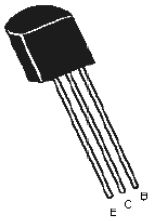
Bipolar Transistor



Pin Configuration:
1. Emitter
2. Collector
3. Base

Description:

- NPN Silicon Planar Epitaxial Transistor

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°C Derate above 25°C	P_D	625 5	W mW/°C
Operating and Storage Junction Temperature Range	T_j, T_{stg}	-55 to +150	°C

Thermal Resistance

Junction to Ambient	$R_{th\ (j-a)}$	200	°C/W

Electrical Characteristics (T_a = 25°C unless otherwise specified)

Characteristic		Symbol	Test Condition	Min.	Max.	Unit
Collector Emitter Voltage		BV_{CEO}*	I_C = 10mA, I_B = 0	30	-	V
Collector Base Voltage		BV_{CBO}	I_C = 100µA, I_E = 0	50	-	
Emitter to Base Voltage		V_{EBO}	I_E = 100µA, I_C = 0	5	-	
DC Current Gain	2N3704	h_{FE}*	I_C = 50mA, V_{CE} = 2V	100	300	-
Collector Leakage Current		I_{CBO}	V_{CB} = 20V, I_E = 0	-	0.1	µA

*Pulse Test : Pulse Width = ≤300µs, Duty Cycle = ≤2.0%.

Bipolar Transistor

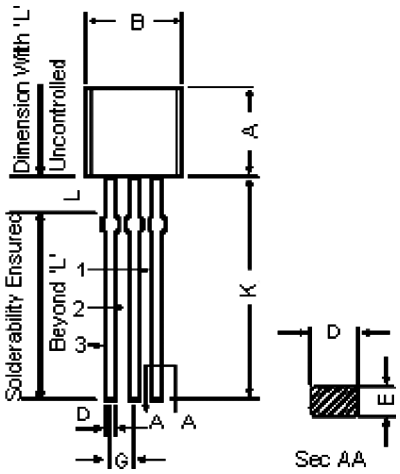
Electrical Characteristics (T_a = 25°C unless otherwise specified)

Characteristic	Symbol	Test Condition	Min.	Max.	Unit
Emitter Leakage Current	I_{EBO}	V_{EB} = 3V, I_C = 0	-	0.1	µA
Collector Emitter Saturation Voltage 2N3704	$V_{CE\ (sat)}$*	I_C = 100mA, I_B = 5mA	-	0.6	V
Base Emitter On Voltage	$V_{BE\ (on)}$*	I_C = 100mA, V_{CE} = 2V	0.5	1	

Small Signal Characteristics

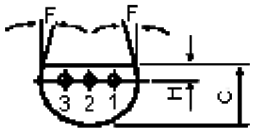
Output Capacitance	C_{ob}	I_E = 0, V_{CB} = 10V, f = 1MHz	-	12	pF
Transition Frequency	f_T	I_C = 50mA, V_{CE} = 2V, f = 20MHz	100	-	MHz

*Pulse Test : Pulse Width = ≤300µs, Duty Cycle = ≤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



Part Number Table

Description	Part Number
Transistor, NPN, TO-92	2N3704