

BC177/BC177B Series

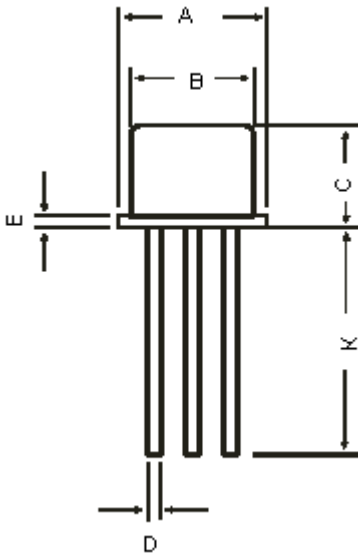
Low Power Bipolar Transistors



Feature:

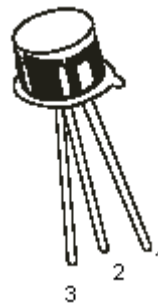
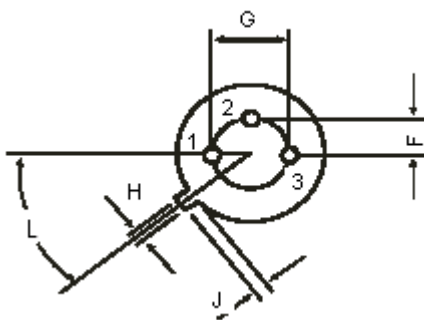
- PNP Silicon Planar Epitaxial Transistors.

TO-18 Metal Can Package



Dimensions	Minimum	Maximum
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.40	0.53
E	-	0.76
F	-	1.27
G	-	2.97
H	0.91	1.17
J	0.71	1.21
K	12.70	-
L	45°	

Dimensions : Millimetres



Pin Configuration:

1. Emitter
2. Base
3. Collector



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Absolute Maximum Ratings

Description	Symbol	BC177	Unit
Collector-Emitter Voltage	V_{CEO}	45	V
	V_{CES}	50	
Collector-Base Voltage	V_{CBO}		
Emitter-Base Voltage	V_{EBO}	5.0	
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 2.28	W mW/ $^\circ\text{C}$
Power Dissipation at $T_C = 25^\circ\text{C}$ Derate above 25°C		1.0 6.67	
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	$^\circ\text{C/W}$

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

Description	Symbol	Test Condition	Minimum	Typical	Maximum	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 4.0	nA μA
Collector-Base Voltage	V_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$	50	-	-	V
Collector-Emitter Voltage	V_{CEO}	$I_C = 2\text{mA}, I_B = 0$	45	-	-	V
Emitter-Base Voltage	V_{EBO}	$I_E = 10\mu\text{A}, I_C = 0$	5.0	-	-	V
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	$V_{CE(Sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}$	-	-	0.20 0.60	V
Base Emitter Saturation Voltage	$V_{BE(Sat)}$		-	- 0.90	0.80 -	
Base Emitter On Voltage	$V_{BE(on)}$		$I_C = 2\text{mA}, V_{CE} = 5\text{V}$	0.60	-	



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

Description	Symbol	Test Condition	Minimum	Maximum	Unit
Collector Knee Voltage	$V_{CE(K)}$	$I_C = 10\text{mA}$, $I_B =$ The value for which $I_C = 11\text{mA}$ at $V_{CE} = 1\text{V}$	-	0.60	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	C_{obo}	$V_{CB} = 10\text{V}$, $f = 1\text{MHz}$	-	4.0	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	h_{oe}	$I_C = 2\text{mA}$, $V_{CE} = 5\text{V}$ B Group	-	60	umohs

Specifications

V_{CEO} (V)	V_{CBO} maximum (V)	I_C (A)	h_{FE} minimum at $I_C = 2\text{mA}$	f_T minimum (V)	P_{tot} (mW)	Type	Package	Part Number
45	50	0.2	120	200	600	PNP	TO-18	BC177
			180					BC177B

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Notes:

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