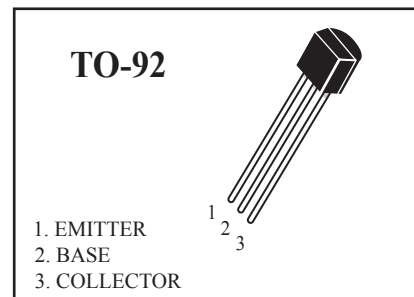


## PNP Transistors



### ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Rating	Symbol	2N5401	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	-150	V <sub>dc</sub>
Collector-Base Voltage	V <sub>CBO</sub>	-160	V <sub>dc</sub>
Emitter-Base Voltage	V <sub>EBO</sub>	-5.0	V <sub>dc</sub>
Collector Current	I <sub>C</sub>	600	mA <sub>dc</sub>
Total Device Dissipation T <sub>A</sub> =25°C	P <sub>D</sub>	0.625	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage, Temperature	T <sub>stg</sub>	-55 to +150	°C

### ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage (I <sub>C</sub> = -1.0 mA <sub>dc</sub> , I <sub>B</sub> =0)	V <sub>(BR)CEO</sub>	-150	-	V <sub>dc</sub>
Collector-Base Breakdown Voltage (I <sub>C</sub> = -100 μA <sub>dc</sub> , I <sub>E</sub> =0)	V <sub>(BR)CBO</sub>	-160	-	V <sub>dc</sub>
Emitter-Base Breakdown Voltage (I <sub>E</sub> = -10 μA <sub>dc</sub> , I <sub>C</sub> =0)	V <sub>(BR)EBO</sub>	-5.0	-	V <sub>dc</sub>
Collector Cutoff Current (V <sub>CB</sub> = -120 V <sub>dc</sub> , I <sub>E</sub> =0)	I <sub>CBO</sub>	-	-0.05	μA <sub>dc</sub>
Emitter Cutoff Current (V <sub>EB</sub> = -4.0 V <sub>dc</sub> , I <sub>C</sub> =0)	I <sub>EBO</sub>	-	-0.05	μA <sub>dc</sub>

# 2N5401



## ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristics	Symbol	Min	TYP	Max	Unit
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### ON CHARACTERISTICS

DC Current Gain ( $I_C = -1.0/1.0 \text{ mAdc}, V_{CE} = -5.0 \text{ Vdc}$ )	$h_{FE} (1)$	80	-	-	-
DC Current Gain ( $I_C = -10 \text{ mAdc}, V_{CE} = -5.0 \text{ Vdc}$ )	$h_{FE} (2)$	80	-	250	-
$I_C = -50 \text{ mAdc}, V_{CE} = -5.0 \text{ Vdc}$	$h_{FE} (3)$	50	-	-	-
Collector-Emitter Saturation Voltage ( $I_C = -25 \text{ mAdc}, I_B = -5.0 \text{ mAdc}$ )	$V_{CE(sat)}$	-	-	-0.5	Vdc
Base-Emitter Saturation Voltage ( $I_C = -50 \text{ Adc}, I_B = -5.0 \text{ mAdc}$ )	$V_{BE(sat)}$	-	-	-1.0	Vdc
Current-Gain-Bandwidth Product ( $I_C = 10 \text{ mAdc}, V_{CE} = -5.0 \text{ Vdc}, f = 30 \text{ MHz}$ )	$f_T$	100	-	-	MHz

### Classification of $h_{FE}(2)$

Rank	A	B	C
Range	80-160	120-180	150-250

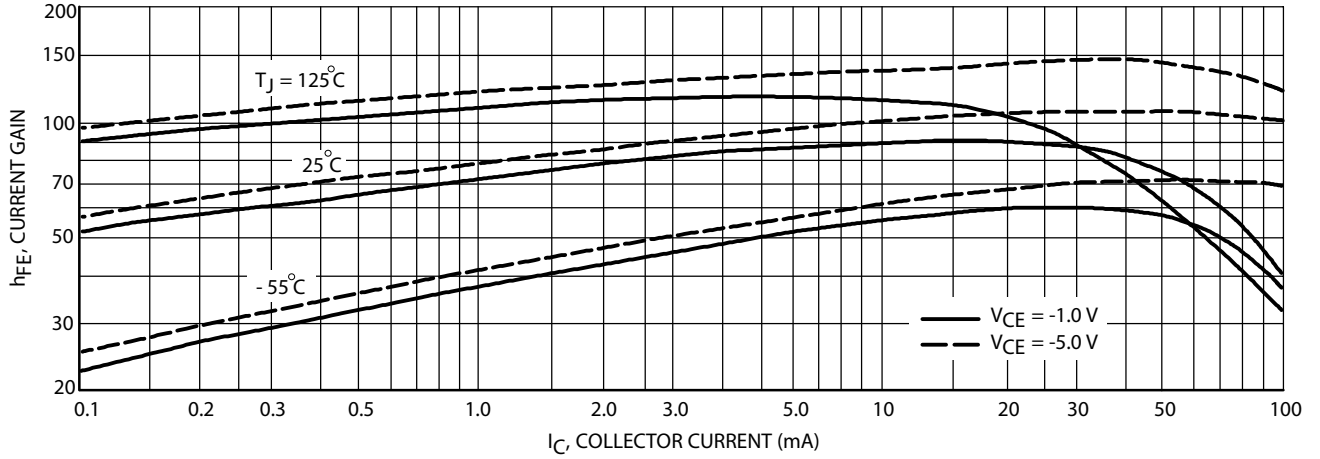


FIG 1. DC Current Gain

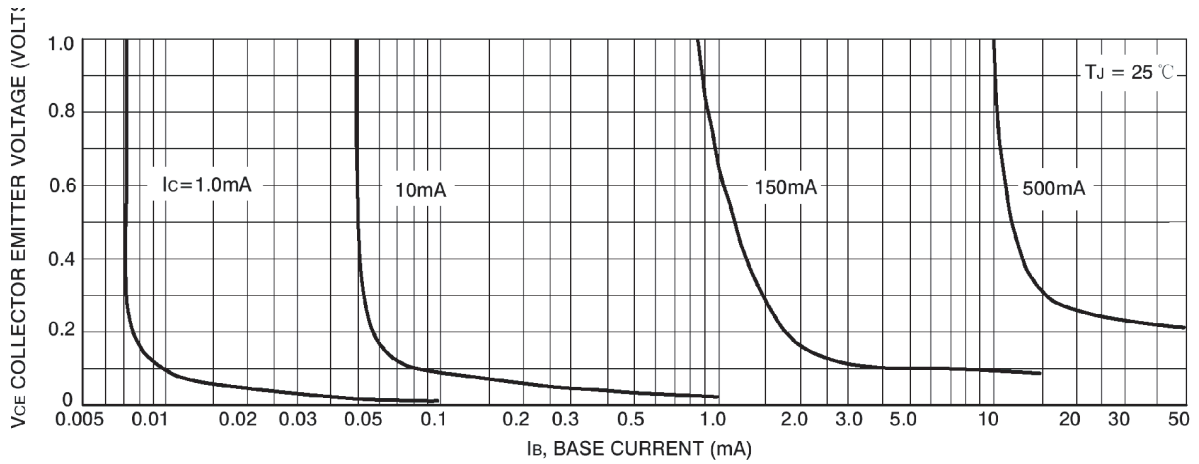


FIG2 Collector Saturation Region

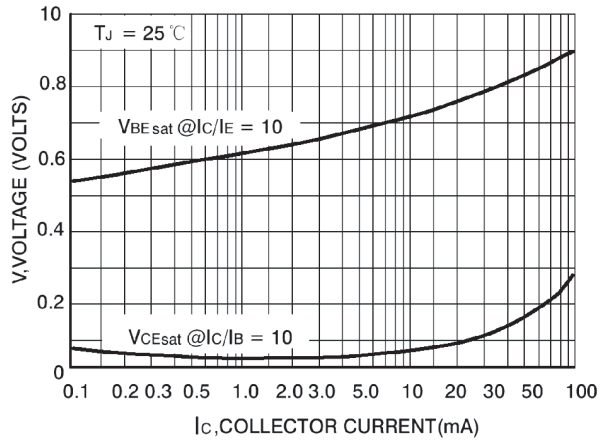
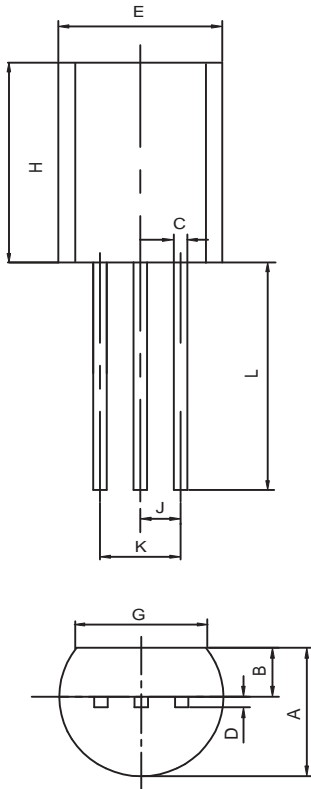


FIG3 "On" Voltages

## TO-92 Outline Dimensions

unit:mm



TO-92		
Dim	Min	Max
A	3.30	3.70
B	1.10	1.40
C	0.38	0.55
D	0.36	0.51
E	4.40	4.70
G	3.43	-
H	4.30	4.70
J	1.270TYP	
K	2.44	2.64
L	14.10	14.50