



### Pin Configuration

1. Emitter
2. Base
3. Collector

### Features:

- NPN Silicon Power Switching Transistors.
- Medium Power Amplifier and Switching Applications

### Absolute Maximum Ratings:

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

Characteristic	Symbol	BC140-16	BC141-16	Unit
Collector Emitter Voltage	$V_{CBO}$	40	60	V
Collector Base Voltage	$V_{CES}$	80	100	
Emitter Base Voltage	$V_{EBO}$	7		
Collector Current Continuous	$I_C$	1		A
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	0.8		W
Power Dissipation at $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$		4		
Operating Storage Temperature Range	$T_j, T_{stg}$	-65 to +200		$^\circ\text{C}$

### Thermal Resistance

Junction to Ambient in Free Air	$R_{th(j-a)}$	219	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	44	

## Electrical Characteristics:

(T<sub>a</sub> = +25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector Emitter Voltage	V <sub>CES</sub>	I <sub>C</sub> = 100μA, V <sub>BE</sub> = 0 BC140-16 BC141-16	80 100	-	-	V
	*V <sub>CEO</sub>	I <sub>C</sub> = 30mA, I <sub>B</sub> = 0 BC140-16 BC141-16	40 60			
Emitter Base Voltage	V <sub>EBO</sub>	I <sub>E</sub> = 100μA, I <sub>C</sub> = 0	7	-	-	
Collector Cut off Current	I <sub>CES</sub>	V <sub>CE</sub> = 60V, V <sub>BE</sub> = 0	-	-	100	nA
		V <sub>CE</sub> = 60V, V <sub>BE</sub> = 0, T <sub>a</sub> = 150°C				μA
DC Current Gain	*h <sub>FE</sub>	I <sub>C</sub> = 100mA, V <sub>CE</sub> = 1V BC140-16/BC141-16 Group-6 Group-10 Group-16	40 40 63 100	-	-	-
		I <sub>C</sub> = 1A, V <sub>CE</sub> = 1V BC140-16/BC141-16 Group-6 Group-10 Group-16	26 15 20 30			
Collector Emitter Saturation Voltage	*V <sub>CE(sat)</sub>	I <sub>C</sub> = 1A, I <sub>B</sub> = 0.1A	-	-	1	V
Base Emitter on Voltage	*V <sub>BE(on)</sub>	I <sub>C</sub> = 1A, V <sub>CE</sub> = 1V	-	-	2	V

## Dynamic Characteristics

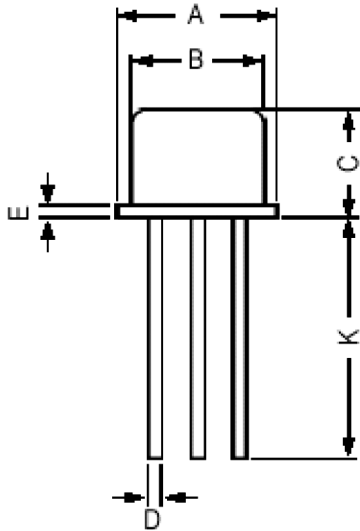
Transition Frequency	f <sub>T</sub>	I <sub>C</sub> = 50mA, V <sub>CE</sub> = 10V, f = 20MHz	50	-	-	MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz	-	-	25	pF
Input Capacitance	C <sub>ib</sub>	V <sub>EB</sub> = 0.5V, I <sub>C</sub> = 0, f = 1MHz			80	

## Switching Characteristics

Turn On Time	t <sub>on</sub>	I <sub>C</sub> = 150mA, I <sub>B1</sub> = 7.5mA	-	-	250	ns
Turn Off Time	t <sub>off</sub>	I <sub>C</sub> = 150mA, I <sub>B1</sub> = I <sub>B2</sub> = 7.5mA			850	

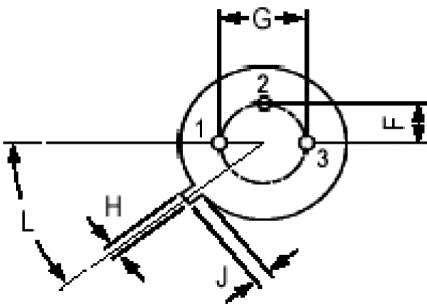
\*Pulsed : Pulse Duration ≤300μs, Duty Cycle ≤1%

## TO-39 Metal Can Package



Dim.	Min.	Max.
A	8.5	9.39
B	7.74	8.5
C	6.09	6.6
D	0.4	0.53
E	-	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.7	-
L	42°	48°

Dimensions : Millimetres



### Pin Configuration

1. Emitter
2. Base
3. Collector

### Part Number Table

Description	Part Number
Transistor, NPN, TO-39	BC140-16
	BC141-16

**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.