



Micro Commercial Components  
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**BD136**  
**BD138**  
**BD140**

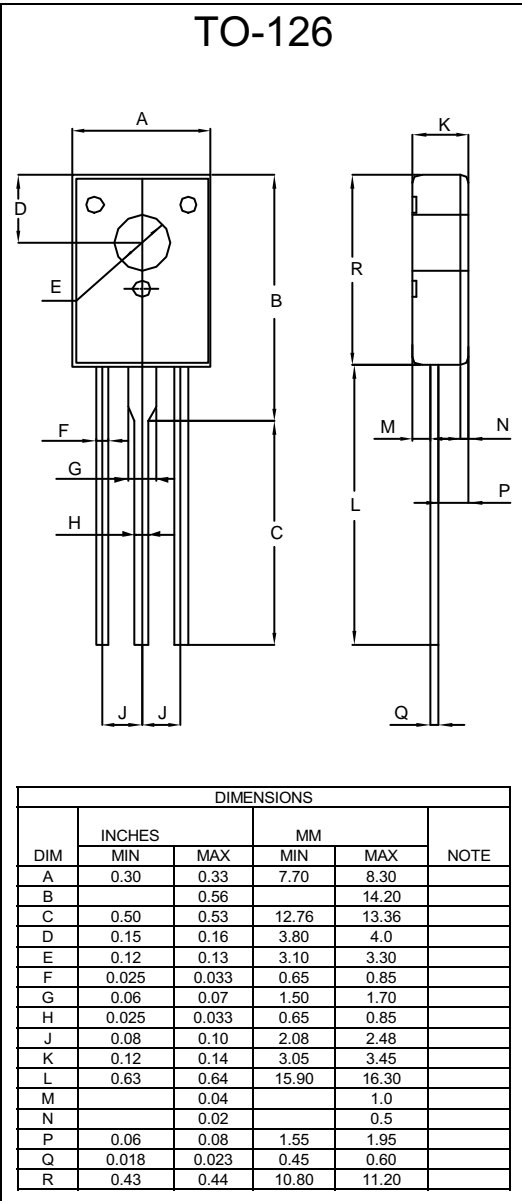
## Features

- DC Current Gain -  $h_{FE} = 40$  (Min) @  $I_C = 150\text{mAdc}$
- Complementary with BD135, BD137, BD139

**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 60 100	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 $25^\circ\text{C}$		$P_D$	1.25 10	Watt mW/°C
Total Device Dissipation @ $T_C=25^\circ\text{C}$ Derate above $25^\circ\text{C}$		$P_D$	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
OFF CHARACTERISTICS				
$BV_{CEO}$	Collector-Emitter Sustaining Voltage* ( $I_C=30\text{mA}, I_B=0$ )	BD136 BD138 BD140	45 60 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* ( $I_C=5\text{mAdc}, V_{CE}=2\text{Vdc}$ ) ( $I_C=0.5\text{Adc}, V_{CE}=2\text{Vdc}$ ) ( $I_C=150\text{mAdc}, V_{CE}=2\text{Vdc}$ )		25 25 40	
$V_{CE(sat)}$	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  $\mu\text{sec}$ , Duty cycle 2%

BD136  
BD138  
BD140

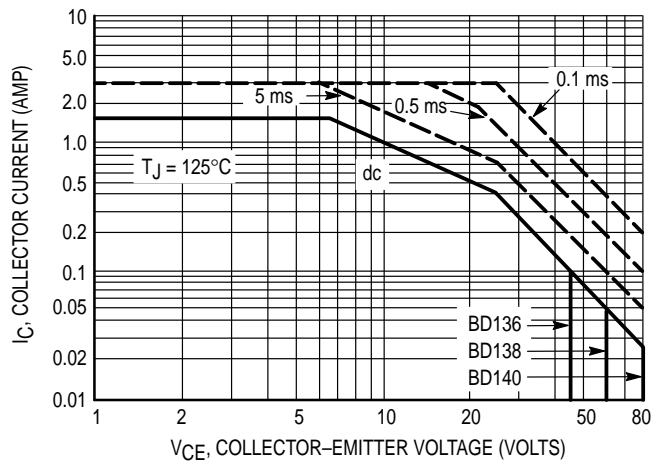
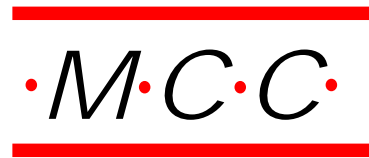


Figure 1. Active-Region Safe Operating Area