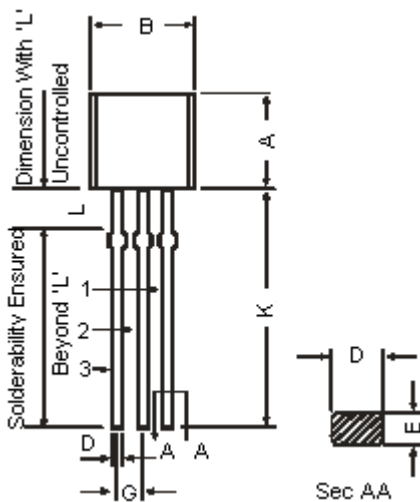


Description:

General Purpose NPN Silicon Planar Epitaxial Amplifier Transistors.

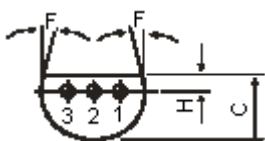


TO-92 Plastic Package



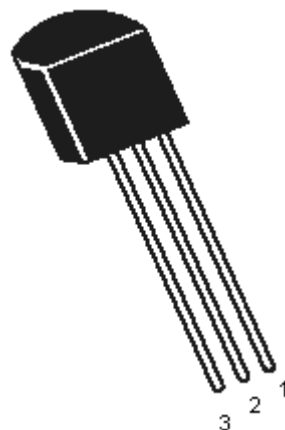
Dimensions	Minimum	Maximum
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5°	
G	1.14	1.40
H		1.53
K	12.70	-
L	1.982	2.082

Dimensions : Millimetres



Pin Configuration

1. Emitter
2. Base
3. Collector



Bipolar Transistors

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$ unless specified otherwise)

Description	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	50	V
Collector-Base Voltage	V_{CBO}	60	
Emitter-Base Voltage	V_{EBO}	6.0	
Collector Current Continuous	I_C	100	mA
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate Above 25°C	P_D	350 2.8	mW mW/ $^\circ\text{C}$
Power Dissipation at $T_c = 25^\circ\text{C}$ Derate Above 25°C		1.0 8.0	W mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_j, T_{stg}	-55 to +150	$^\circ\text{C}$

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

Description	Symbol	Test Condition	Minimum	Typical	Maximum	Unit
Collector-Emitter Voltage	V_{CEO}	$I_C = 2\text{mA}, I_B = 0$	50	-	-	V
Collector-Base Voltage	V_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$	60	-	-	
Emitter-Base Voltage	V_{EBO}	$I_E = 100\mu\text{A}, I_C = 0$	6.0	-	-	
Collector-Cut off Current	I_{CBO}	$V_{CB} = 50\text{V}, I_E = 0$	-	0.2	15	nA
Emitter-Cut off Current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$	-	-		
DC Current Gain	h_{FE}	$I_C = 10\mu\text{A}, V_{CE} = 5\text{V}$	40	-	500	-
		$I_C = 2\text{mA}, V_{CE} = 5\text{V}$	120	-		-
		$I_C = 100\text{mA}, V_{CE} = 5\text{V}$	80	-		-
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5.0\text{mA}^*$	-	0.07 0.2	0.25 0.6	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 100\text{mA}, I_B = 5\text{mA}^*$	-	-	1.2	
Base Emitter On Voltage	$V_{BE(on)}$	$I_C = 100\mu\text{A}, V_{CE} = 5\text{V}$ $I_C = 2.0\text{mA}, V_{CE} = 5\text{V}$ $I_C = 100\text{mA}, V_{CE} = 5\text{V}^*$	0.55	0.5 0.62 0.83	0.7	

*Pulse Condition: $\tau_p 300\text{s}$, Duty Cycle = 2.0%.

Bipolar Transistors

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

Description	Symbol	Test Condition	Minimum	Typical	Maximum	Unit
Dynamic Characteristics						
Current Gain Bandwidth Product	f_T	$I_C = 0.5\text{mA}, V_{CE} = 3\text{V}$ $f = 100\text{MHz}$ $I_C = 10\text{mA}, V_{CE} = 5.0\text{V}$ $f = 100\text{MHz}$	- 150	100 200	- -	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_C = 0$ $f = 1\text{MHz}$	-	-	5.0	pF
Input Capacitance	C_{ib}	$V_{BE} = 0.5\text{V}, I_C = 0$ $f = 1\text{MHz}$	-	8.0	-	
Small Signal Current Gain	$ h_{fe} $	$I_C = 2\text{mA}, V_{CE} = 5\text{V}$ $f = 1\text{KHz}$	125 125 240	-	500 260 500	-
Noise figure	NF	$I_C = 2\text{mA}, V_{CE} = 5\text{V}$ $R_s = 2\text{k}\Omega, f = 1\text{kHz}$ $F = 200\text{Hz}$	-	-	10	dB

Specifications

V_{CEO} (V)	V_{CBO} maximum (V)	I_C (A)	h_{FE} minimum at $I_C = 2\text{mA}$	f_T minimum (MHz)	P_{tot} (mW)	Package	Part Number
50	60	0.1	120	120	350	TO-92	TBC182B

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