

# BF199

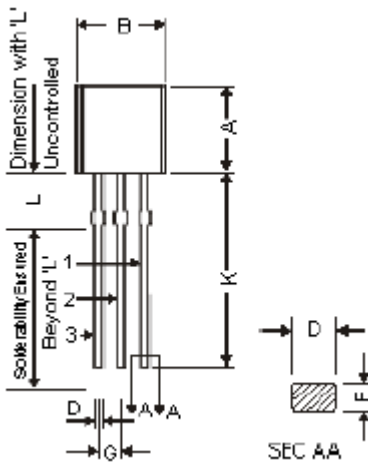
## NPN Silicon Transistor



### Feature:

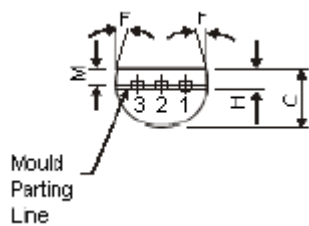
- NPN Silicon Planar Epitaxial RF Transistor.

### 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	1.20	
K	12.70	-
L	1.982	2.082
M	1.03	1.20

Dimensions : Millimetres



### Pin Configuration:

1. Base
2. Emitter
3. Collector

# BF199

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### Absolute Maximum Ratings

Parameters	Symbol	Value	Units
Collector Emitter Voltage	$V_{CEO}$	25	V
Collector Base Voltage	$V_{CBO}$	40	
Emitter Base Voltage	$V_{EBO}$	4.0	
Collector Current Continuous	$I_C$	100	mA
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	350	mW
Power Dissipation at $T_c = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$		2.8	mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	-55 to +150	$^\circ\text{C}$
<b>Thermal Resistance</b>			
Junction to Case	$R_{th(j-c)}$	125	$^\circ\text{C/W}$
Junction to Ambient in Free Air	$R_{th(j-a)}$	357	

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

Parameters	Symbol	Test Condition	Minimum	Typical	Maximum	Units
Collector Emitter Voltage	$V_{CEO}$	$I_C = 1\text{mA}, I_B = 0$	25	-	-	V
Collector Base Voltage	$V_{CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	40	-	-	
Emitter Base Voltage	$V_{EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	4	-	-	
Collector Cut off Current	$I_{CBO}$	$V_{CB} = 20\text{V}, I_E = 0$	-	-	100	nA
DC Current Gain	$h_{FE}$	$I_C = 7\text{mA}, V_{CE} = 10\text{V}$	40	-	-	-
Base Emitter On Voltage	$V_{BE(on)}$	$I_C = 7\text{mA}, V_{CE} = 10\text{V}$	-	-	0.9	V
<b>Dynamic Characteristics</b>						
Transistors Frequency	$f_T$	$I_C = 5\text{mA}, V_{CE} = 10\text{V},$ $f = 100\text{MHz}$	400	-	-	MHz
Common Emitter Feedback Capacitance	$C_{re}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	-	-	0.35	pF
Noise Figure	NF	$I_C = 4\text{mA}, V_{CE} = 10\text{V},$ $R_S = 50\Omega, f = 35\text{MHz}$	-	2.5	-	dB



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### Specifications

$I_C$ Maximum (A)	$V_{CEO}$ Maximum (V)	$V_{CBO}$ Maximum (V)	$P_{tot}$ at 25°C (W)	$f_T$ Minimum (MHz)	$h_{FE}$ Minimum at $I_C = 7mA$	Package and Pin Out	Part Number
0.025	25	40	0.5	550	38	TO-92	BF199

# BF199

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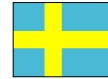
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