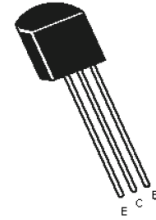


# Bipolar Transistor



## Description:

- NPN Silicon Planar Epitaxial Transistors

## Pin Configuration:

1. Emitter
2. Collector
3. Base

## Absolute Maximum Ratings

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	30	V
Collector-Base Voltage	$V_{CBO}$	50	
Emitter Base Voltage	$V_{EBO}$	5	
Collector Current Continuous	$I_C$	600	mA
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$	$P_D$	625 5	mW mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	-55 to +150	$^\circ\text{C}$

## Thermal Resistance

Junction to Ambient	$R_{th(j-a)}$	200	$^\circ\text{C}/\text{W}$
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## Electrical Characteristics ( $T_a = 25^\circ\text{C}$ unless specified otherwise)

Characteristics	Symbol	Test Condition	Min.	Max.	Unit
Collector Emitter Voltage	$BV_{CEO}^*$	$I_C = 10\text{mA}, I_B = 0$	30	-	V
Collector Base Voltage	$BV_{CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	50	-	
Emitter to Base Voltage	$V_{EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	5	-	
DC Current Gain 2N3705	$h_{FE}^*$	$I_C = 500\text{mA}, V_{CE} = 2\text{V}$	100	300	-
			50	150	-

\*Pulse Test : Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

# Bipolar Transistor



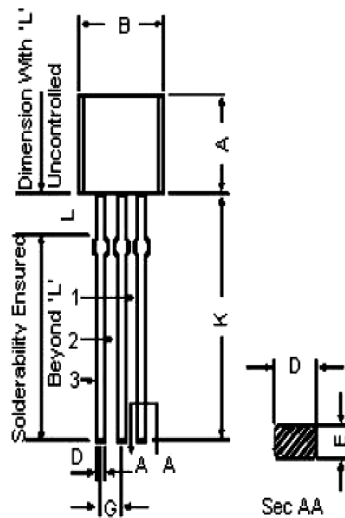
## Electrical Characteristics ( $T_a = 25^\circ\text{C}$ unless specified otherwise)

Characteristics	Symbol	Test Condition	Min.	Max.	Unit
Collector Leakage Current	$I_{CBO}$	$V_{CB} = 20\text{V}, I_E = 0$	-	0.1	$\mu\text{A}$
Emitter Leakage Current	$I_{EBO}$	$V_{EB} = 3\text{V}, I_C = 0$	-		
Collector Emitter Saturation Voltage 2N3705	$V_{CE(sat)}^*$	$I_C = 100\text{mA}, I_B = 5\text{mA}$	-	0.6	V
				0.8	
Base Emitter On Voltage	$V_{BE(on)}^*$	$I_C = 100\text{mA}, V_{CE} = 2\text{V}$	0.5	1.0	

### Small Signal Characteristics

Output Capacitance	$C_{ob}$	$I_E = 0, V_{CB} = 10\text{V}, f = 1\text{MHz}$	-	12	$\text{pF}$
Transition Frequency	$f_T$	$I_C = 50\text{mA}, V_{CE} = 2\text{V}, f = 20\text{MHz}$	100	-	MHz

\*Pulse Test : Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .



Dimensions	Min.	Max.
A	4.32	5.33
B	4.45	5.2
C	3.18	4.19
D	0.41	0.55
E	0.35	0.5
F	5°	
G	1.14	1.4
H		1.53
K	12.7	-
L	1.982	2.082

Dimensions : Millimetres

### Pin Configuration:

1. Emitter
2. Collector
3. Base



### Part Number Table

Description	Part Number
Transistor, NPN, TO-92	2N3705

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