

TO-18 Plastic-Encapsulate Transistors

BD233/235/237 TRANSISTOR (NPN)

FEATURES

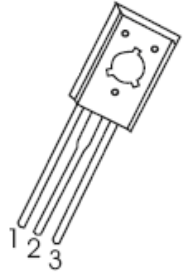
- Complement to BD234/236/238 respectively

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage BD233	45	V
	BD235	60	
	BD237	100	
V_{CEO}	Collector-Emitter Voltage BD233	45	V
	BD235	60	
	BD237	80	
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current –Continuous	2	A
P_C	Collector Dissipation	1.25	W
P_C	Collector Dissipation ($T_c=25^{\circ}\text{C}$)	25	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	100	$^{\circ}\text{C/W}$
$R_{\theta JC}$	Thermal Resistance from Junction to Case	5	$^{\circ}\text{C/W}$
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

TO-18

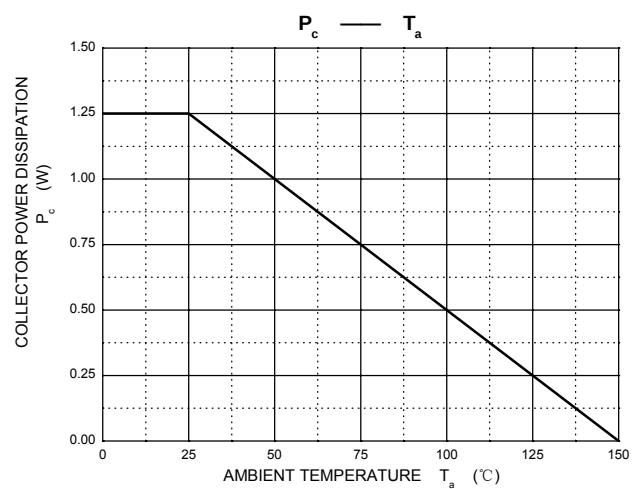
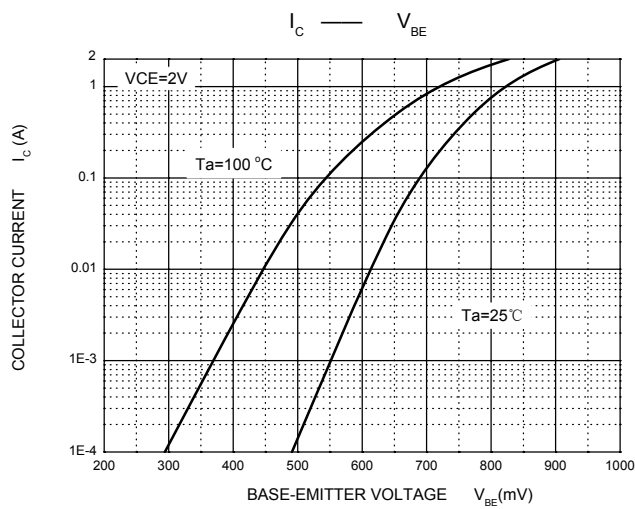
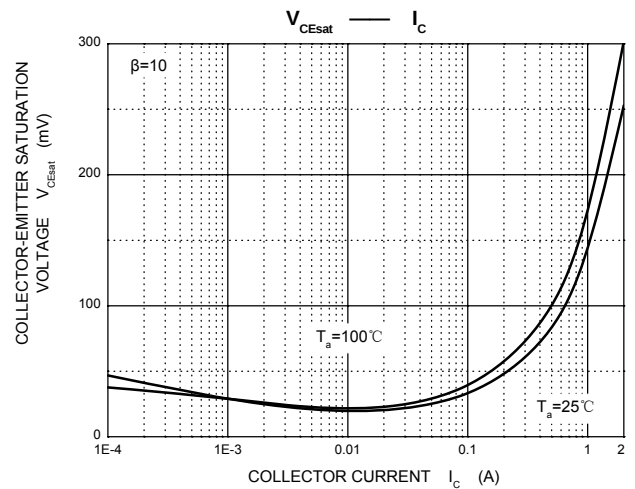
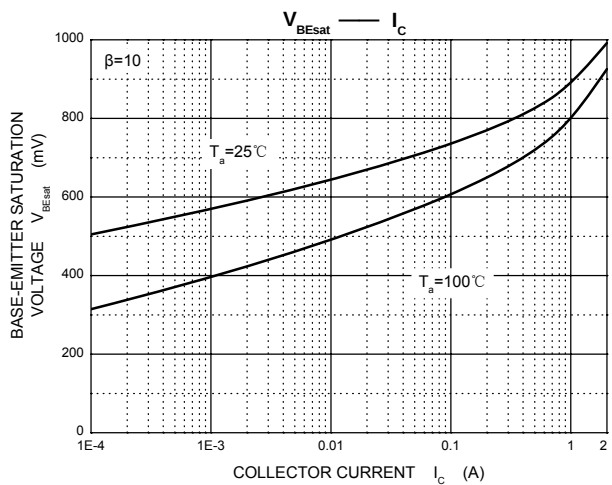
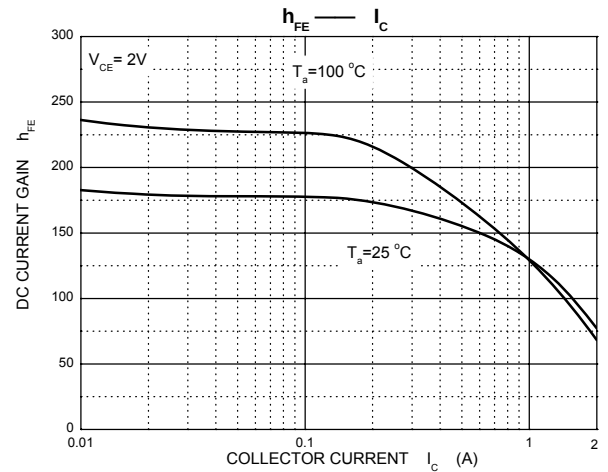
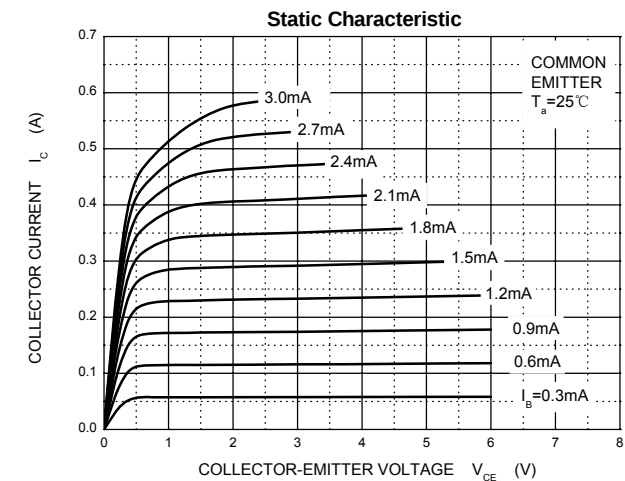
1. EMITTER
2. COLLECTOR
3. BASE



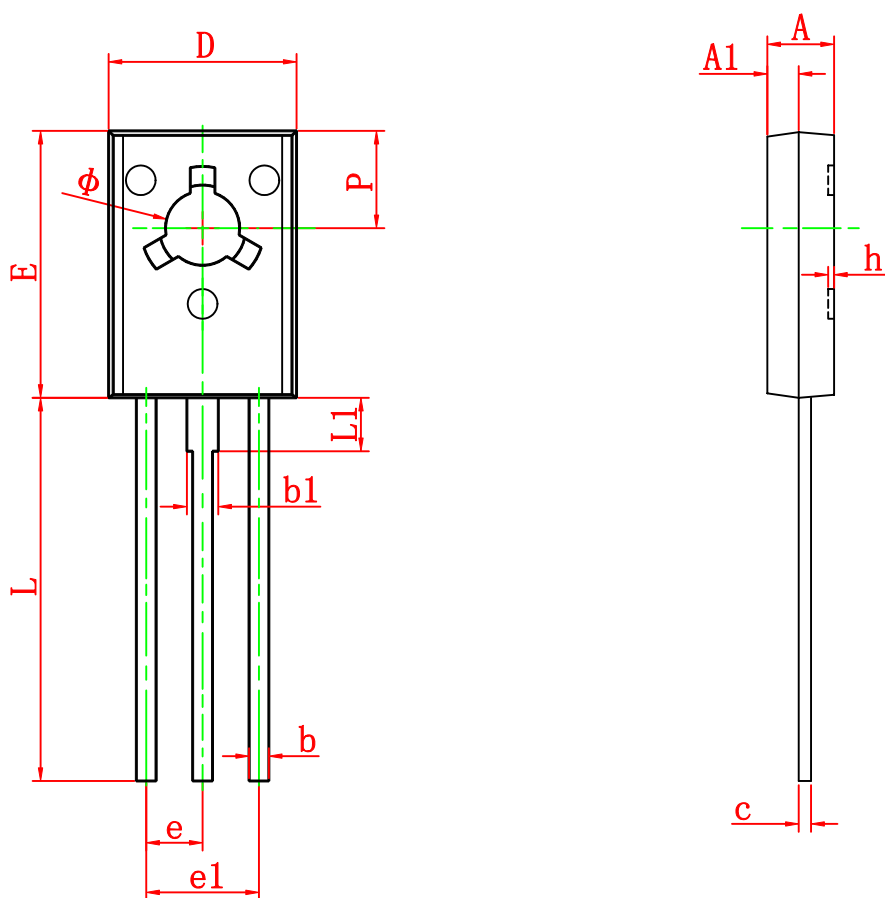
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	BD233	$I_C = 1\text{mA}, I_E = 0$	45		V
	BD235		60		
	BD237		100		
Collector-emitter breakdown voltage	BD233	$I_C = 100\text{mA}, I_B = 0$	45		V
	BD235		60		
	BD237		80		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 1\text{mA}, I_C = 0$	5		V
Collector cut-off current	BD233	$V_{CB} = 45\text{V}, I_E = 0$			μA
	BD235	$V_{CB} = 60\text{V}, I_E = 0$		100	
	BD237	$V_{CB} = 100\text{V}, I_E = 0$			
Emitter cut-off current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$		1	mA
DC current gain	$H_{FE(1)}$	$V_{CE} = 2\text{V}, I_C = 150\text{mA}$	40		
	$H_{FE(2)}$	$V_{CE} = 2\text{V}, I_C = 1\text{A}$	25		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1\text{A}, I_B = 100\text{mA}$		0.6	V
Transition frequency	f_T	$V_{CE} = 10\text{V}, I_C = 250\text{mA}$ $f = 10\text{MHz}$	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