

2N3705

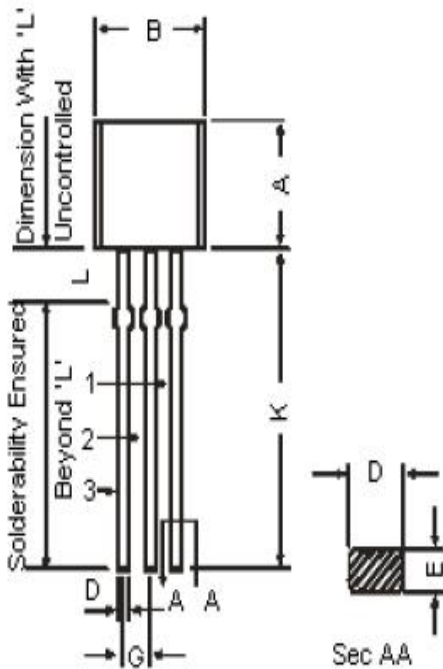
Bipolar Transistors



Description:

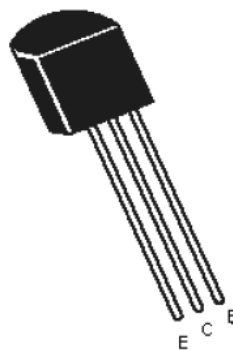
NPN Silicon Planar Epitaxial Transistors.

TO-92 Plastic Package



Dimensions	Minimum	Maximum
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5°	
G	1.14	1.40
H		1.53
K	12.70	-
L	1.982	2.082

Dimensions : Millimetres



Pin Configuration:

1. Emitter
2. Collector
3. Base



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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°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	$^\circ\text{C/W}$

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

Characteristics	Symbol	Test Condition	Minimum	Maximum	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	-
Collector Leakage Current	I_{CBO}	$V_{CB} = 20\text{V}, I_E = 0$	-	0.1	μA	
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	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 $\leq 2.0\%$.



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Specifications

V_{CEO} (V)	V_{CBO} Maximum (V)	I_C (mA)	h_{FE} Minimum at $I_C = 50mA$	f_T Minimum (MHz)	P_{tot} (mW)	Package	Part Number
30	50	0.8	50	100	625	TO-92	2N3705



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Notes:

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