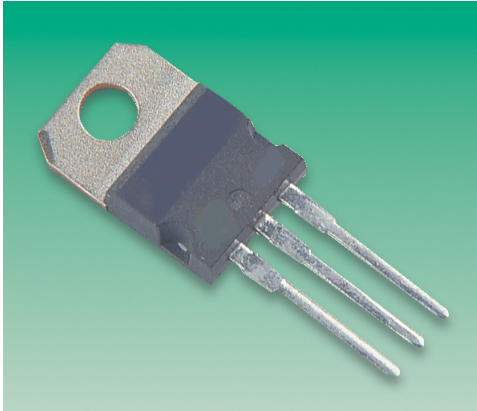


BD239C

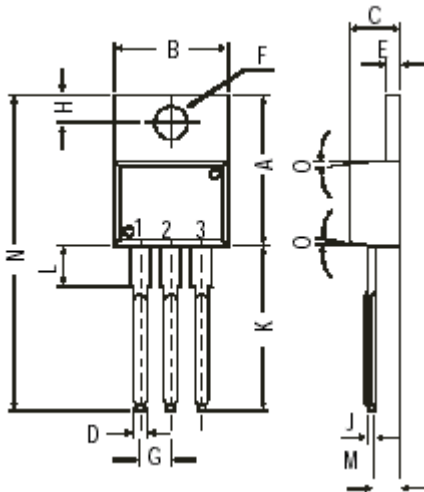
Power Transistor



Features:

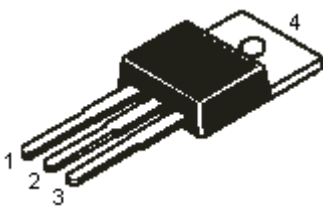
- NPN Plastic Power Transistors.
- General Purpose Amplifier and Switching Applications.

TO-220 Plastic Package



Dimensions	Minimum	Maximum
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D	-	0.90
E	1.15	1.40
F	3.75	3.88
G	2.29	2.79
H	2.54	3.43
J	-	0.56
K	12.70	14.73
L	2.80	4.07
M	2.03	2.92
N	-	31.24
O	7°	

Dimensions : Millimetres



Pin Configuration

1. Base
2. Collector
3. Emitter
4. Collector



BD239C

Power Transistor



Absolute Maximum Ratings

Parameters	Symbol	-	BD239C	Unit
Collector-Base Voltage (Open Emitter)	V_{CB0}	maximum	115	V
Collector-Emitter Voltage (Open Base)	V_{CEO}		100	
Collector Current	I_C		2.0	A
Total Power Dissipation upto $T_C = 25^\circ\text{C}$	P_{tot}		30	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Collector-Emitter Saturation Voltage $I_C = 1\text{A}; I_B = 0.2\text{A}$	$V_{CE(sat)}$		0.7	V
DC Current Gain $I_C = 0.2\text{A}; V_{CE} = 4\text{V}$	h_{FE}	minimum	40	-

Ratings (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameters	Symbol	-	BD239C	Unit	
Collector-Base Voltage (Open Emitter)	V_{CB0}	maximum	115	V	
Collector-Emitter Voltage (Open Base)	V_{CEO}		100		
Emitter-Base Voltage (Open Collector)	V_{EBO}		5.0		
Collector Current	I_C		2.0	A	
Collector Current (Peak Value)	I_{CM}		4.0		
Base Current	I_B		0.6		
Total Power Dissipation upto $T_A = 25^\circ\text{C}$ Derate Above 25°C	P_{tot}		2.0	W $\text{W}/^\circ\text{C}$	
Total Power Dissipation upto $T_C = 25^\circ\text{C}$ Derate Above 25°C			0.016		
Junction Temperature	T_j		30	150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-	-65 to +150	
Thermal Resistance					
From Junction to Case	$R_{th(j-c)}$	-	4.167	$^\circ\text{C}/\text{W}$	
From Junction to Ambient	$R_{th(j-a)}$	-	62.5		

BD239C

Power Transistor



Characteristics $T_{amb} = 25^{\circ}\text{C}$ unless otherwise specified

Parameters	Symbol	-	BD239C	Unit
Collector Cut off Current $I_B = 0; V_{CE} = 60\text{V}$ $V_{BE} = 0; V_{CE} = V_{CEO}$	I_{CEO} I_{CES}	maximum	0.3 0.2	mA
Emitter Cut off Current $I_C = 0; V_{EB} = 5\text{V}$	I_{EBO}		1.0	
Breakdown Voltages $I_C = 30\text{mA}; I_B = 0$ $I_C = 1\text{mA}; I_E = 0$ $I_E = 1\text{mA}; I_C = 0$	$V_{CEO(sus)}^*$ V_{CBO} V_{EBO}	minimum	100 115 5.0	V
Saturation Voltage $I_C = 1\text{A}; I_B = 0.2\text{A}$	$V_{CE(sat)}^*$	maximum	0.7	
Base Emitter On Voltage $I_C = 1\text{A}; V_{CE} = 4\text{V}$	$V_{BE(on)}^*$		1.3	
DC Current Gain $I_C = 0.2\text{A}; V_{CE} = 4\text{V}$ $I_C = 1\text{A}; V_{CE} = 4\text{V}$	h_{FE}^*	minimum	40 15	-
Small Signal Current Gain $I_C = 0.2\text{A}; V_{CE} = 10\text{V}; f = 1\text{KHz}$	h_{fe}		20	-
Transition Frequency $I_C = 0.2\text{A}; V_{CE} = 10\text{V}; f = 1\text{MHz}$	$f_T (1)$		3	MHz

* Pulse Test : Pulse Width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$.

(1) $f_T = |h_{fe}| \cdot f_{test}$.

Specifications

$I_{C(av)}$ maximum (A)	V_{CEO} maximum (V)	h_{FE} minimum at $I_C = 0.2\text{A}$	P_{tot} at 25°C (W)	Type	Package	Part Number
2	100	40	30	NPN	TO-220	BD239C

BD239C

Power Transistor



Notes:

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