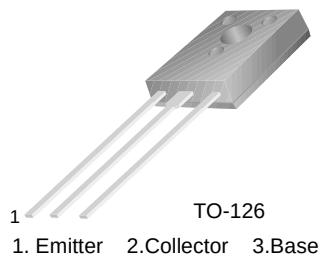


BD434/436/438

Medium Power Linear and Switching Applications

- Complement to BD433, BD435 and BD437 respectively



PNP Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage		
	: BD434	- 22	V
	: BD436	- 32	V
	: BD438	- 45	V
V_{CES}	Collector-Emitter Voltage		
	: BD434	- 22	V
	: BD436	- 32	V
	: BD438	- 45	V
V_{CEO}	Collector-Emitter Voltage		
	: BD434	- 22	V
	: BD436	- 32	V
	: BD438	- 45	V
V_{EBO}	Emitter-Base Voltage	- 5	V
I_C	Collector Current (DC)	- 4	A
I_{CP}	*Collector Current (Pulse)	- 7	A
I_B	Base Current	- 1	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	36	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 : BD434 : BD436 : BD438	$I_C = -100\text{mA}, I_B = 0$	- 22 - 32 - 45			V V V
I_{CBO}	Collector Cut-off Current : BD434 : BD436 : BD438	$V_{CB} = -22\text{V}, I_E = 0$ $V_{CB} = -32\text{V}, I_E = 0$ $V_{CB} = -45\text{V}, I_E = 0$			- 100 - 100 - 100	μA μA μA
I_{CEO}	Collector Cut-off Current : BD434 : BD436 : BD438	$V_{CE} = -22\text{V}, V_{BE} = 0$ $V_{CE} = -32\text{V}, V_{BE} = 0$ $V_{CE} = -45\text{V}, V_{BE} = 0$			- 100 - 100 - 100	μA μA μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = -5\text{V}, I_C = 0$			- 1	mA
h_{FE}	* DC Current Gain : BD434/436 : BD438 : ALL DEVICE : BD434/436 : BD438	$V_{CE} = -5\text{V}, I_C = -10\text{mA}$ $V_{CE} = -1\text{V}, I_C = -500\text{mA}$ $V_{CE} = -1\text{V}, I_C = -2\text{A}$	40 30 85 50 40	140 140 140		
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage : BD434 : BD436 : BD438	$I_C = -2\text{A}, I_B = -0.2\text{A}$		- 0.2 - 0.2 - 0.2	- 0.5 - 0.5 - 0.6	V V V
$V_{BE(on)}$	* Base-Emitter ON Voltage : BD434 : BD436 : BD438	$V_{CE} = -1\text{V}, I_C = -2\text{A}$			- 1.1 - 1.1 - 1.2	V V V
f_T	Current Gain Bandwidth Product	$V_{CE} = -1\text{V}, I_C = -250\text{mA}$	3			MHz

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

Typical Characteristics

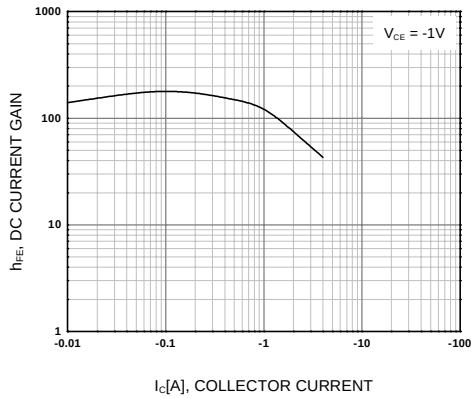


Figure 1. DC current Gain

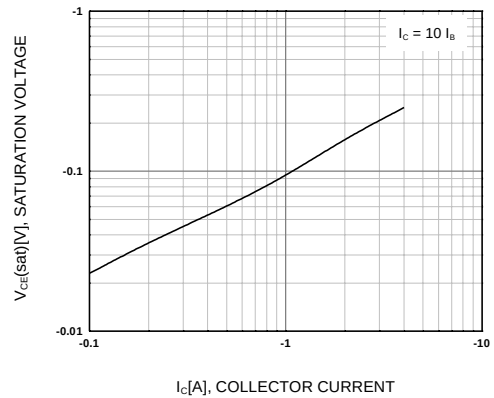


Figure 2. Collector-Emitter Saturation Voltage

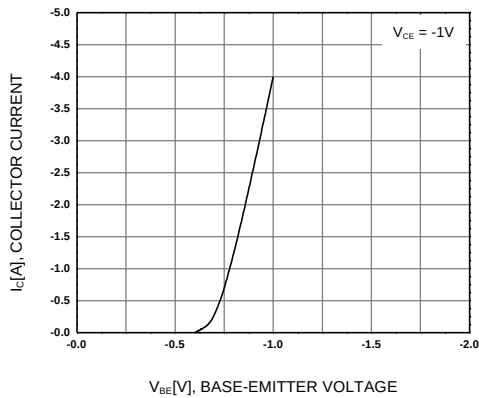


Figure 3. Base-Emitter On Voltage

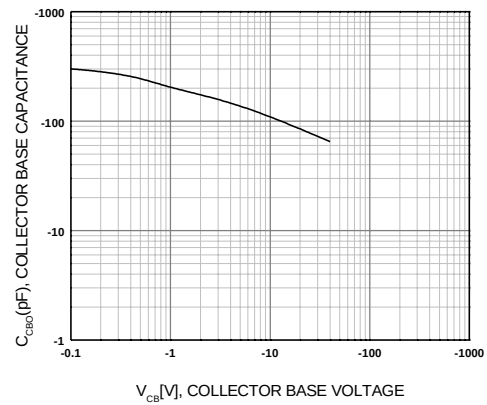


Figure 4. Collector-Base Capacitance

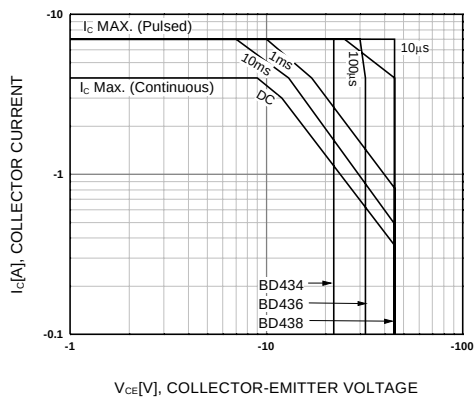


Figure 5. Safe Operating Area

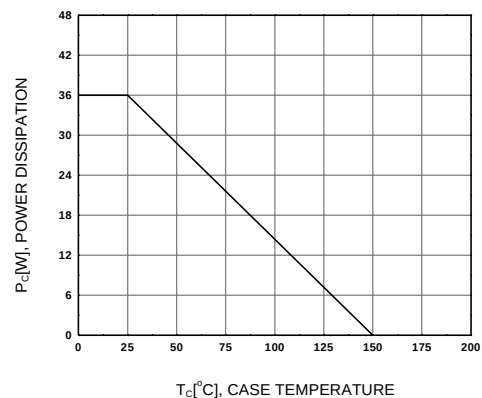


Figure 6. Power Derating

BD434/436/438

Technical drawing of a mechanical part, showing three views: front view, side view, and top view.

Front View Dimensions:

- Top flange width: 8.00 ± 0.30
- Top flange height: 3.90 ± 0.10
- Central hole diameter: $\varnothing 3.20 \pm 0.10$
- Overall height: 14.20 MAX
- Bottom flange width: 13.06 ± 0.30
- Bottom flange height: 0.75 ± 0.10
- Internal feature width: 1.60 ± 0.10
- Internal feature height: 0.75 ± 0.10
- Bottom flange material thickness: 2.28 TYP [2.28 ± 0.20]

Side View Dimensions:

- Top flange width: 3.25 ± 0.20
- Top flange height: 11.00 ± 0.20
- Internal feature width: (1.00)
- Internal feature height: (0.50)
- Bottom flange width: 1.75 ± 0.20
- Bottom flange height: 16.10 ± 0.20
- Bottom flange material thickness: $0.50^{+0.10}_{-0.05}$

Top View:

- Shows the top flange with three mounting holes.

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