

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°C	P_D	0.6	W
Power Dissipation at $T_c = 25^\circ\text{C}$ Derate Above 25°C		2.28	
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +200	$^\circ\text{C}$
Thermal Resistance			
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 μA
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	

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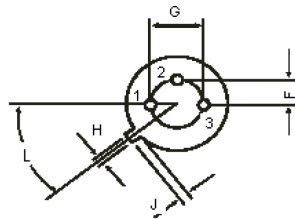
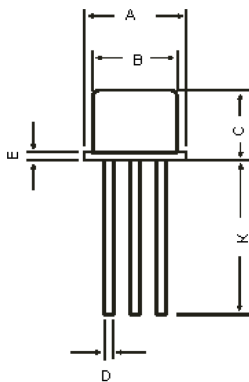
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Description	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector Knee Voltage	$V_{CE(K)}$	$I_C = 10\text{mA}$, $I_B =$ The Value for which $I_C = 11\text{mA}$ at $V_{CE} = 1\text{V}$	-	-	0.6	V
Transition Frequency	f_t	$V_{CE} = 5\text{V}$, $I_C = 10\text{mA}$ $f = 50\text{MHz}$	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

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