



Micro Commercial Components

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BD136
BD138
BD140

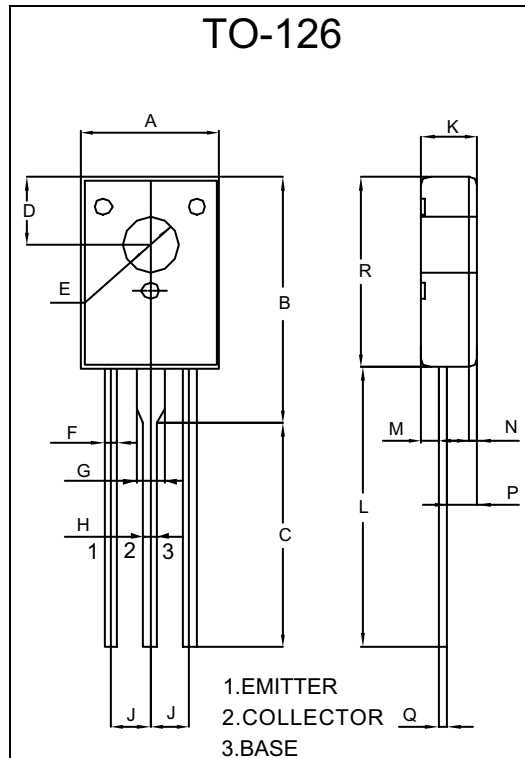
Features

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

Power Transistors
PNP Silicon
45,60,80 Volts

Maximum Ratings

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



Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
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	μAdc
I_{EBO}	Emitter Cutoff Current ($V_{BE}=5.0\text{Vdc}, I_C=0$)		10	μAdc
h_{FE}	DC Current Gain* ($I_C=5\text{mAdc}, V_{CE}=2\text{Vdc}$) ($I_C=0.5\text{Adc}, V_{CE}=2\text{Vdc}$) ($I_C=150\text{mAdc}, V_{CE}=2\text{Vdc}$)	25 25 40	250	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=500\text{mAdc}, I_B=50\text{mAdc}$)		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 μsec , Duty cycle 2%

DIM	INCHES		MM		NOTE
	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	

BD136
BD138
BD140

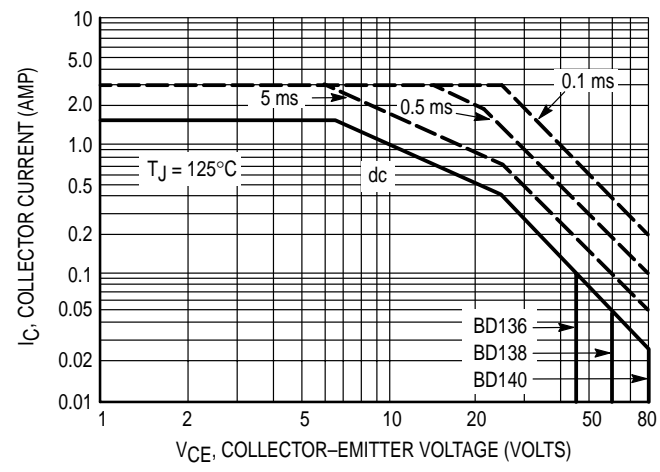


Figure 1. Active-Region Safe Operating Area



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