

RoHS Compliant Product  
A suffix of "-C" specifies halogen and lead free

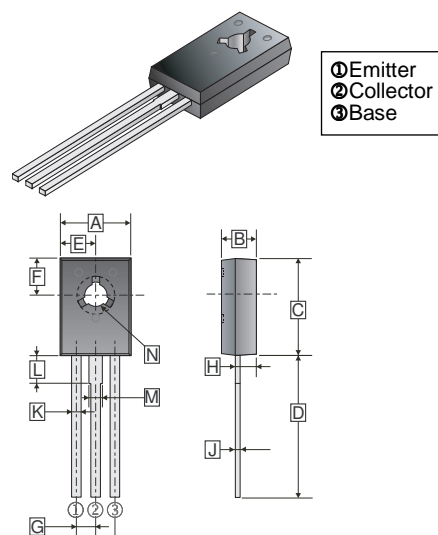
## FEATURES

- High Current

## CLASSIFICATION OF $h_{FE}$

Product-Rank	BD136-6	BD136-10	BD136-16
Product-Rank	BD138-6	BD138-10	BD138-16
Product-Rank	BD140-6	BD140-10	BD140-16
Range	40~100	63~160	100~250

## TO-126



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	7.40	7.80	H	1.10	1.50
B	2.50	2.90	J	0.45	0.60
C	10.60	11.00	K	0.66	0.86
D	15.30	15.70	L	2.10	2.30
E	3.70	3.90	M	1.17	1.37
F	3.90	4.10	N	3.00	3.20
G	2.29 TYP.				

## ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector - Base Voltage	$V_{CBO}$	-45	V
		-60	
		-80	
Collector - Emitter Voltage	$V_{CEO}$	-45	V
		-60	
		-80	
Emitter - Base Voltage	$V_{EBO}$	-5	V
Collector Current -Continuous	$I_C$	-1.5	A
Collector Power Dissipation	$P_C$	1.25	W
Maximum Junction to Ambient	$R_{\theta JA}$	100	$^\circ\text{C} / \text{W}$
Junction, Storage Temperature	$T_J, T_{STG}$	150, -55 ~ 150	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector - Base Breakdown Voltage	BD136	-45	-	-	V	$I_C = -0.1\text{mA}, I_E = 0$
	BD138	-60	-	-		
	BD140	-80	-	-		
Collector-emitter sustaining voltage <sup>1</sup>	BD136	-45	-	-	V	$I_C = -0.03\text{A}, I_B = 0$
	BD138	-60	-	-		
	BD140	-80	-	-		
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	-5	-	-	V	$I_C = 0, I_E = -0.1\text{mA}$
Collector Cut - Off Current	$I_{CBO}$	-	-	-0.1	$\mu\text{A}$	$V_{CB} = -30\text{V}, I_E = 0$
Emitter Cut-Off Current	$I_{EBO}$	-	-	-10	$\mu\text{A}$	$V_{EB} = -5\text{V}, I_C = 0$
DC Current Gain <sup>1</sup>	$h_{FE}$	40	-	250		$V_{CE} = -2\text{V}, I_C = -150\text{mA}$
		25	-	-		$V_{CE} = -2\text{V}, I_C = -5\text{mA}$
		25	-	-		$V_{CE} = -2\text{V}, I_C = -500\text{mA}$
Collector - Emitter Saturation Voltage <sup>1</sup>	$V_{CE(sat)}$	-	-	-0.5	V	$I_C = -500\text{mA}, I_B = -50\text{mA}$
Base - Emitter Voltage <sup>1</sup>	$V_{BE}$	-	-	-1	V	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$

Note:

1. Pulse test: pulse width  $\leq 350\mu\text{s}$ , duty cycles  $\leq 2.0\%$ .