



Micro Commercial Components

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BD233
BD235
BD237

Features

- Power Dissipation: $P_{CM}=1.25W$, $T_a=25^\circ C$
- Collector Current : $I_C=2A$
- Complement to BD234/236/238 respectively

NPN
Plastic-Encapsulate
Transistors

Maximum Ratings*

Symbol	Rating	Rating	Unit	
V_{CEO}	Collector-Emitter Voltage	BD233 45 BD235 60 BD237 80	V	
	V_{CBO}	Collector-Base Voltage	BD233 45 BD235 60 BD237 100	V
		V_{CER}	Collector-Emitter Voltage	BD233 45 BD235 60 BD237 100
V_{EBO}			Emitter-Base Voltage	5
I_C	Collector Current (DC)		2	A
I_{CP}	Collector Current (Pulse)	6	A	
P_C	Collector Dissipation ($T_C=25^\circ C$)	25	W	
T_J	Operating Junction Temperature	150	$^\circ C$	
T_{STG}	Storage Temperature	-65 to +150	$^\circ C$	

Electrical Characteristics @ 25°C Unless Otherwise Specified

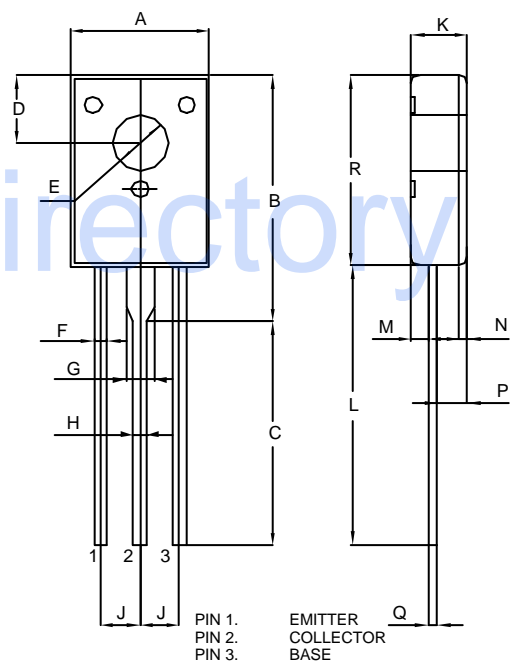
Symbol	Parameter	Min	Max	Units
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OFF CHARACTERISTICS

$V_{CEO(sus)}$	Collector-Emitter Breakdown Voltage	45	---	V
	BD233 ($I_C=0.1A_{dc}$, $I_B=0$)	60	---	V
	BD237 ($I_C=0.1A_{dc}$, $I_B=0$)	80	---	V
I_{CBO}	Collector Cutoff Current	---	100	μA
	BD233 ($V_{CB}=45V_{dc}$, $I_E=0$)	---	100	μA
	BD237 ($V_{CB}=100V_{dc}$, $I_E=0$)	---	100	μA
I_{EBO}	Emitter Cutoff Current ($V_{BE}=5.0V_{dc}$, $I_C=0$)	---	1.0	mA
h_{FE}	DC Current Gain ($V_{CE}=2V$, $I_C=150mA$)	40	---	
	($V_{CE}=2V$, $I_C=1A$)	25	---	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=1A$, $I_B=0.1A$)	---	0.6	V
$V_{BE(on)}$	Base-Emitter ON Voltage ($V_{CE}=2V$, $I_C=1A$)	---	1.3	V
f_T	Current Gain Bandwidth Product ($V_{CE}=10V$, $I_C=0.25A$)	3	---	MHz

*Pulse Test: $PW=300\mu s$, Duty Cycle=1.5% Pulsed

TO-18



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.30	0.33	7.70	8.30	
B		0.56		14.20	
C	0.50	0.53	12.76	13.36	
D	0.15	0.16	3.80	4.0	
E	0.12	0.13	3.10	3.30	
F	0.025	0.033	0.65	0.85	
G	0.06	0.07	1.50	1.70	
H	0.025	0.033	0.65	0.85	
J	0.08	0.10	2.08	2.48	
K	0.12	0.14	3.05	3.45	
L	0.63	0.64	15.90	16.30	
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	

BD233/235/237

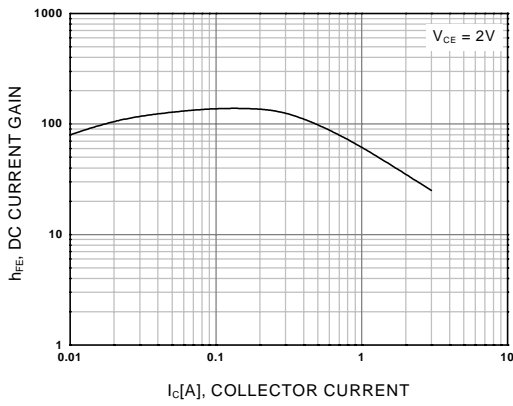
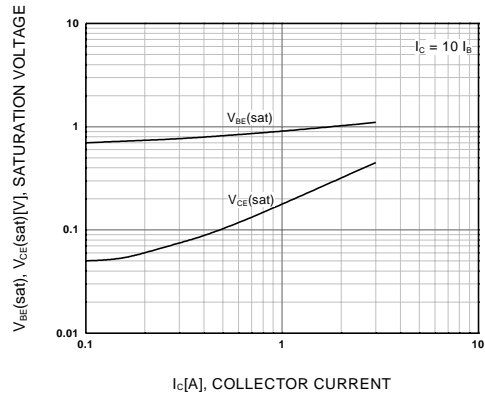


Figure 1. DC current Gain



**Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage**

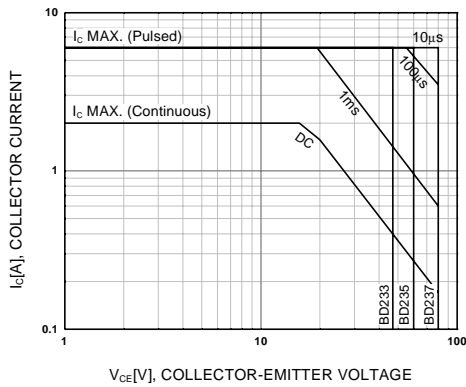


Figure 3. Safe Operating Area

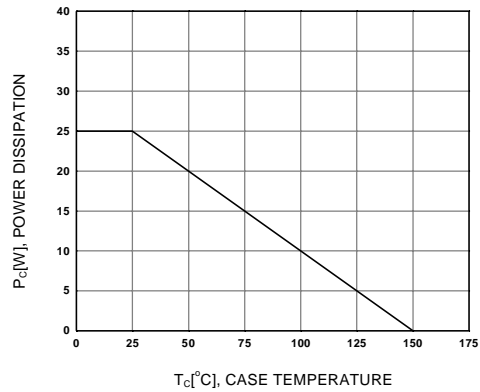


Figure 4. Power Derating