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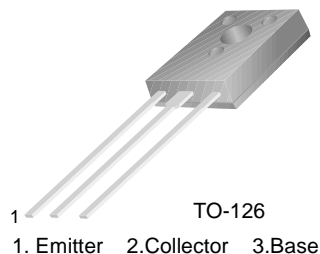
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BD233/235/237

Medium Power Linear and Switching Applications

- Complement to BD 234/236/238 respectively



NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

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

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$V_{CEO(sus)}$	* Collector-Emitter Sustaining Voltage : BD233	$I_C = 100\text{mA}, I_B = 0$	45			V
	: BD235		60			V
	: BD237		80			V
I_{CBO}	Collector Cut-off Current : BD233	$V_{CB} = 45\text{V}, I_E = 0$			100	μA
	: BD235	$V_{CB} = 60\text{V}, I_E = 0$			100	μA
	: BD237	$V_{CB} = 100\text{V}, I_E = 0$			100	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$			1	mA
h_{FE}	* DC Current Gain	$V_{CE} = 2\text{V}, I_C = 150\text{mA}$	40			
		$V_{CE} = 2\text{V}, I_C = 1\text{A}$	25			
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = 1\text{A}, I_B = 0.1\text{A}$			0.6	V
$V_{BE(on)}$	* Base-Emitter ON Voltage	$V_{CE} = 2\text{V}, I_C = 1\text{A}$			1.3	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 250\text{mA}$	3			MHz

* Pulse Test: PW=300 μs , duty Cycle=1.5% Pulsed

Typical Characteristics

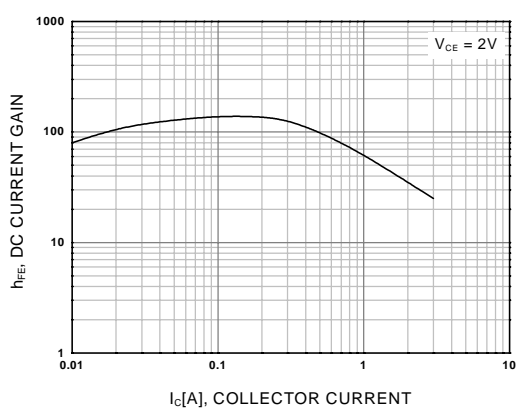


Figure 1. DC current Gain

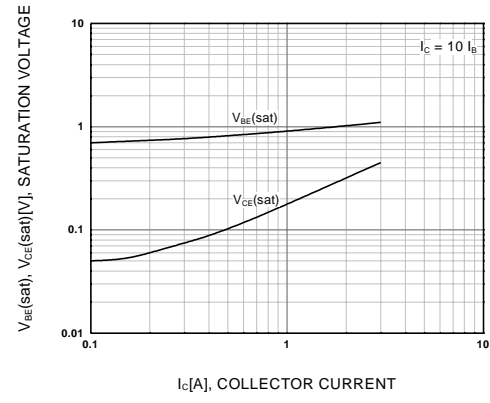


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

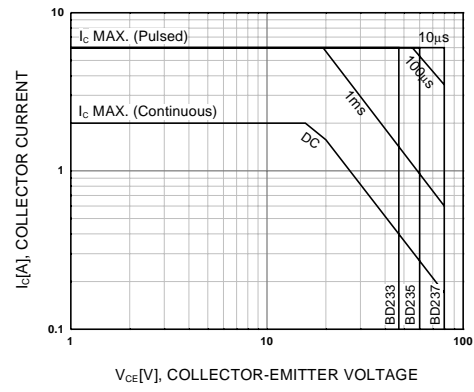


Figure 3. Safe Operating Area

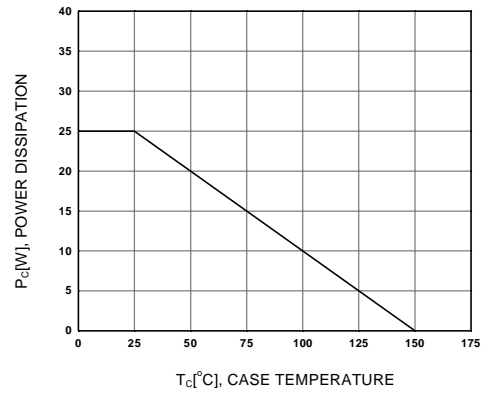


Figure 4. Power Derating

Front View Dimensions:

- Total width: 8.00 ± 0.30
- Total height: 14.20 MAX
- Top flange thickness: 3.90 ± 0.10
- Central pin diameter: $\phi 3.20 \pm 0.10$
- Pin length: 13.06 ± 0.30
- Pin #1 width: 0.75 ± 0.10
- Pin #2 width: 1.60 ± 0.10
- Pin #3 width: 0.75 ± 0.10
- Pin material: 2.28TYP [2.28 ± 0.20]

Side View Dimensions:

- Overall height: 16.10 ± 0.20
- Top flange height: 11.00 ± 0.20
- Flange thickness: 3.25 ± 0.20
- Pin offset from centerline: (1.00)
- Pin offset from outer edge: (0.50)
- Pin diameter: 1.75 ± 0.20
- Bottom flange thickness: $0.50^{+0.10}_{-0.05}$

Top View:

The top view shows three rectangular pins arranged horizontally.

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