

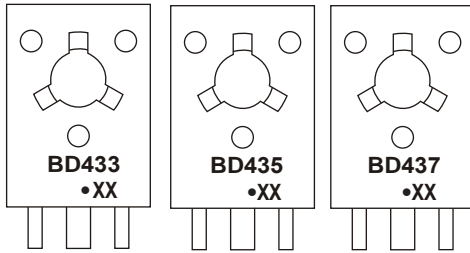
# TO-126 Plastic-Encapsulate Transistors

## BD433 / BD435 / BD437 TRANSISTOR (NPN)

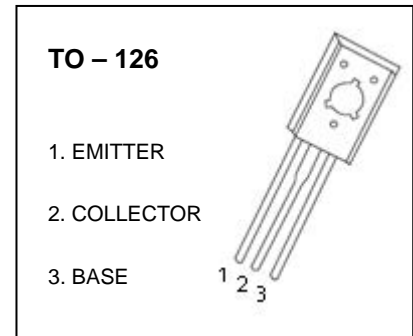
### FEATURES

- Amplifier and Switching Applications
- Complement To BD434, BD436 And BD438

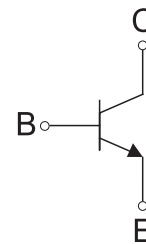
### MARKING



BD433, BD435, BD437 = Device code  
 Solid dot = Green molding compound device, if none, the normal device  
 XX = Code



### Equivalent Circuit



### ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
BD433	TO-126	Bulk	200pcs/Bag
BD435	TO-126	Bulk	200pcs/Bag
BD437	TO-126	Bulk	200pcs/Bag
BD433-TU	TO-126	Tube	60pcs/Tube
BD435-TU	TO-126	Tube	60pcs/Tube
BD437-TU	TO-126	Tube	60pcs/Tube

### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	BD433	22
		BD435	32
		BD437	45
V <sub>CEO</sub>	Collector-Emitter Voltage	BD433	22
		BD435	32
		BD437	45
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current –Continuous	4	A
P <sub>C</sub>	Collector Power Dissipation	1.25	W
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-55-150	°C

## ELECTRICAL CHARACTERISTICS

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Collector-base breakdown voltage	$V_{(BR)CBO}$	BD433	22			V	
		BD435	32				
		BD437	45				
Collector-emitter breakdown voltage	$V_{CE(SUS)}^{(1)}$	BD433	22			V	
		BD435	32				
		BD437	45				
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V	
Collector cut-off current	$I_{CBO}$	$V_{CB}=22\text{V}, I_E=0$	BD433			100	$\mu\text{A}$
		$V_{CB}=32\text{V}, I_E=0$	BD435				
		$V_{CB}=45\text{V}, I_E=0$	BD437				
Collector cut-off current	$I_{CEO}$	$V_{CE}=22\text{V}, I_E=0$	BD433			100	$\mu\text{A}$
		$V_{CE}=32\text{V}, I_E=0$	BD435				
		$V_{CE}=45\text{V}, I_E=0$	BD437				
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5\text{V}, I_E=0$			1	mA	
DC current gain	$h_{FE(1)}^{(1)}$	$V_{CE}=1\text{V}, I_C=500\text{mA}$	85		375		
	$h_{FE(2)}^{(1)}$	$V_{CE}=5\text{V}, I_C=10\text{mA}$	BD433/BD435 BD437	40 30			
	$h_{FE(3)}^{(1)}$	$V_{CE}=1\text{V}, I_C=2\text{A}$	BD433/BD435 BD437	50 40			
Collector-emitter saturation voltage	$V_{CE(sat)}^{(1)}$	$I_C=2\text{A}, I_B=0.2\text{A}$	BD433/BD435 BD437		0.5 0.6	V	
Base-emitter voltage	$V_{BE}^{(1)}$	$V_{CE}=1\text{V}, I_C=2\text{A}$	BD433/BD435 BD437		1.1 1.2	V	
Transition frequency	$f_T$	$V_{CE}=1\text{V}, I_C=250\text{mA}$	3			MHz	

<sup>(1)</sup>Pulse test.

# TO-126 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.500	2.900	0.098	0.114
A1	1.100	1.500	0.043	0.059
b	0.660	0.860	0.026	0.034
b1	1.170	1.370	0.046	0.054
c	0.450	0.600	0.018	0.024
D	7.400	7.800	0.291	0.307
E	10.600	11.000	0.417	0.433
e	2.290 TYP		0.090 TYP	
e1	4.480	4.680	0.176	0.184
h	0.000	0.300	0.000	0.012
L	15.300	15.700	0.602	0.618
L1	2.100	2.300	0.083	0.091
P	3.900	4.100	0.154	0.161
Φ	3.000	3.200	0.118	0.126

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