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Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

FAIRCHILD
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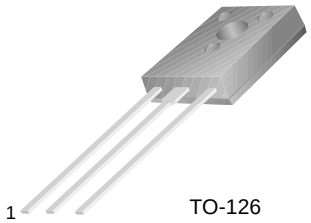
BD434/436/438

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

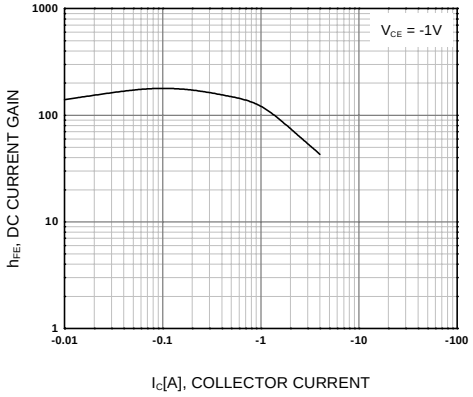


Figure 1. DC current Gain

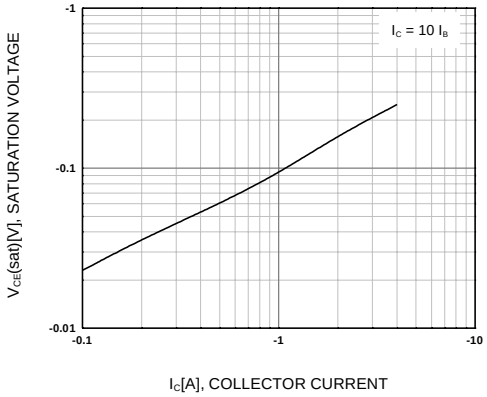


Figure 2. Collector-Emitter Saturation Voltage

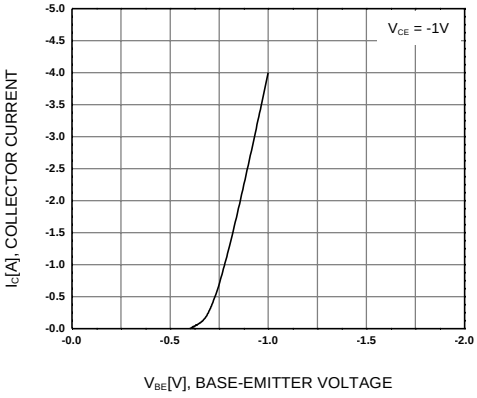


Figure 3. Base-Emitter On Voltage

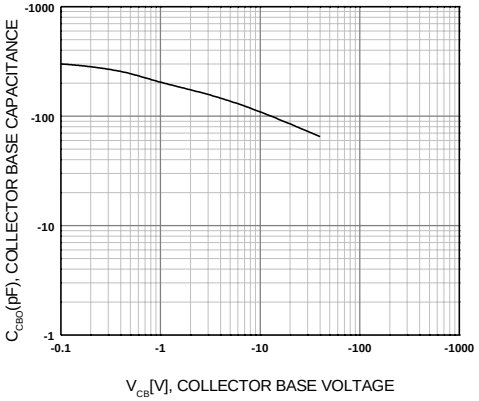


Figure 4. Collector-Base Capacitance

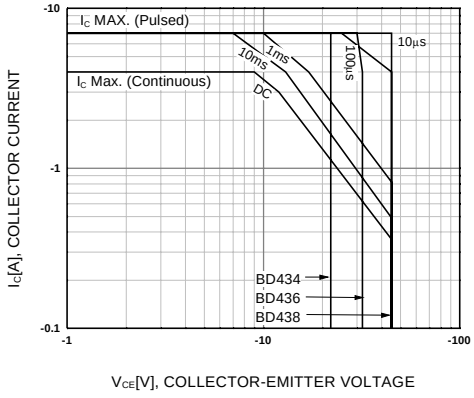


Figure 5. Safe Operating Area

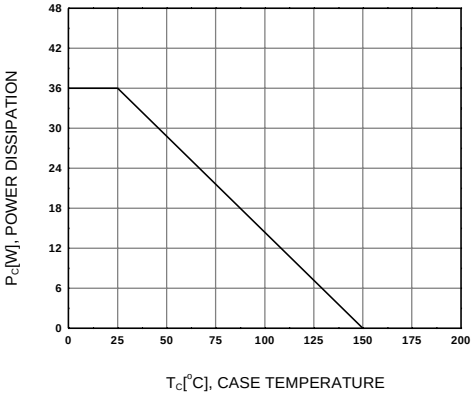
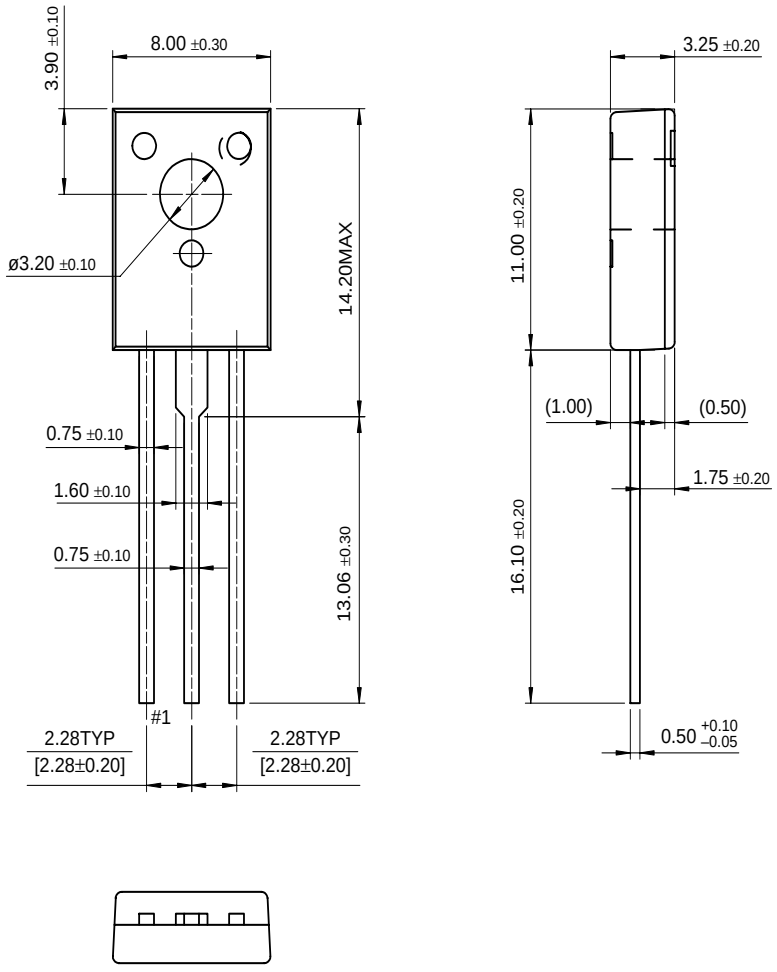


Figure 6. Power Derating

Package Demensions

TO-126



Dimensions in Millimeters

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