter Saturation Voltage (3) ( $I_C = -20\text{ mAdc}, I_B = -2.0\text{ mAdc}$ )	$V_{BE(sat)}$	-	0.9	Vdc
Current-Gain-Bandwidth Product ( $I_C = -10\text{ mAdc}, V_{CE} = -5\text{ Vdc}, f=30\text{MHz}$ )	$f_T$	50	-	MHz

## Typical Characteristics

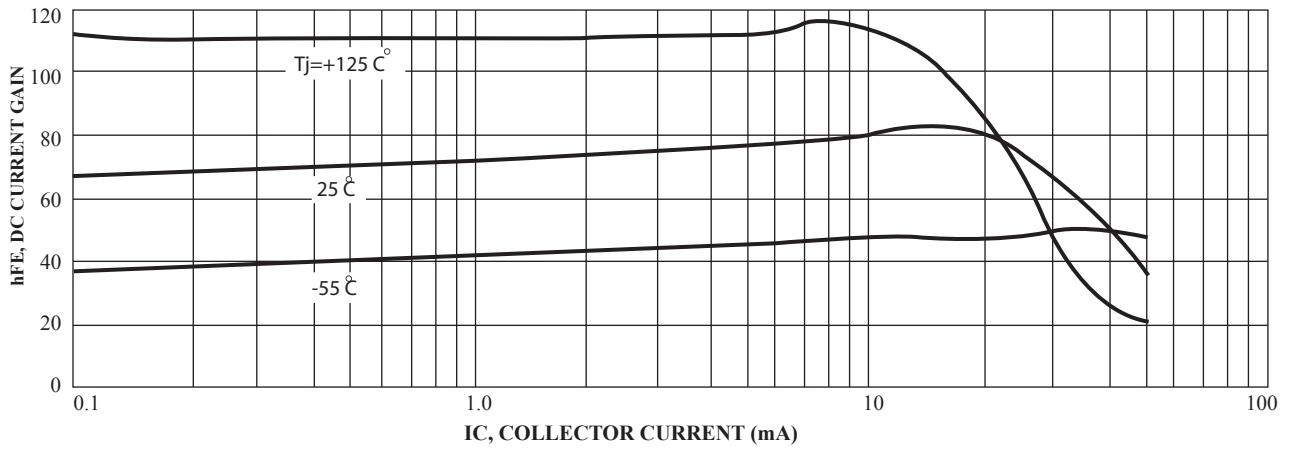


Figure 1, DC Current Gain

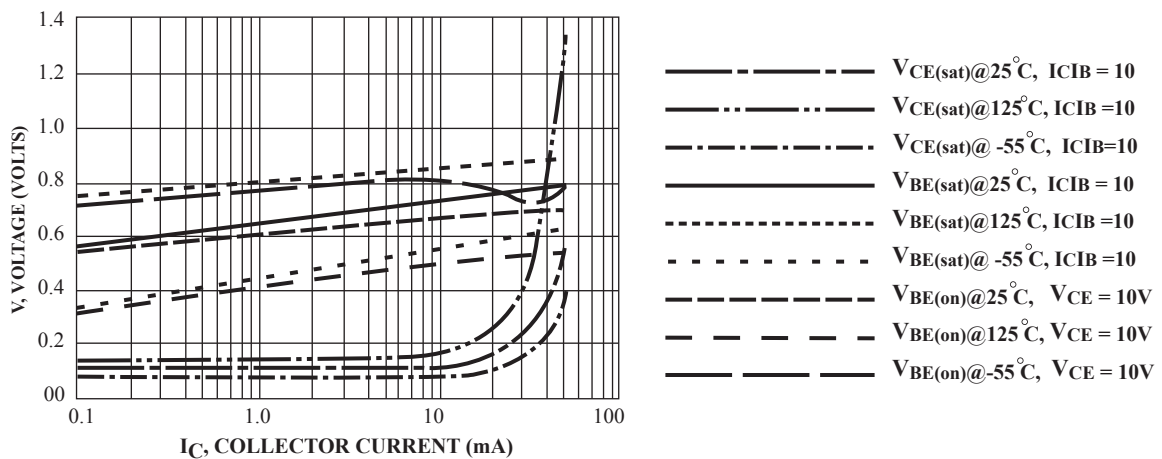


Figure 2, "On" Voltages

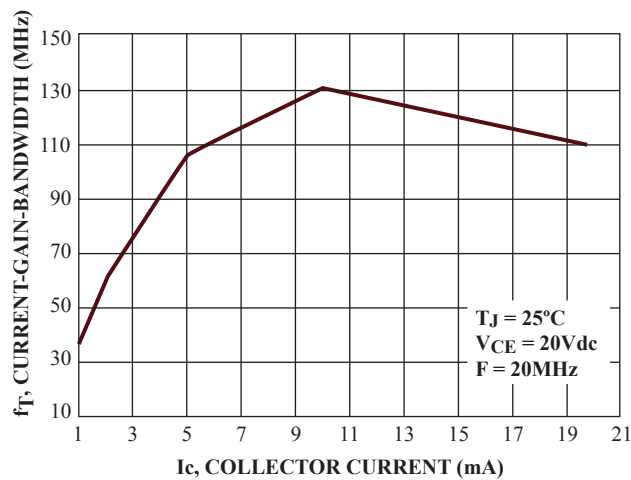
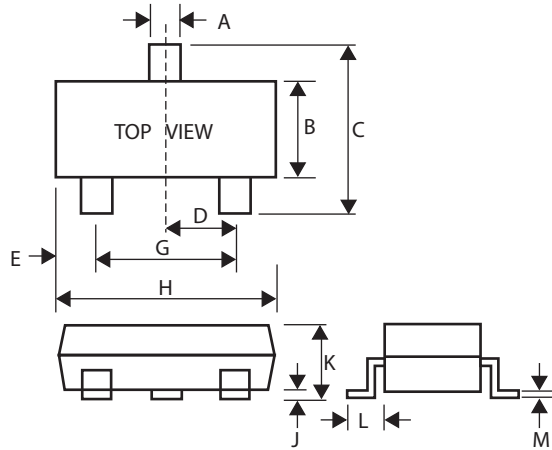


Figure 3, Current-Gain- Bandwidth

## SOT-23 Package Outline Dimension



SOT-23		
Dim	Min	Max
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25