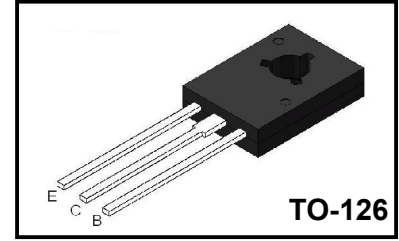


PNP Plastic-Encapsulate Transistors

Medium Power Linear and Switching Applications

➤ Complement to BD135, BD137 and BD137 respectively

Product Specification Classification

Part Number	Package	Marking	Pack
BD136	TO-126	BD136 XXXX	500PCS/box
BD138	TO-126	BD138XXXX	500PCS/box
BD140	TO-126	BD140 XXXX	500PCS/box

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Value			Unit
		BD136	BD138	BD140	
Collector-Base Voltage	BV_{CBO}	-45	-60	-80	V
Collector-Emitter Voltage	BV_{CEO}	-45	-60	-80	V
Emitter-Base Voltage	BV_{EBO}	-5			V
Collector Current (DC)	I_C	-1.5			A
Collector Current (Pulse)	I_{CP}	-3.0			A
Collector Power Dissipation	Ta=25°C	1.25			W
	Tc=25°C	12.5			
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-Emitter Sustaining Voltage*	BD136 BD138 BD140 BV_{CES}	$I_C = -10mA, I_B = 0$	-45 -60 -80			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = -100\mu A, I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -30V, I_E = 0$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5V, I_C = 0$			-10	μA
DC current gain*	h_{FE1}	$V_{CE} = -2V, I_C = -5mA$	25			
	h_{FE2}	$V_{CE} = -2V, I_C = -0.5A$	25			
	h_{FE3}	$V_{CE} = -2V, I_C = -150mA$	40		250	
Collector-emitter saturation voltage*	$V_{CE(sat)}$	$I_C = -500mA, I_B = -50mA$			-0.5	V
Base-emitter saturation voltage*	$V_{BE(on)}$	$V_{CE} = -2V, I_C = -0.5A$			-1	V

 * Pulse Test : PW=350 μ s, Duty Cycle = 2% Pulsed

hFE3 Classification

Classification	6	10	16
Range	40-100	63-160	100-250

Typical Characteristics



Figure 1. DC current Gain

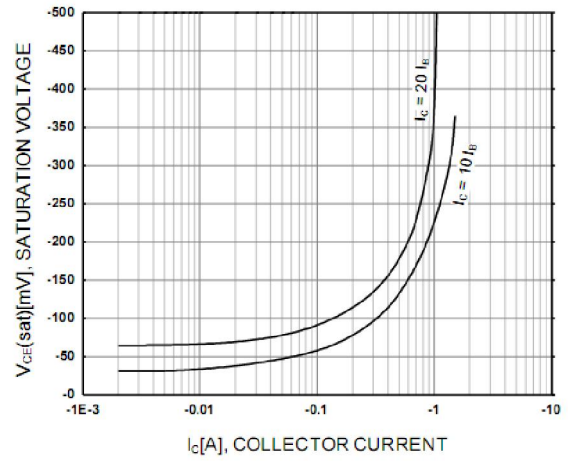


Figure 2. Collector-Emitter Saturation Voltage

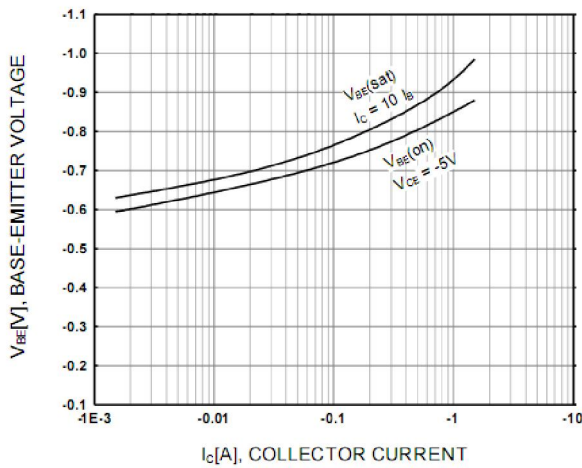


Figure 3. Base-Emitter Voltage

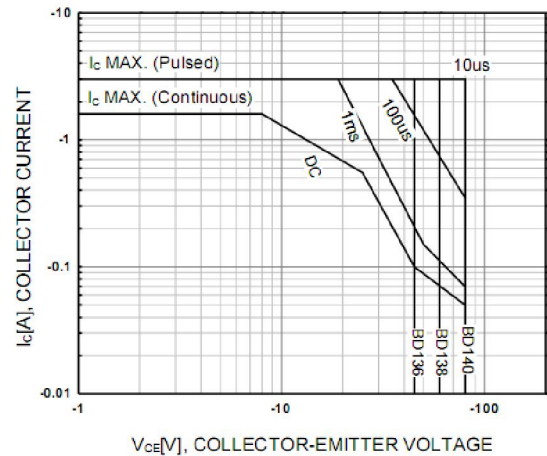


Figure 4. Safe Operating Area

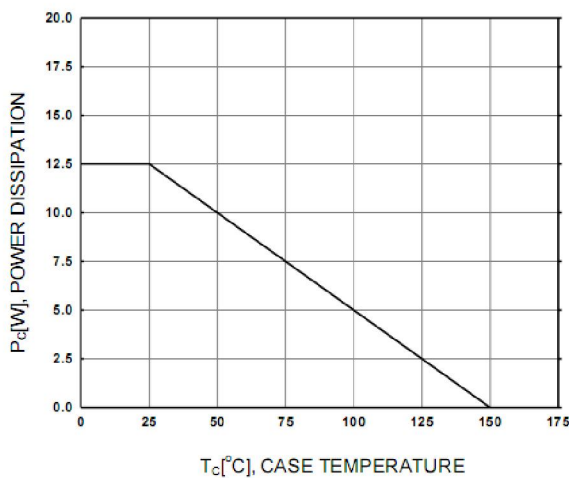
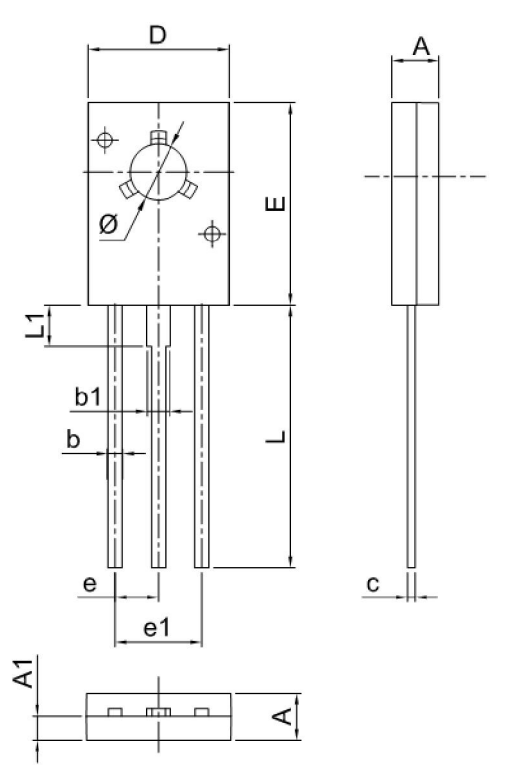


Figure 5. Power Derating

Package Dimensions



Symbol	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