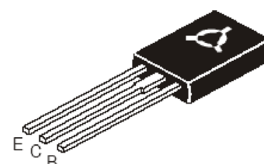
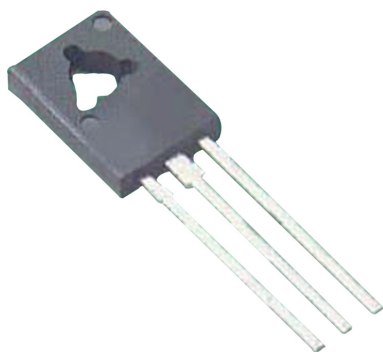


# NPN Transistor TO-18



### Pin Configuration:

1. Emitter
2. Collector
3. Base

## Absolute Maximum Ratings

Description	Symbol	BD139	Unit
Collector-emitter voltage	$V_{CEO}$	80	V
Collector-emitter voltage ( $R_{BE} = 1k\Omega$ )	$V_{CER}$	100	
Collector-base voltage	$V_{CBO}$		
Emitter base voltage	$V_{EBO}$	5	
Collector current	$I_C$	1.5	A
Collector peak current	$I_{CM}$	2	
Base current	$I_B$	0.5	
Power dissipation at $T_a = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P$	1.25 10	W mW/ $^\circ\text{C}$
Power dissipation at $T_c = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P$	12.5 100	W mW/ $^\circ\text{C}$
Power dissipation at $T_c = 70^\circ\text{C}$	$P_D$	8	W
Operating and storage junction Temperature range	$T_j, T_{stg}$	-55 to +150	$^\circ\text{C}$

## Thermal Characteristics

Junction to ambient in free air	$R_{th(j-a)}$	100	$^\circ\text{C}/\text{W}$
Junction to case	$R_{th(j-c)}$	10	$^\circ\text{C}/\text{W}$

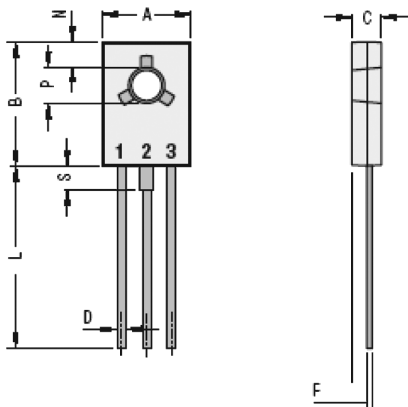
# NPN Transistor TO-126



## Electrical characteristics (Tc = 25°C unless specified otherwise)

Description	Symbol	Test Condition	Min.	Max.	Unit
Collector emitter sustaining voltage	*V <sub>CEO (sus)</sub>	I <sub>C</sub> = 30mA, I <sub>B</sub> = 0	80		V
Collector cut off current	I <sub>CBO</sub>	V <sub>CB</sub> = 30V, I <sub>E</sub> = 0		0.1	μA
		V <sub>CB</sub> = 30V, I <sub>E</sub> = 0, T = 125°C		10	
Emitter cut off current	I <sub>EBO</sub>	V <sub>EB</sub> = 5V, I <sub>C</sub> = 0			
DC current gain	*h <sub>FE</sub>	I <sub>C</sub> = 0.005A, V <sub>CE</sub> = 2V	25	250	-
		I <sub>C</sub> = 0.15A, V <sub>CE</sub> = 2V	40		
		I <sub>C</sub> = 0.5A, V <sub>CE</sub> = 2V	25		
Collector emitter sustaining voltage	*V <sub>CEO (sus)</sub>	I <sub>C</sub> = 30mA, I <sub>B</sub> = 0 BD139	80		V
Collector cut off current	I <sub>CBO</sub>	V <sub>CB</sub> = 30V, I <sub>E</sub> = 0		0.1	μA
		V <sub>CB</sub> = 30V, I <sub>E</sub> = 0, T = 125°C		10	
Emitter cut off current	I <sub>EBO</sub>	V <sub>EB</sub> = 5V, I <sub>C</sub> = 0			
DC current gain	*h <sub>FE</sub>	I <sub>C</sub> = 0.005A, V <sub>CE</sub> = 2V	25	250	-
		I <sub>C</sub> = 0.15A, V <sub>CE</sub> = 2V	40		
		I <sub>C</sub> = 0.5A, V <sub>CE</sub> = 2V	25		

\*Pulse test: -Pulse width=300ms, duty cycle = 2%.



### Pin Configuration:

1. Emitter
2. Collector
3. Base

Dimensions	Min.	Max.
A	7.2	8.38
B	10.16	11.43
C	2.29	3.04
D	0.64	0.88
E	2.04	2.285
F	0.39	0.63
G	4.07	5.08
L	15	16.63
M	0.89	1.65
N	3.31	4.44
P	2.54	3.3
S	-	2.54

Dimensions : Millimetres

### Part Number Table

Description	Part Number
Transistor, NPN, TO-126	BD139-10

**Important Notice :** This data sheet and its contents (the "Information") belong to the members of the Premier Farnell 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 is the registered trademark of the Group. © Premier Farnell plc 2012.