



Micro Commercial Components

Micro Commercial Components  
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## Features

- DC Current Gain -  $h_{FE} = 40$  (Min) @  $I_C = 150\text{mA}$
- Complementary with BD135, BD137, BD139
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0

## Maximum Ratings

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	BD136	45	Vdc
	BD138	60	
	BD140	80	
Collector-Base Voltage	BD136	45	Vdc
	BD138	60	
	BD140	80	
Emitter-Base Voltage	$V_{EBO}$	5.0	Vdc
Collector Current	$I_C$	1.5	Adc
Base Current	$I_B$	0.5	Adc
Total Device Dissipation @ $T_A=25^\circ\text{C}$	$P_D$	1.25	Watt
Derate above $25^\circ\text{C}$		10	
Total Device Dissipation @ $T_C=25^\circ\text{C}$	$P_D$	12.5	Watt
Derate above $25^\circ\text{C}$		100	
Operating & Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	10	$^\circ\text{C/W}$
Maximum Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	100	$^\circ\text{C/W}$

## Electrical Characteristics @ $25^\circ\text{C}$ Unless Otherwise Specified

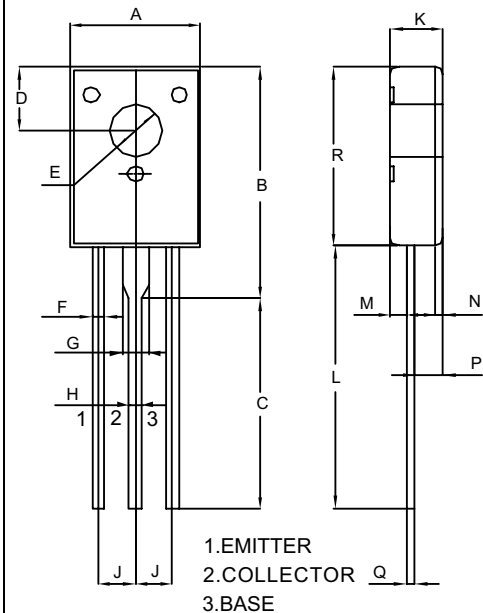
Symbol	Parameter	Min	Max	Units
<b>OFF CHARACTERISTICS</b>				
$BV_{CEO}$	Collector-Emitter Sustaining Voltage* ( $I_C=30\text{mA}, I_B=0$ )	BD136 45 BD138 60 BD140 80		Vdc
$I_{CBO}$	Collector Cutoff Current ( $V_{CB}=30\text{Vdc}, I_E=0$ ) ( $V_{CB}=30\text{Vdc}, I_E=0, T_C=125^\circ\text{C}$ )		0.1 10	$\mu\text{Adc}$
$I_{EBO}$	Emitter Cutoff Current ( $V_{BE}=5.0\text{Vdc}, I_C=0$ )		10	$\mu\text{Adc}$
$h_{FE}$	DC Current Gain* ( $I_C=5\text{mA}, V_{CE}=2\text{Vdc}$ ) ( $I_C=0.5\text{Adc}, V_{CE}=2\text{Vdc}$ ) ( $I_C=150\text{mA}, V_{CE}=2\text{Vdc}$ )	25 25 40	250	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=500\text{mA}, I_B=50\text{mA}$ )		0.5	Vdc
$V_{BE(on)}$	Base-Emitter ON Voltage ( $V_{CE}=2\text{V}, I_C=0.5\text{A}$ )		1	Vdc

\*Pulse test: Pulse width 300  $\mu\text{sec}$ , Duty cycle 2%

**BD136**  
**BD138**  
**BD140**

**Power Transistors**  
**PNP Silicon**  
**45,60,80 Volts**

TO-126



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.291	0.307	7.400	7.800	
B		0.56		14.20	
C	0.50	0.53	12.76	13.36	
D	0.154	0.161	3.900	4.100	
E	0.12	0.13	3.10	3.30	
F	0.025	0.033	0.65	0.85	
G	0.046	0.054	1.170	1.370	
H	0.025	0.033	0.65	0.85	
J	0.08	0.10	2.08	2.48	
K	0.098	0.114	2.500	2.900	
L	0.602	0.618	15.30	15.70	
M		0.04		1.0	
N		0.02		0.5	
P	0.06	0.08	1.55	1.95	
Q	0.018	0.023	0.45	0.60	
R	0.43	0.44	10.80	11.20	

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BD136  
BD138  
BD140

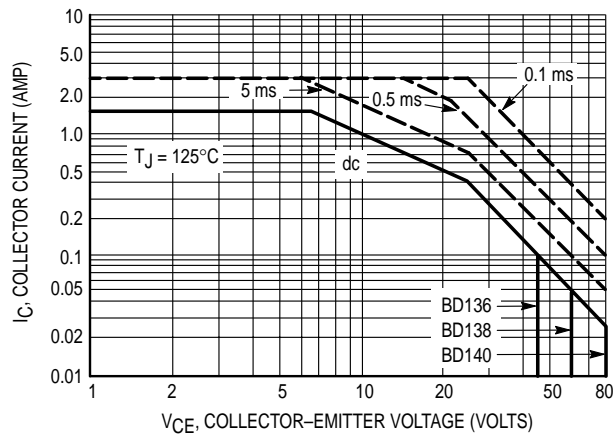


Figure 1. Active-Region Safe Operating Area



Micro Commercial Components™

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