

NPN Silicon Transistor



Feature:

- NPN Silicon Planar Epitaxial RF Transistor

Pin Configuration:

1. Base
2. Emitter
3. Collector

Absolute Maximum Ratings

Description	Symbol	BC640	Unit
Collector Emitter Voltage	V_{CEO}	25	V
Collector Base Voltage	V_{CBO}	40	
Emitter-Base Voltage	V_{EBO}	4	
Collector Current Continuous	I_C	100	A
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate Above 25°C	P_D	350	mW
Power Dissipation at $T_C = 25^\circ\text{C}$ Derate Above 25°C		2.8	mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_j, T_{stg}	-55 to +150	$^\circ\text{C}$

Thermal Resistance

From 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 otherwise specified)

Description	Symbol	Test Condition	Min.	Typ.	Max.	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

NPN Silicon Transistor

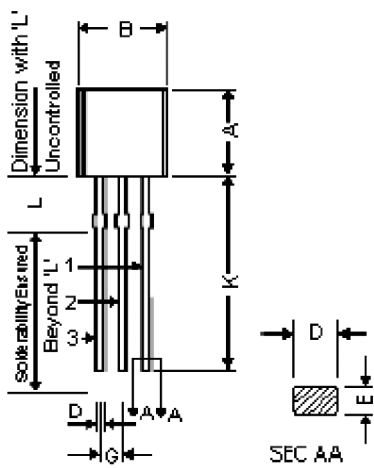


Electrical Characteristics ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Description	Symbol	Test Condition	Min.	Typ.	Max.	Units
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

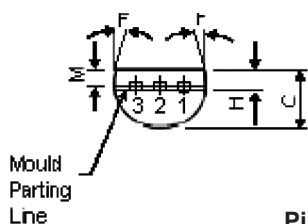
Dynamic Characteristics

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



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. Emitter
3. Collector

Part Number Table

Description	Part Number
Transistor, NPN, TO-92	BF199

Important Notice : This data sheet and its contents (the "Information") belong to the members of the Premier Farnell group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp is the registered trademark of the Group. © Premier Farnell plc 2012.