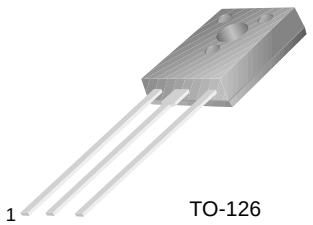
FAIRCHILD
SEMICONDUCTOR®

BD434/436/438

Medium Power Linear and Switching Applications

- Complement to BD433, BD435 and BD437 respectively



TO-126

1. Emitter 2.Collector 3.Base

PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings T_C=25°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°C)	36	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 ~ 150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
V_{CEO}(sus)	Collector-Emitter Sustaining Voltage					
	: BD434	I_C = - 100mA, I_B = 0	- 22			V
	: BD436		- 32			V
	: BD438		- 45			V
I_{CBO}	Collector Cut-off Current	V_{CB} = - 22V, I_E = 0				
	: BD434	V_{CB} = - 32V, I_E = 0			- 100	µA
	: BD436	V_{CB} = - 45V, I_E = 0			- 100	µA
	: BD438				- 100	µA
I_{CEO}	Collector Cut-off Current					
	: BD434	V_{CE} = - 22V, V_{BE} = 0			- 100	µA
	: BD436	V_{CE} = - 32V, V_{BE} = 0			- 100	µA
	: BD438	V_{CE} = - 45V, V_{BE} = 0			- 100	µA
I_{EBO}	Emitter Cut-off Current	V_{EB} = - 5V, I_C = 0			- 1	mA
h_{FE}	* DC Current Gain					
	: BD434/436	V_{CE} = - 5V, I_C = - 10mA	40	140		
	: BD438		30	140		
	: ALL DEVICE	V_{CE} = - 1V, I_C = - 500mA	85	140		
	: BD434/436	V_{CE} = - 1V, I_C = - 2A	50			
	: BD438		40			
V_{CE}(sat)	* Collector-Emitter Saturation Voltage					
	: BD434	I_C = - 2A, I_B = - 0.2A		- 0.2	- 0.5	V
	: BD436			- 0.2	- 0.5	V
	: BD438			- 0.2	- 0.6	V
V_{BE}(on)	* Base-Emitter ON Voltage					
	: BD434	V_{CE} = - 1V, I_C = - 2A			- 1.1	V
	: BD436				- 1.1	V
	: BD438				- 1.2	V
f_T	Current Gain Bandwidth Product	V_{CE} = - 1V, I_C = - 250mA	3			MHz

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

Typical Characteristics

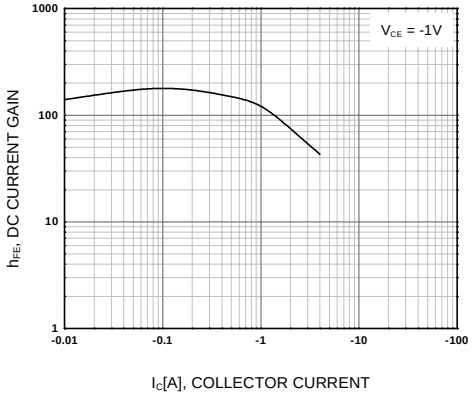


Figure 1. DC current Gain

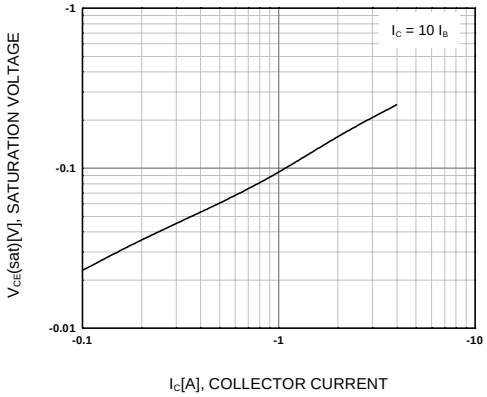


Figure 2. Collector-Emitter Saturation Voltage

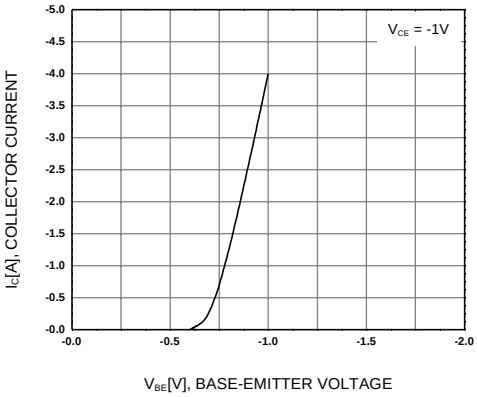


Figure 3. Base-Emitter On Voltage

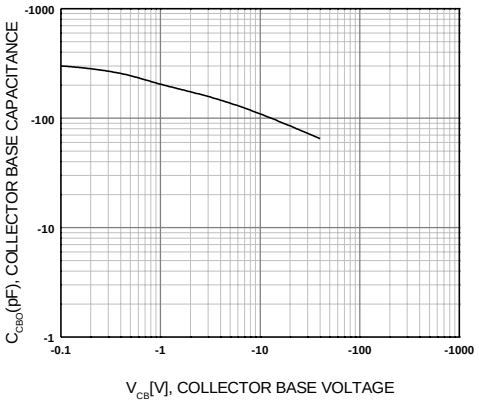


Figure 4. Collector-Base Capacitance

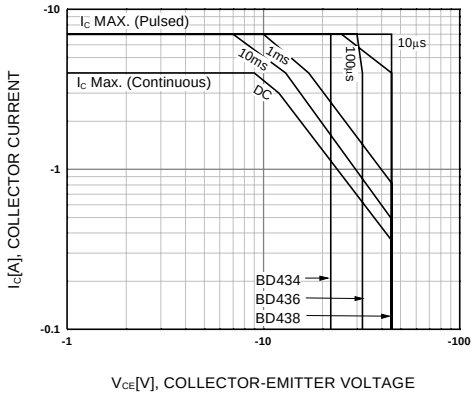


Figure 5. Safe Operating Area

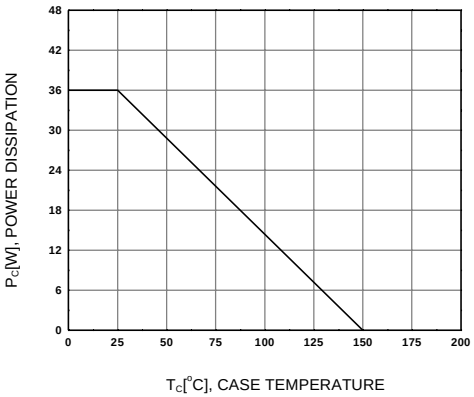


Figure 6. Power Derating

Package Demensions

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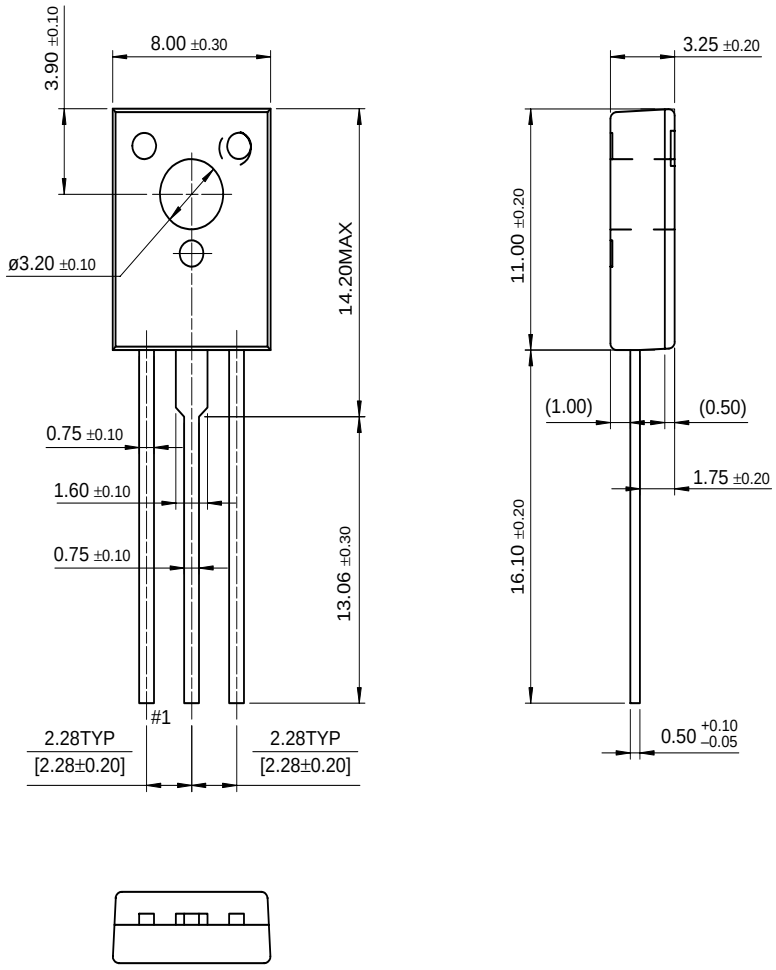

Dimensions in Millimeters

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