

# BC107/BC108 Series

## Low Power Bipolar Transistors



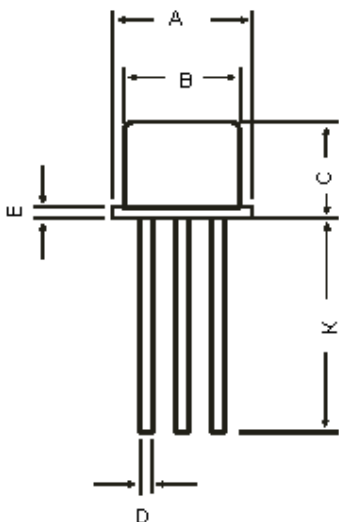
General Purpose Amplifier/Switches

Feature:

- NPN Silicon Planar Epitaxial Transistors.

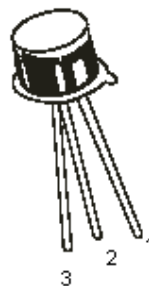
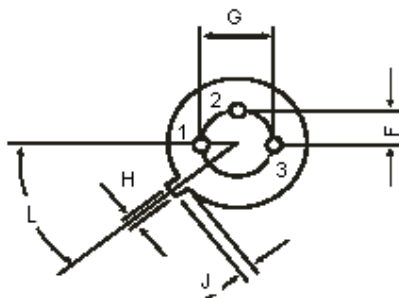


TO-18 Metal Can Package



Dimensions	Minimum	Maximum
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.40	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



# BC107/BC108 Series

## Low Power Bipolar Transistors



### 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	$V_{EBO}$	6.0	5.0	
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		$^\circ\text{C/W}$

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

Description	Symbol	Test Condition	Minimum	Maximum	Unit
Collector-Emitter Voltage	$V_{CEO}$	$I_C = 2\text{mA}, I_B = 0$ BC107 BC108	45 25	-	V
Emitter-Base Voltage	$V_{EBO}$	$I_E = 10\mu\text{A}, I_C = 0$ BC107 BC108	6.0 5.0	-	
Collector-Cut off Current	$I_{CBO}$	$V_{CB} = 45\text{V}, I_E = 0$ BC107 $V_{CB} = 25\text{V}, I_E = 0$ BC108 $T_{amb} = 125^\circ\text{C}$ $V_{CB} = 45\text{V}, I_E = 0$ BC107 $V_{CB} = 25\text{V}, I_E = 0$ BC108	-	15 15	nA $\mu\text{A}$
DC Current	$h_{FE}$	$I_C = 10\mu\text{A}, V_{CE} = 5\text{V}$ <b>B Group</b> <b>C Group</b> $I_C = 2\text{mA}, V_{CE} = 5\text{V}$ <b>BC 107</b> <b>BC 108</b>  <b>A Group</b> <b>B Group</b> <b>C Group</b>	40 100 110 110 110 200 420	- - 450 800 220 450 800	-
Base Emitter Saturation Voltage	$V_{BE(Sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$ $I_C = 100\text{mA}, I_B = 5\text{mA}$	-	0.83 1.05	V
Collector Emitter Saturation Voltage	$V_{CE(Sat)}$		-	0.25 0.60	
Base Emitter On Voltage	$V_{BE(on)}$	$I_C = 2\text{mA}, V_{CE} = 5\text{V}$ $I_C = 10\text{mA}, V_{CE} = 5\text{V}$	0.55 -	0.70 0.77	



# BC107/BC108 Series

## Low Power Bipolar Transistors



### 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	$f_t$	$V_{CE} = 5\text{V}$ , $I_C = 10\text{mA}$ , $f = 100\text{MHz}$	150	-	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	$C_{obo}$	$V_{CB} = 10\text{V}$ , $f = 1\text{MHz}$	-	4.5	pF
Small Signal Current Gain	$h_{fe}$	ALL $f = 1\text{kHz}$ $I_C = 2\text{mA}$ , $V_{CE} = 5\text{V}$ <b>BC 107</b> <b>BC 108</b>  <b>A Group</b> <b>B Group</b> <b>C Group</b>	125 125  125 240 450	500 900  260 500 900	-
Input Impedance	$h_{ie}$	$I_C = 2\text{mA}$ , $V_{CE} = 5\text{V}$ <b>A Group</b> <b>B Group</b> <b>C Group</b>	1.6 3.2 6.0	4.5 8.5 15	K $\Omega$ K $\Omega$
Output Admittance	$h_{oe}$	$I_C = 2\text{mA}$ , $V_{CE} = 5\text{V}$ <b>A Group</b> <b>B Group</b> <b>C Group</b>	-	30 60 110	umhos

### Specifications

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



# BC107/BC108 Series

## Low Power Bipolar Transistors



### Notes:

### International Sales Offices:

 <b>AUSTRALIA – Farnell InOne</b> Tel No: ++ 61 2 9645 8888 Fax No: ++ 61 2 9644 7898	 <b>FINLAND – Farnell InOne</b> Tel No: ++ 358 9 560 7780 Fax No: ++ 358 9 345 5411	 <b>NETHERLANDS – Farnell InOne</b> Tel No: ++ 31 30 241 7373 Fax No: ++ 31 30 241 7333	 <b>SWITZERLAND – Farnell InOne</b> Tel No: ++ 41 1 204 64 64 Fax No: ++ 41 1 204 64 54
 <b>AUSTRIA – Farnell InOne</b> Tel No: ++ 43 662 2180 680 Fax No: ++ 43 662 2180 670	 <b>FRANCE – Farnell InOne</b> Tel No: ++ 49 89 61 39 39 39 Fax No: ++ 33 474 68 99 90	 <b>NEW ZEALAND – Farnell InOne</b> Tel No: ++ 64 9 357 0646 Fax No: ++ 64 9 357 0656	 <b>UK – Farnell InOne</b> Tel No: ++ 44 8701 200 200 Fax No: ++ 44 8701 200 201
 <b>BELGIUM – Farnell InOne</b> Tel No: ++ 32 3 475 2810 Fax No: ++ 32 3 227 3648	 <b>GERMANY – Farnell InOne</b> Tel No: ++ 49 89 61 39 39 39 Fax No: ++ 49 89 613 59 01	 <b>NORWAY – Farnell InOne</b> Tel No: ++ 45 44 53 66 66 Fax No: ++ 45 44 53 66 02	 <b>UK – BuckHickman InOne</b> ++ 44 8450 510 150 ++ 44 8450 510 130
 <b>BRAZIL – Farnell-Newark InOne</b> Tel No: ++ 55 11 4066 9400 Fax No: ++ 55 11 4066 9410	 <b>HONG KONG – Farnell-Newark InOne</b> Tel No: ++ 852 2268 9888 Fax No: ++ 852 2268 9899	 <b>PORTUGAL – Farnell InOne</b> Tel No: ++ 34 93 475 8804 Fax No: ++ 34 93 474 5288	 <b>UK – CPC</b> ++ 44 8701 202 530 ++ 44 8701 202 531
 <b>CHINA – Farnell-Newark InOne</b> Tel No: ++86 10 6238 5152 Fax No: ++86 10 6238 5022	 <b>IRELAND – Farnell InOne</b> Tel No: ++ 353 1 830 9277 Fax No: ++ 353 1 830 9016	 <b>SINGAPORE – Farnell-Newark InOne</b> Tel No: ++ 65 6788 0200 Fax No: ++ 65 6788 0300	 <b>EXPORT – Farnell InOne</b> Tel No: ++ 44 8701 200 208 Fax No: ++ 44 8701 200 209
 <b>DENMARK – Farnell InOne</b> Tel No: ++ 45 44 53 66 44 Fax No: ++ 45 44 53 66 06	 <b>ITALY – Farnell InOne</b> Tel No: ++ 39 02 93 995 200 Fax No: ++ 39 02 93 995 300	 <b>SPAIN – Farnell InOne</b> Tel No: ++ 34 93 475 8805 Fax No: ++ 34 93 474 5107	
 <b>ESTONIA – Farnell InOne</b> Tel No: ++ 358 9 560 7780 Fax No: ++ 358 9 345 5411	 <b>MALAYSIA – Farnell-Newark InOne</b> Tel No: ++ 60 3 7873 8000 Fax No: ++ 60 3 7873 7000	 <b>SWEDEN – Farnell InOne</b> Tel No: ++ 46 8 730 50 00 Fax No: ++ 46 8 83 52 62	

For enquiries from all other markets

<http://www.farnellinone.com>  
<http://www.buckhickmaninone.com>  
<http://www.cpc.co.uk>

**Disclaimer** This data sheet and its contents (the "Information") belong to the Premier Farnell Group (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 2004.

