



Micro Commercial Components



Micro Commercial Components
20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

BD135
BD137
BD139

Features

- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- DC Current Gain - $h_{FE} = 40$ (Min) @ $I_C = 150\text{mAdc}$
- Complementary with BD136, BD138, BD140

Maximum Ratings

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	BD135	45	Vdc
	BD137	60	
	BD139	80	
Collector-Base Voltage	BD135	45	Vdc
	BD137	60	
	BD139	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°C		10	mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C=25^\circ\text{C}$	P_D	12.5	Watt
Derate above 25°C		100	mW/ $^\circ\text{C}$
Operating & Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	10	$^\circ\text{C}/\text{W}$
Maximum Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	100	$^\circ\text{C}/\text{W}$

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
BV_{CEO}	Collector-Emitter Sustaining Voltage* ($I_C=30\text{mA}, I_B=0$)	BD135 45 BD137 60 BD139 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
$h_{FE(1)}$	DC Current Gain* ($I_C=5\text{mAdc}, V_{CE}=2\text{Vdc}$)	25		
$h_{FE(2)}$	($I_C=0.5\text{Adc}, V_{CE}=2\text{Vdc}$)	25		
$h_{FE(3)}$	($I_C=150\text{mAdc}, V_{CE}=2\text{Vdc}$)	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

CLASSIFICATION OF $h_{FE(3)}$

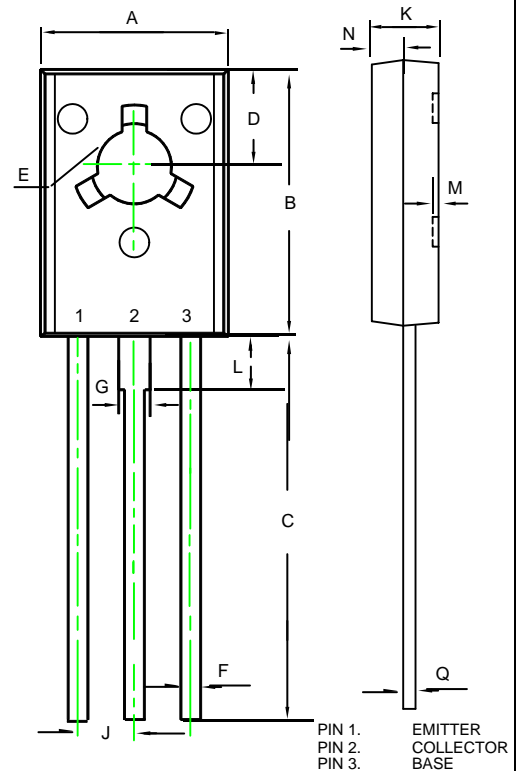
Rank	6	10	16
Range	40-100	63-160	100-250

*Pulse test: Pulse width 300 μsec , Duty cycle 2%

Notes: 1. High Temperature Solder Exemption Applied, see EU Directive Annex Notes 7.

Power Transistors
NPN Silicon
45,60,80 Volts

TO-126



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.291	0.307	7.40	7.80	
B	0.417	0.433	10.60	11.00	
C	0.602	0.618	15.30	15.70	
D	0.154	0.161	3.90	4.10	
E	0.118	0.126	3.00	3.20	
F	0.026	0.034	0.66	0.86	
G	0.046	0.054	1.17	1.37	
J	0.090TYP		2.290TYP		
K	0.098	0.114	2.50	2.90	
L	0.083	0.091	2.10	2.30	
M	0.000	0.012	0.00	0.30	
N	0.043	0.059	1.10	1.50	
Q	0.018	0.024	0.45	0.60	

www.mccsemi.com

BD135
BD137
BD139

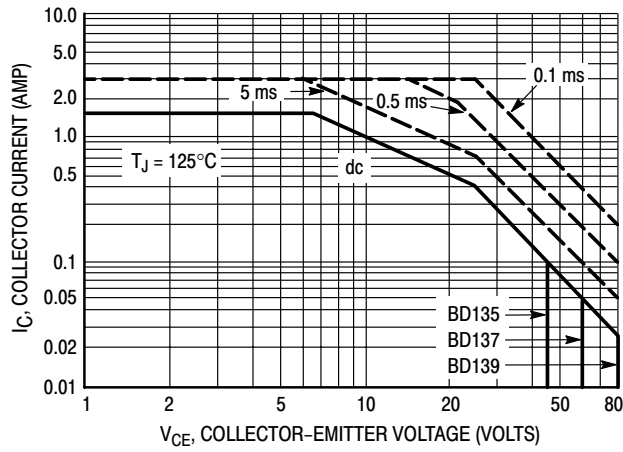


Figure 1. Active-Region Safe Operating Area



Micro Commercial Components

Ordering Information :

Device	Packing
Part Number-BP	Bulk; 1Kpcs/Box

*****IMPORTANT NOTICE*****

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. **Micro Commercial Components Corp.** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp.** and all the companies whose products are represented on our website, harmless against all damages.

*****LIFE SUPPORT*****

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

*****CUSTOMER AWARENESS*****

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

www.mccsemi.com