

# NPN High Voltage Amplifier

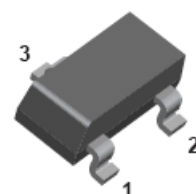
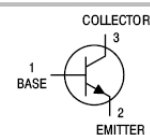


## Features:

- Epitaxial planar die construction
- Ideal for medium power amplification and switching

## Applications:

- NPN High voltage amplifier



**SOT-23**

## Maximum Rating @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Value	Units
Collector-Base Voltage	$V_{CBO}$	300	V
Collector-Emitter Voltage	$V_{CEO}$	300	
Emitter-Base Voltage	$V_{EBO}$	6	
Collector Current (DC)	$I_C$	0.2	A
Collector Dissipation	$P_C$	0.35	W
Junction and Storage Temperature	$T_j, T_{stg}$	-55 to +150	$^\circ\text{C}$

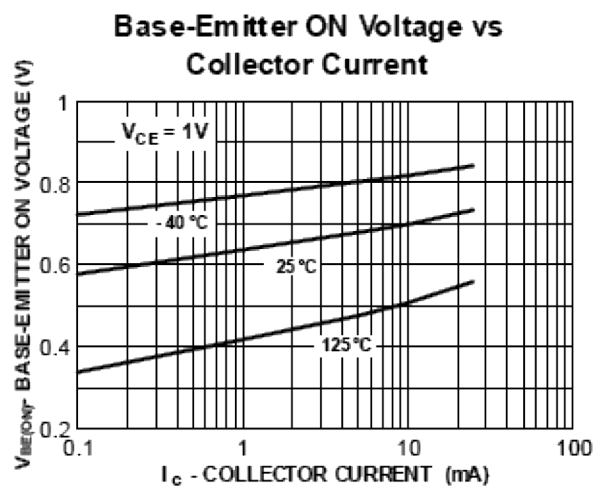
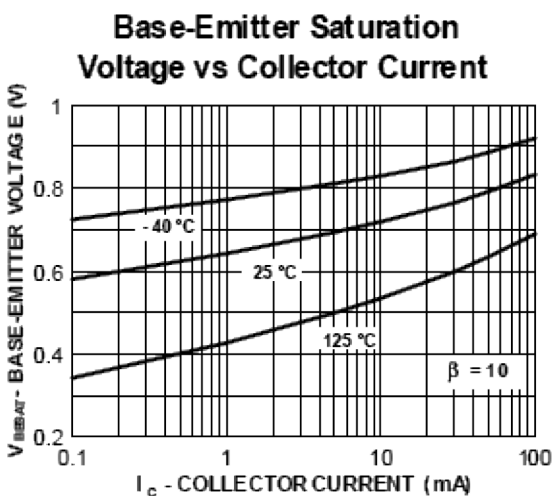
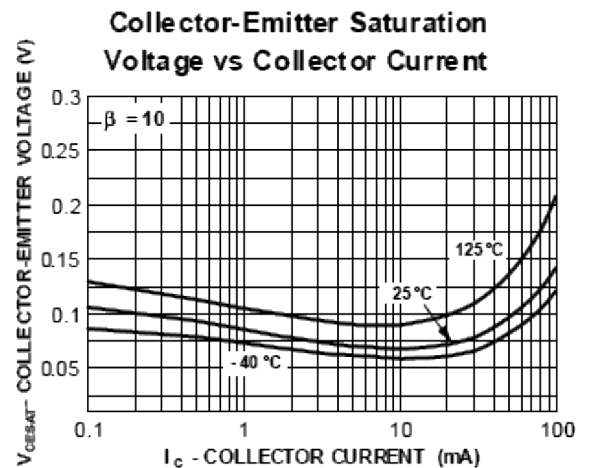
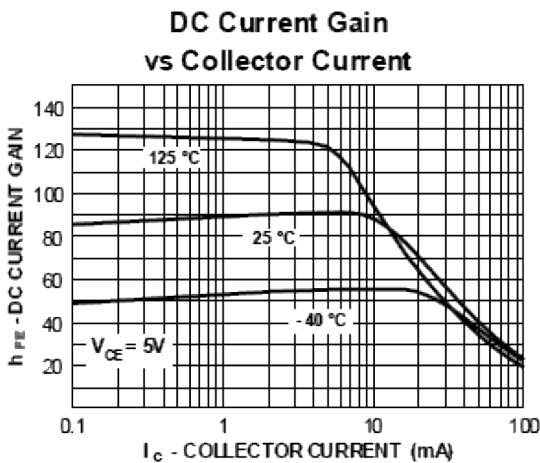
## Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test conditions	Min.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	300	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	300	-	
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	6	-	
Collector Cut-Off Current	$I_{CBO}$	$I_E = 0, V_{CB} = 200\text{V}$	-	0.1	$\mu\text{A}$
Emitter Cut-Off Current	$I_{EBO}$	$I_C = 0, V_{EB} = 6\text{V}$	-		
DC Current Gain	$h_{FE}$	$V_{CE} = 10\text{V}, I_C = 1\text{mA}$	25	-	
		$V_{CE} = 10\text{V}, I_C = 10\text{mA}$	40	-	
		$V_{CE} = 10\text{V}, I_C = 30\text{mA}$	40	-	

# NPN High Voltage Amplifier

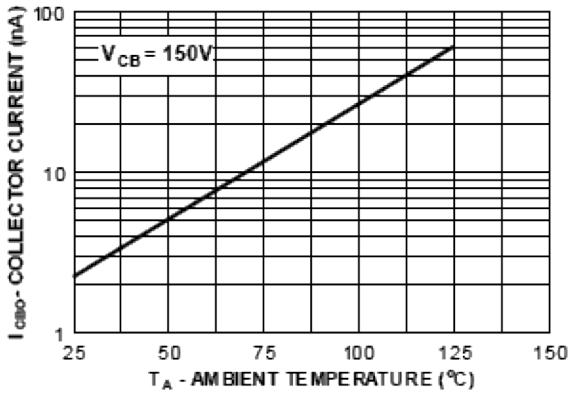
Parameter	Symbol	Test conditions	Min.	Max.	Unit
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 20\text{mA}, I_B = 2\text{mA}$	-	0.5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 20\text{mA}, I_B = 2\text{mA}$	-	0.9	
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 20\text{V}, I_E = 0$ $f = 1\text{MHz}$		3	pF
Transition Frequency	$f_T$	$I_C = 10\text{mA}, V_{CE} = 20\text{V}$ $f = 100\text{MHz}$	50	-	MHz

Typical Characteristics @  $T_A = 25^\circ\text{C}$  unless otherwise specified

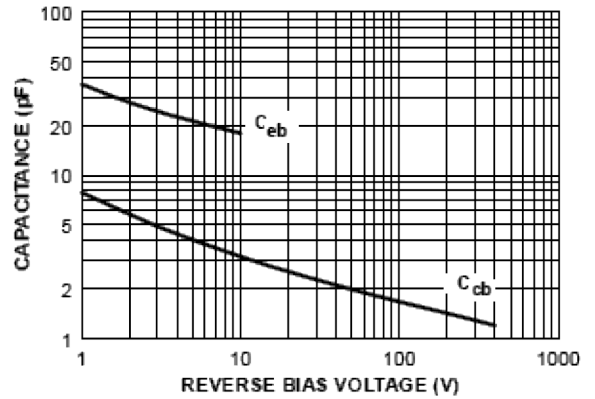


# NPN High Voltage Amplifier **multicomp**

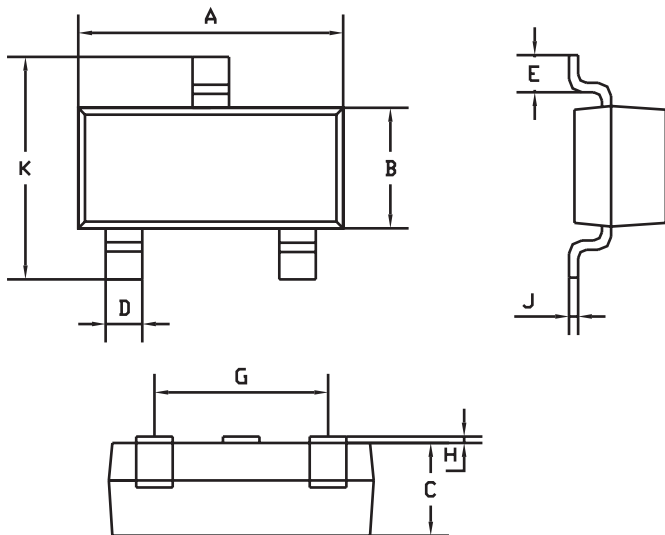
**Collector-Cutoff Current vs Ambient Temperature**



**Collector-Base and Emitter-Base Capacitance vs Reverse Bias Voltage**



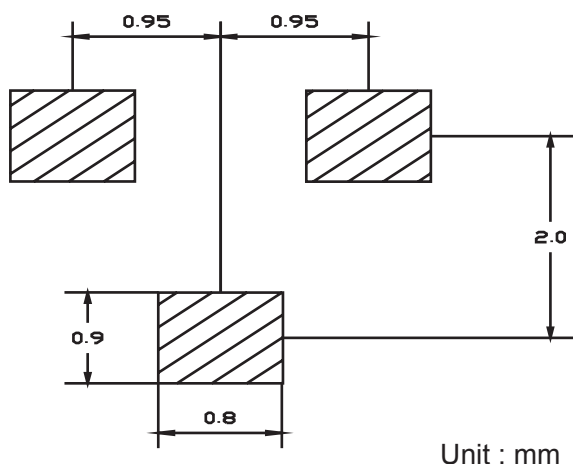
**Plastic Surface Mounted Package:**



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		

# NPN High Voltage Amplifier

## Soldering Footprint:



## Part Number Table

Description	Part Number
Transistor, Bipolar, NPN, 300V, 200mA, SOT-23	MMBTA42-7-F

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