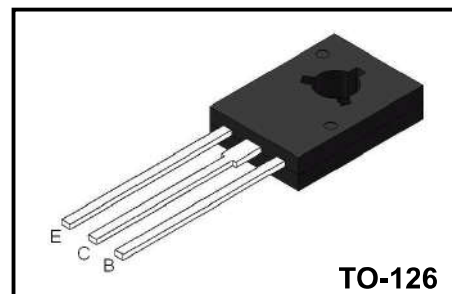


NPN Plastic-Encapsulate Transistors

Medium Power Linear and Switching Applications

†Complement to BD234, BD236 and BD238 respectively



Marking Code	
BD233	YFW BD233
BD235	YFW BD235
BD237	YFW BD237

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Value			Unit
		BD233	BD235	BD237	
Collector-Base Voltage	BV_{CBO}	45	60	100	V
Collector-Emitter Voltage	BV_{CEO}	45	60	80	V
Emitter-Base Voltage	BV_{EBO}	5			V
Collector Current	I_C	2			A
Collector Power Dissipation	P_C	36			W
Junction Temperature	T_j	150			°C
Storage Temperature	T_{stg}	-55~150			°C

Electrical Characteristics (Ta=25°C)

Parameter		Symbol	Conditions	Value			Unit
				Min	Typ	Max	
Collector-base breakdown voltage	BD233 BD235 BD237	BV_{CBO}	$I_C = 100\mu A, I_E = 0$	45 60 100			V
Collector-emitter breakdown voltage	BD233 BD235 BD237	BV_{CEO}	$I_C = 100mA, I_B = 0$	45 60 80			V
Emitter-base breakdown voltage		BV_{EBO}	BV_{EBO}	5			V
Collector cut-off current	BD233 BD235 BD237	I_{CBO}	$V_{CB} = 45V, I_E = 0$ $V_{CB} = 60V, I_E = 0$ $V_{CB} = 100V, I_E = 0$			100	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = 5V, I_C = 0$			1	mA
DC current gain		h_{FE}	$V_{CE} = 2V, I_C = 0.15A$ $V_{CE} = 2V, I_C = 1A$	40 25			
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 1A, I_B = 0.1A$			0.6	V
Base -emitter saturation voltage		$V_{BE(on)}$	$V_{CE} = 2V, I_C = 1A$			1.3	V
Transition frequency		f_T	$V_{CE} = 10V, I_B = 0.25A$	3			MHz

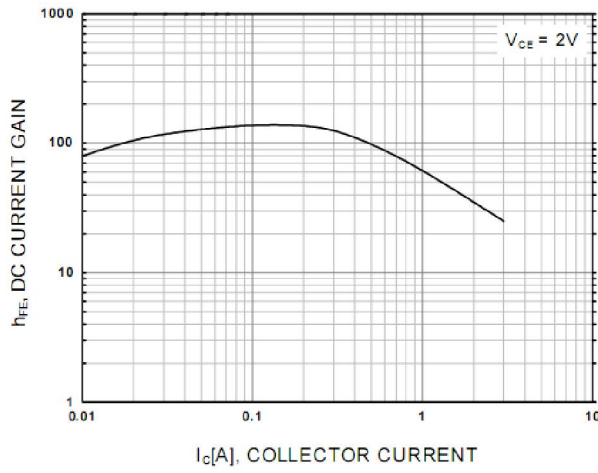
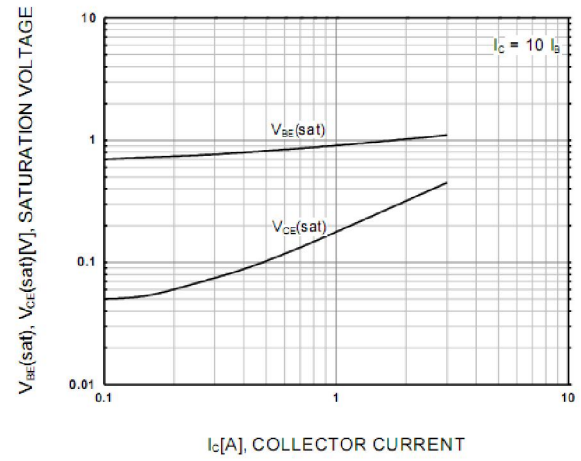


Figure 1. DC current Gain



**Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage**

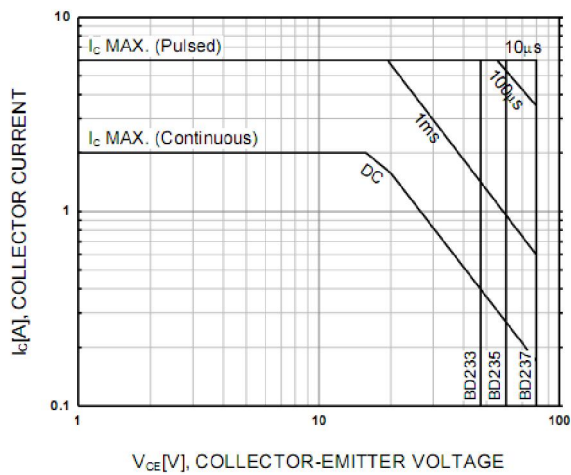


Figure 3. Safe Operating Area

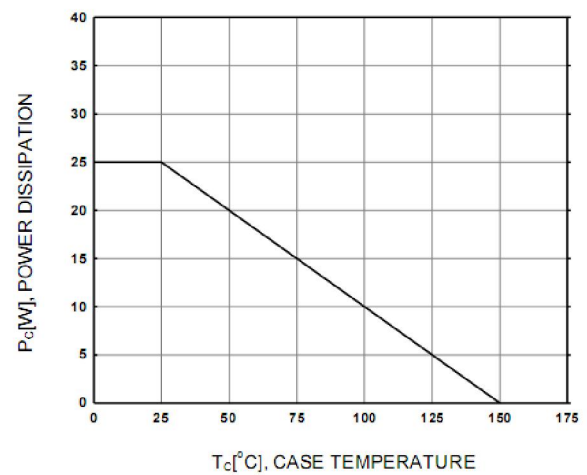


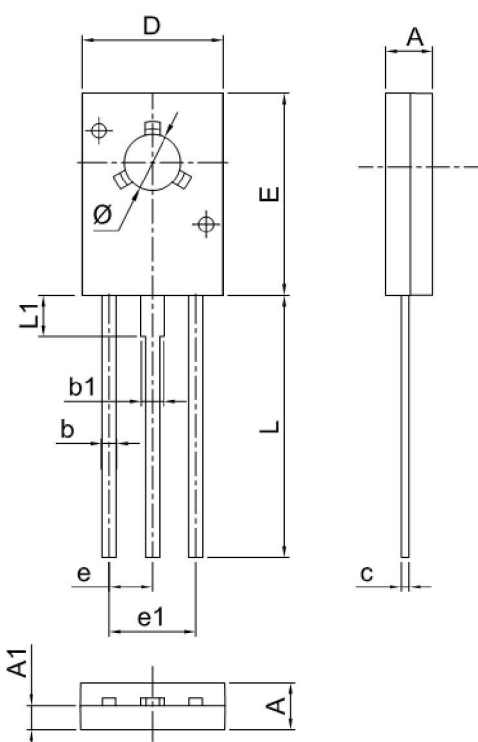
Figure 4. Power Derating

Ordering information

Package	Packing Description	Base Quantity
TO-126	Bulk	500pcs/Bag

Package Dimensions

TO-126

	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.40	2.80	0.094	0.110
A1	1.00	1.40	0.039	0.055
b	0.66	0.86	0.026	0.034
b1	1.17	1.37	0.046	0.054
c	0.40	0.60	0.016	0.024
D	7.30	7.70	0.287	0.303
E	10.60	11.00	0.417	0.433
e	2.25	2.33	0.089	0.092
e1	4.50	4.66	0.177	0.183
L	14.00	15.00	0.551	0.591
L1	1.90	2.50	0.075	0.098
Φ	3.10	3.30	0.122	0.130

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