

General Purpose Transistor



Pin Configuration:

1. Base
2. Collector
3. Emitter

Description:

- General Purpose NPN Silicon Planar Epitaxial Amplifier Transistors.

Absolute Maximum Ratings

Parameter	Symbol	Value	Units
Collector-Emitter Voltage	V_{CEO}	50	V
Collector-Base Voltage	V_{CBO}	60	
Emitter-Base Voltage	V_{EBO}	6	
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/ $^\circ\text{C}$
Total Device Dissipation at $T_c = 25^\circ\text{C}$ Derate Above 25°C		1 8	W mW/ $^\circ\text{C}$
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	- 55 to + 150	

Thermal Resistance

Junction to Ambient	$R_{th(j-a)}$	375	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	125	

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

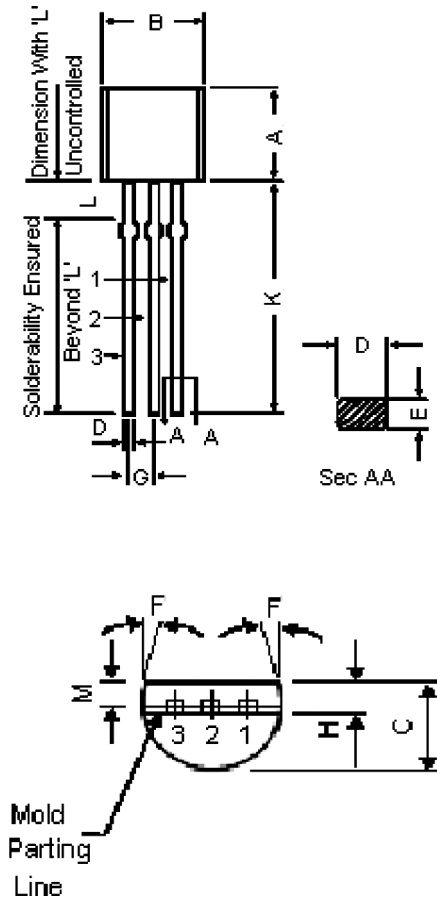
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Collector-Emitter Voltage	V_{CEO}	$I_C = 2\text{mA}, I_B = 0$	50	-	-	V
Collector-Base Voltage	V_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$	60	-	-	
Emitter-Base Voltage	V_{EBO}	$I_E = 100\mu\text{A}, I_C = 0$	6	-	-	
Collector Cut off Current	I_{CBO}	$V_{CB} = 50\text{V}, I_E = 0$	-	-	15	nA
Emitter-Base Leakage Current	I_{EBO}	$V_{EB} = 4.0\text{V}, I_C = 0$	-	-		
DC Current Gain	h_{FE}	$I_C = 2\text{mA}$ BC182L	125	-	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ * $I_C = 100\text{mA}, I_B = 5\text{mA}$	-	-	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	$V_{BE(on)}$	$I_C = 100\mu\text{A}, V_{CE} = 5\text{V}$ $I_C = 2\text{mA}, V_{CE} = 5\text{V}$ * $I_C = 100\text{mA}, V_{CE} = 5\text{V}$	0.55	0.5 0.83	0.7	

Dynamic Characteristics

Current-Gain Bandwidth Product	f_T	$I_C = 0.5\text{mA}, V_{CE} = 3\text{V},$ $f = 100\text{MHz}$ $I_C = 10\text{mA}, V_{CE} = 5\text{V},$ $f = 100\text{MHz}$	150	100	-	MHz
Common Base Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_C = 0,$ $f = 1\text{MHz}$	-	-	5	pF
Common Base Input Capacitance	C_{ib}	$V_{BE} = 0.5\text{V}, I_C = 0,$ $f = 1\text{MHz}$	-	8	-	pF
Small-Signal Current Gain	h_{fe}	$I_C = 2\text{mA}, V_{CE} = 5\text{V},$ $f = 1\text{kHz}$	125	-	500	-
Noise Figure	NF	$V_{CE} = 5\text{V}, I_C = 0.2\text{mA},$ $R_s = 2\text{K}\Omega,$ $f = 1\text{kHz}, F = 200\text{Hz}$	-	-	10	dB

*Pulse Condition : Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

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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	1.2	
K	12.7	-
L	1.982	2.082
M	1.03	1.2

Dimensions : Millimetres

Pin Configuration:

1. Base
2. Collector
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Part Number Table

Description	Part Number
Transistor, NPN, TO-92	BC182L

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