

## TO-126 Plastic-Encapsulate Transistors

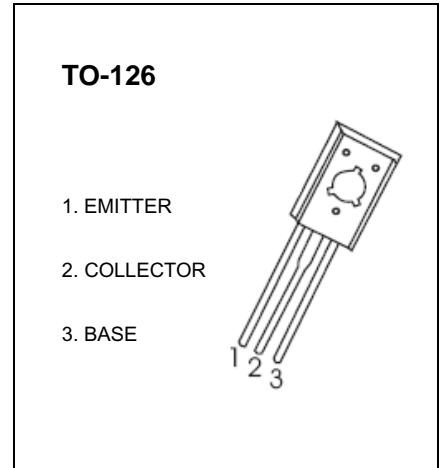
### BD233/235/237 TRANSISTOR (NPN)

#### FEATURES

- Complement to BD234/236/238 respectively

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

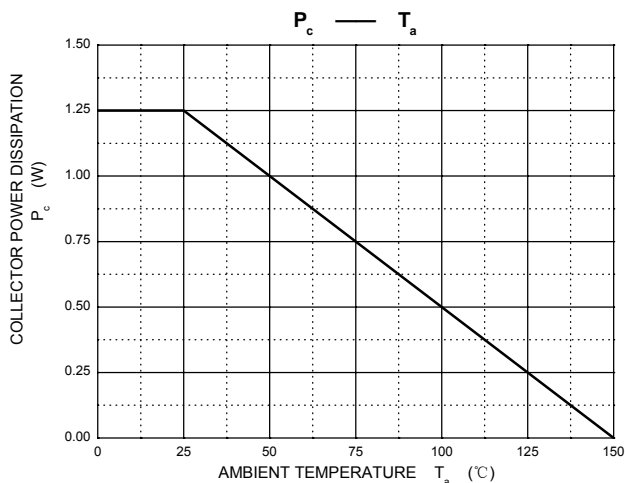
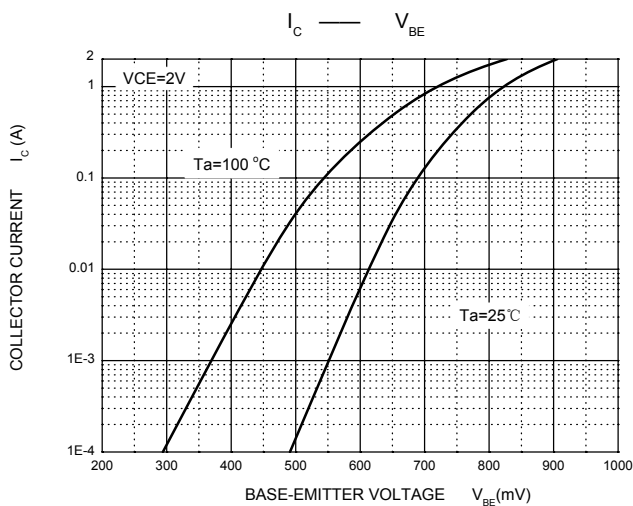
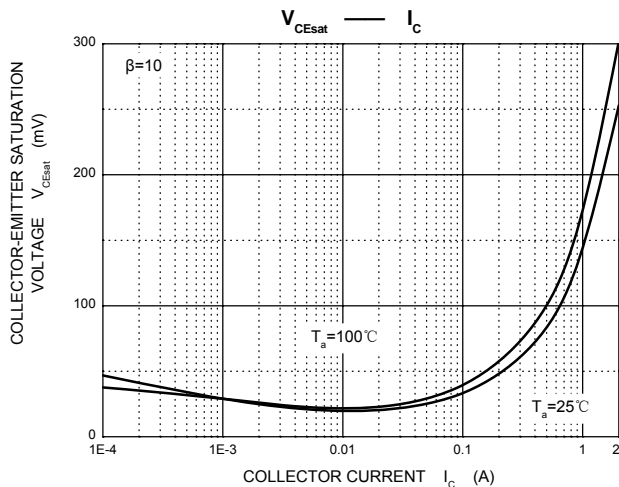
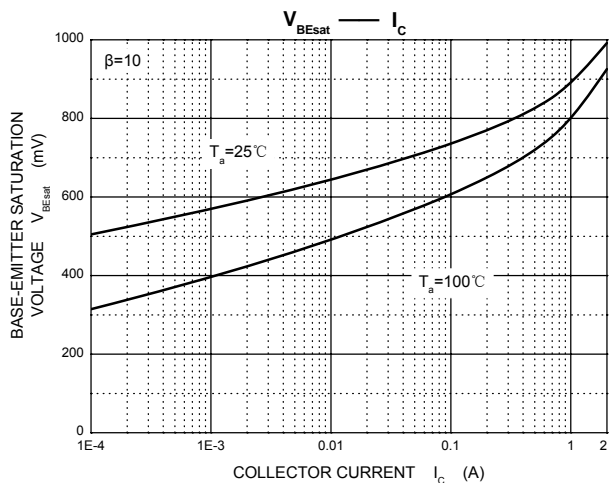
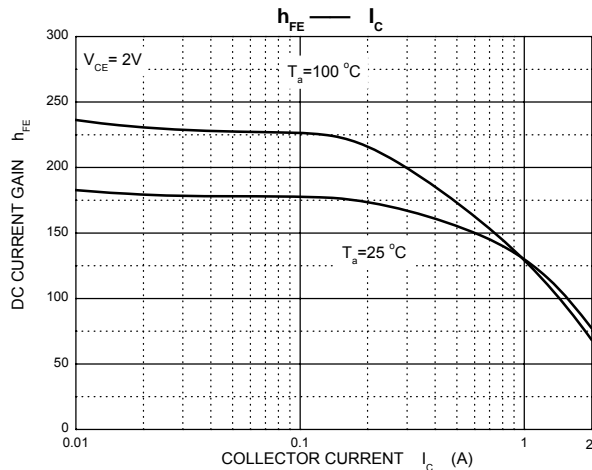
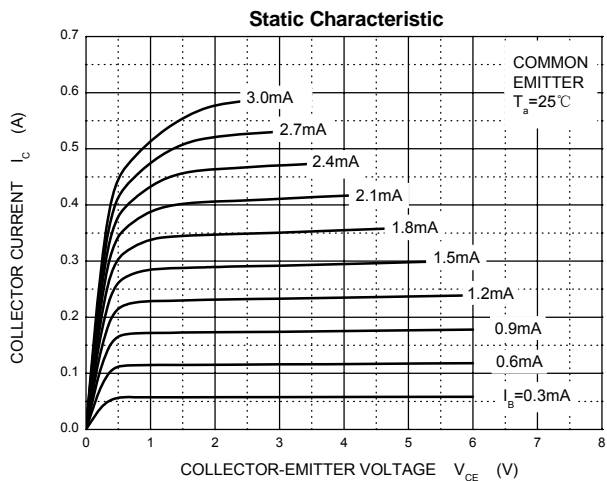
Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	BD233	45
		BD235	60
		BD237	100
V <sub>CEO</sub>	Collector-Emitter Voltage	BD233	45
		BD235	60
		BD237	80
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current –Continuous	2	A
P <sub>C</sub>	Collector Dissipation	1.25	W
P <sub>C</sub>	Collector Dissipation (T <sub>c</sub> =25°C)	25	W
R <sub>θJA</sub>	Thermal Resistance from Junction to Ambient	100	°C/W
R <sub>θJC</sub>	Thermal Resistance from Junction to Case	5	°C/W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55~+150	°C



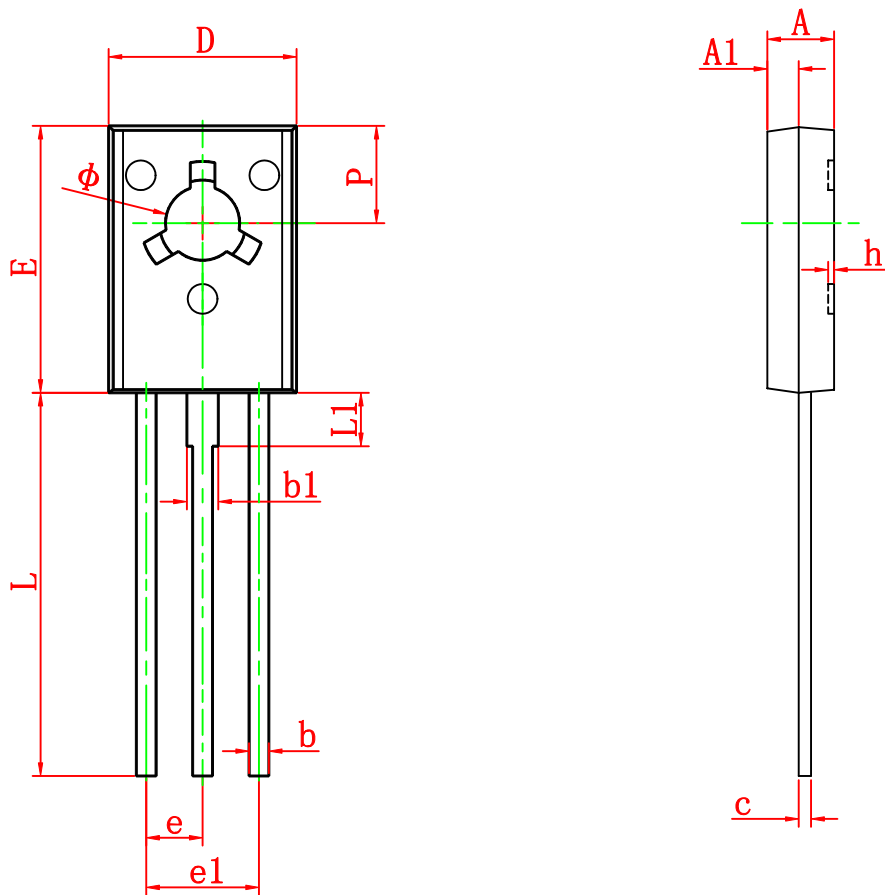
#### ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	BD233	V <sub>(BR)CBO</sub> I <sub>C</sub> = 1mA, I <sub>E</sub> =0	45		V
	BD235		60		
	BD237		100		
Collector-emitter breakdown voltage	BD233	V <sub>(BR)CEO</sub> I <sub>C</sub> = 100mA, I <sub>B</sub> =0	45		V
	BD235		60		
	BD237		80		
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 1mA, I <sub>C</sub> =0	5		V
Collector cut-off current	BD233	I <sub>CBO</sub> V <sub>CB</sub> = 45V, I <sub>E</sub> =0		100	μA
	BD235		V <sub>CB</sub> = 60V, I <sub>E</sub> =0		
	BD237		V <sub>CB</sub> = 100V, I <sub>E</sub> =0		
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 5V, I <sub>C</sub> =0		1	mA
DC current gain	H <sub>FE(1)</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> =150mA	40		
	H <sub>FE(2)</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> = 1A	25		
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =1A, I <sub>B</sub> = 100m A		0.6	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =250mA f =10MHZ	3		MHz

# Typical Characteristics



# 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