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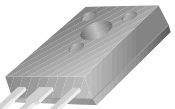
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes 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 SEMICONDUCTOR™

BD175/177/179

Medium Power Linear and Switching Applications

- Complement to BD 176/178/180 respectively



1. Emitter 2. Collector 3.Base

TO-126

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter		Value	Units
V_{CBO}	*Collector-Base Voltage	: BD175	45	V
		: BD177	60	V
		: BD179	80	V
V_{CEO}	Collector-Emitter Voltage	: BD175	45	V
		: BD177	60	V
		: BD179	80	V
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current (DC)		3	A
I_{CP}	*Collector Current (Pulse)		7	A
P_C	Collector Dissipation (T_C=25°C)		30	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						
		: BD175	I_C = 100mA, I_B = 0	45			V
		: BD177		60			V
		: BD179		80			V
I_{CBO}	Collector Cut-off Current	: BD175	V_{CB} = 45V, I_E = 0			100	µA
		: BD177	V_{CB} = 60V, I_E = 0			100	µA
		: BD179	V_{CB} = 80V, I_E = 0			100	µA
I_{EBO}	Emitter Cut-off Current		V_{EB} = 5V, I_C = 0			1	mA
h_{FE1}	* DC Current Gain		V_{CE} = 2V, I_C = 150mA	40		250	
h_{FE2}			V_{CE} = 2V, I_C = 1A	15			
V_{CE}(sat)	* Collector-Emitter Saturation Voltage		I_C = 1A, I_B = 0.1A			0.8	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 = 250mA	3			MHz

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

h_{FE} Classificntion

Classification	6	10	16
h_{FE1}	40 ~ 100	63 ~ 160	100 ~ 250

* Classification 16: Only BD175

Typical Characteristics

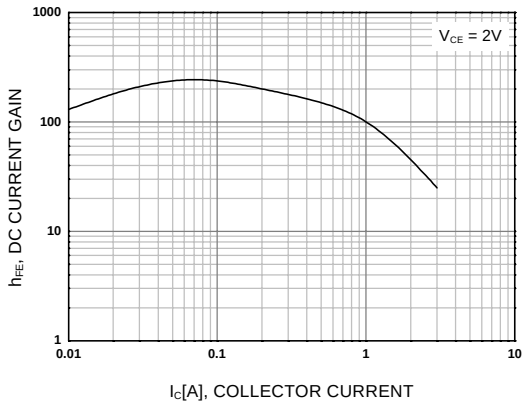


Figure 1. DC current Gain

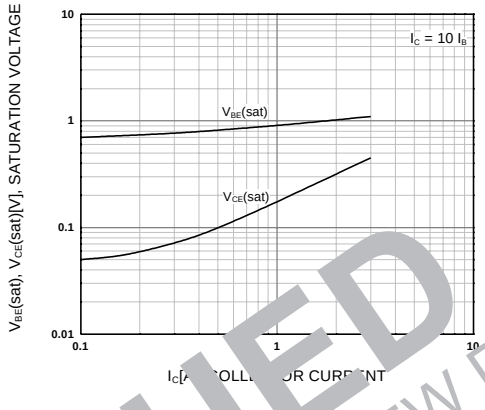


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

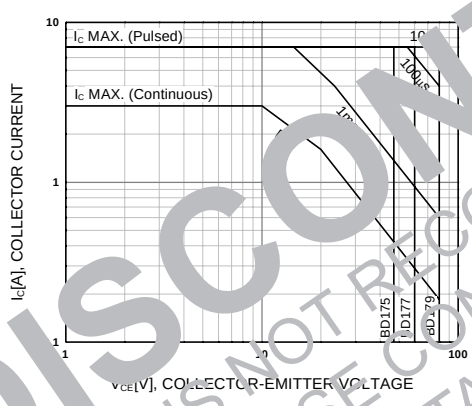


Figure 3. Safe Operating Area

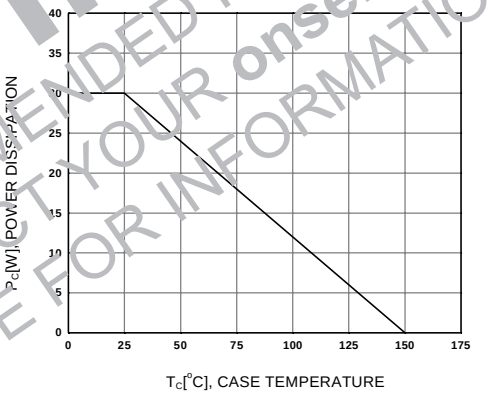
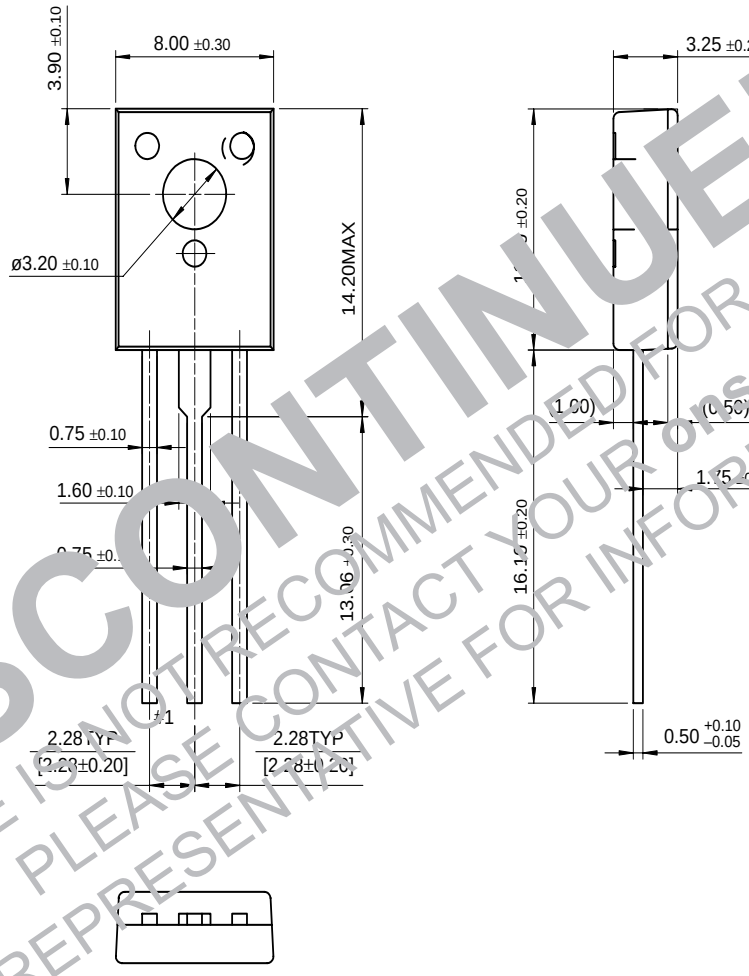


Figure 4. Power Derating

Package Demensions

TO-126



Dimensions in Millimeters

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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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