

# Low Power Bipolar Transistors

## BC177 Series

**multicomp** PRO

General Purpose Amplifier / Switches



### Feature

- PNP silicon planar epitaxial transistors



### Pin Configuration

1. Emitter
2. Base
3. Collector

**RoHS Compliant**

### Absolute Maximum Ratings

Description	Symbol	Values	Unit
Collector-Emitter Voltage	$V_{CEO}$	45	V
	$V_{CES}$	50	
Collector-Base Voltage	$V_{CBO}$		
Emitter-Base Voltage	$V_{EBO}$	5	
Collector Current Continuous	$I_C$	0.2	A
Power Dissipation at $T_A = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$	$P_D$	0.6	W
Power Dissipation at $T_c = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$		2.28	
Operating and Storage Junction Temperature Range	$T_J, T_{STG}$	-65 to +200	$^\circ\text{C}$
<b>Thermal Resistance</b>			
Junction to Case	$R_{th(j-c)}$	175	$^\circ\text{C} / \text{W}$

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

Description	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Cut Off Current	$I_{CES}$	$V_{CE} = 20\text{V}, I_E = 0$ $T_{amb} = 125^\circ\text{C}$ $V_{CE} = 20\text{V}, I_E = 0$	-	-	100 4	nA $\mu\text{A}$
Collector-Base Voltage	$V_{CBO}$	$I_E = 10\mu\text{A}, I_C = 0$	50	-	-	V
Collector-Emitter Voltage	$V_{CEO}$	$I_C = 2\text{mA}, I_B = 0$	45	-	-	
Emitter-Base Voltage	$V_{EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	5	-	-	
DC Current	$h_{FE}$	$I_C = 2\text{mA}, V_{CE} = 5\text{V}$ BC177 B Group	120 180	-	460 460	-
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}$	-	-	0.2 0.6	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$		-	-	0.8 -	
Base Emitter on Voltage	$V_{BE(on)}$	$I_C = 2\text{mA}, V_{CE} = 5\text{V}$	0.6	-	0.75	

Newark.com/multicomp-pro  
Farnell.com/multicomp-pro  
Element14.com/multicomp-pro

**multicomp** PRO

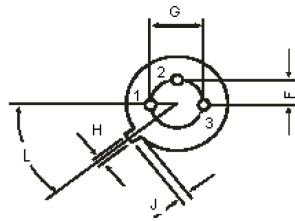
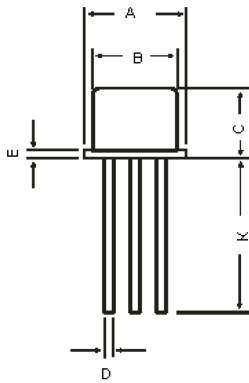
# Low Power Bipolar Transistors

## BC177 Series

**multicomp** PRO

Description	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector Knee Voltage	$V_{CE(K)}$	$I_C = 10\text{mA}$ , $I_B =$ The Value for which $I_C = 11\text{mA}$ at $V_{CE} = 1\text{V}$	-	-	0.6	V
Transition Frequency	$f_t$	$V_{CE} = 5\text{V}$ , $I_C = 10\text{mA}$ $f = 50\text{MHz}$	200	-	-	MHz
Noise Figure	nF	$V_{CE} = 5\text{V}$ , $I_C = 0.2\text{mA}$ $R_g = 2\text{k}\Omega$ $F = 1\text{kHz}$ , $B = 200\text{Hz}$	-	-	10	dB
Output Capacitance	Cobo	$V_{CB} = 10\text{V}$ , $f = 1\text{MHz}$	-	-	4	pF
Small Signal Current Gain	$h_{fe}$	All $f = 1\text{kHz}$ $I_C = 2\text{mA}$ , $V_{CE} = 5\text{V}$ BC177 B Group	125 240	-	500 500	-
Input Impedance	$h_{ie}$	$I_C = 2\text{mA}$ , $V_{CE} = 5\text{V}$ B Group	3.2	-	8.5	$\text{k}\Omega$
Output Admittance	hoe	$I_C = 2\text{mA}$ , $V_{CE} = 5\text{V}$ B Group	-	-	60	$\mu\Omega$

### TO-18 Metal Can Package



Dim.	Min.	Max.
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.4	0.53
E	-	0.76

Dim.	Min.	Max.
F	-	1.27
G	-	2.97
H	0.91	1.17
J	0.71	1.21
K	12.7	-
L	45°	

### Part Number Table

Description	Part Number
Low Power Bipolar Transistor, PNP, 45V, 200MHz, 600mW, 200mA, 120hFE	BC177
Low Power Bipolar Transistor, PNP, 45V, 200MHz, 600mW, 200mA, 180hFE	BC177B

**Important Notice :** This data sheet and its contents (the "Information") belong to the members of the AVNET 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 Pro is the registered trademark of Premier Farnell Limited 2019.

Newark.com/multicomp-pro  
Farnell.com/multicomp-pro  
Element14.com/multicomp-pro

**multicomp** PRO