Low Power Bipolar Transistors

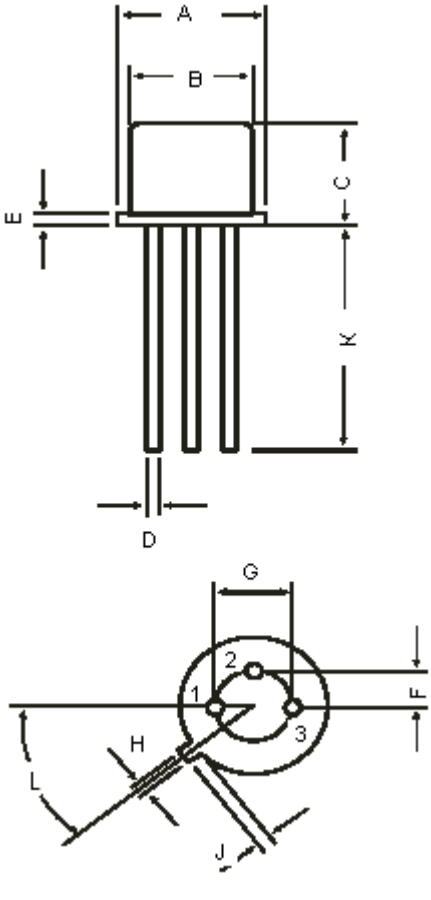
BC107 / BC108 Series

General Purpose Amplifier / Switches

Features:

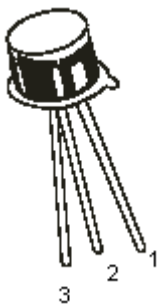
- NPN Silicon Planar Epitaxial Transistors

TO-18 Metal Can Package



Dimensions	Minimum	Maximum
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.4	0.53
E	-	0.76
F	-	1.27
G	-	2.97
H	0.91	1.17
J	0.71	1.21
K	12.7	-
L	45°	45°

Dimensions : Millimetres



Pin Configuration:

1. Emitter
2. Base
3. Collector

Absolute Maximum Ratings

Description	Symbol	BC107	BC108	Unit
Collector-Emitter Voltage	V_{CEO}	45	25	V
Collector-Base Voltage	V_{CBO}	50	30	
Emitter-Base Voltage	V_{EBO}	6	5	
Collector Current Continuous	I_C	0.2		A
Power Dissipation at T_a = 25°C Derate Above 25°C	P_D	0.6 2.28		W mW / °C
Power Dissipation at T_C = 25°C Derate Above 25°C		1 6.67		
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		°C
Thermal Resistance				
Junction to Case	$R_{th\ (j-c)}$	175		°C / W

Electrical Characteristics (T_a = 25°C unless otherwise specified)

Description	Symbol	Test Condition	Minimum	Maximum	Unit
Collector-Emitter Voltage	V_{CEO}	I_C = 2 mA, I_B = 0 BC107 BC108	45 25	-	V
Collector-Base Voltage	V_{EBO}	I_E = 10 µA, I_C = 0 BC107 BC108	6 5	-	
Collector-Cut off Current	I_{CBO}	V_{CB} = 45 V, I_E = 0 BC107 V_{CB} = 25 V, I_E = 0 BC108 T_{amb} = 125°C V_{CB} = 45 V, I_E = 0 BC107 V_{CB} = 25 V, I_E = 0 BC108	-	15 15 4 4	nA µA
DC Current	h_{FE}	I_C = 10 µA, V_{CE} = 5 V B Group C Group I_C = 2 mA, V_{CE} = 5 V BC107 BC108 A Group B Group C Group	 40 100 110 110 110 200 420	 - - 450 800 220 450 800	-
Base Emitter Saturation Voltage	$V_{BE\ (sat)}$	I_C = 10 mA, I_B = 0.5 mA I_C = 100 mA, I_B = 5 mA	-	0.83 1.05	V
Collector Emitter Saturation Voltage	$V_{CE\ (sat)}$		-	0.25 0.6	
Base Emitter on Voltage	$V_{BE\ (on)}$	I_C = 2 mA, V_{CE} = 5 V I_C = 10 mA, V_{CE} = 5 V	0.55 -	0.7 0.77	

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Electrical Characteristics (T_a = 25°C unless otherwise specified)

Description	Symbol	Test Condition	Minimum	Maximum	Unit
Collector Knee Voltage	$V_{CE\ (K)}$	I_C = 10 mA, I_B = The Value for Which I_C = 11 mA at V_{CE} = 1 V	-	0.6	V
Transition Frequency	f_t	V_{CE} = 5 V, I_C = 10 mA f = 100 MHz	150	-	MHz
Noise Figure	NF	V_{CE} = 5 V, I_C = 0.2 mA R_g = 2 kΩ F = 1 KHz, B = 200 Hz	-	10	dB
Output Capacitance	C_{obo}	V_{CB} = 10 V, f = 1 MHz	-	4.5	pF
Small Signal Current Gain	h_{fe}	All f = 1 KHz I_C = 2 mA, V_{CE} = 5 V BC107 BC108 A Group B Group C Group	 125 125 125 240 450	 500 900 260 500 900	-
Input Impedance	h_{ie}	I_C = 2 mA, V_{CE} = 5 V A Group B Group C Group	 1.6 3.2 6	 4.5 8.5 15	 KΩ KΩ
Output Admittance	h_{oe}	I_C = 2 mA, V_{CE} = 5 V A Group B Group C Group	-	 30 60 110	umhos

Specification Table

V_{CEO} (V)	V_{CBO} Maximum (V)	I_C (V)	h_{FE} Minimum at I_C = 2 mA	f_T Minimum (*Typical) (V)	P_{tot} (mW)	Type	Package	Part Number
45	50	0.1	110	150	600	NPN	TO-18	BC107
								BC107A
			200					BC107B
20	30		110		300			BC108
					600			BC108B
			200					BC108C