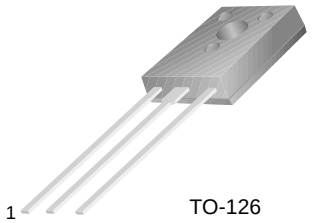
FAIRCHILD SEMICONDUCTOR™

BD175/177/179

Medium Power Linear and Switching Applications

- Complement to BD 176/178/180 respectively



TO-126

1. Emitter 2.Collector 3.Base

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

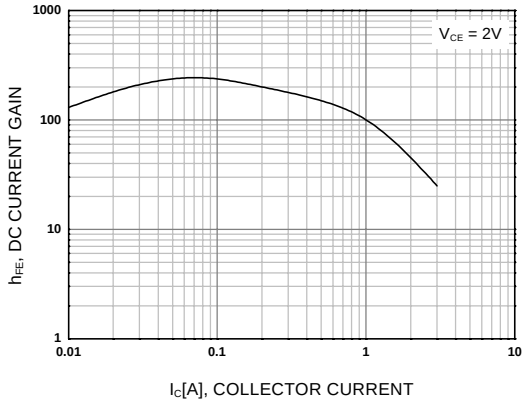


Figure 1. DC current Gain

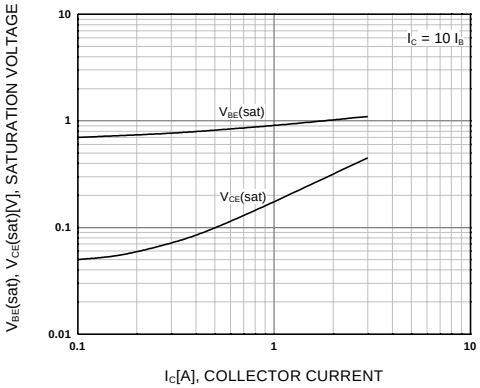


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

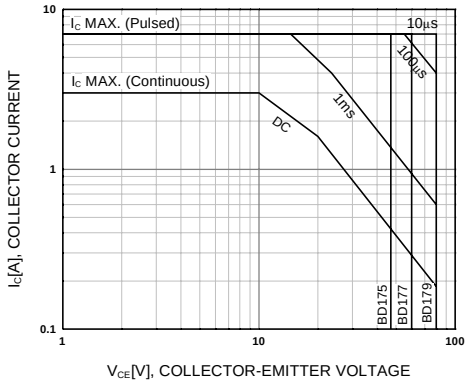


Figure 3. Safe Operating Area

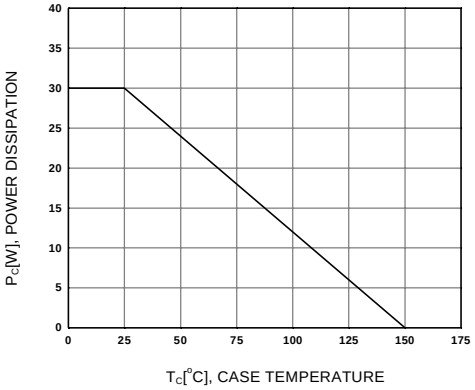


Figure 4. Power Derating

Package Demensions

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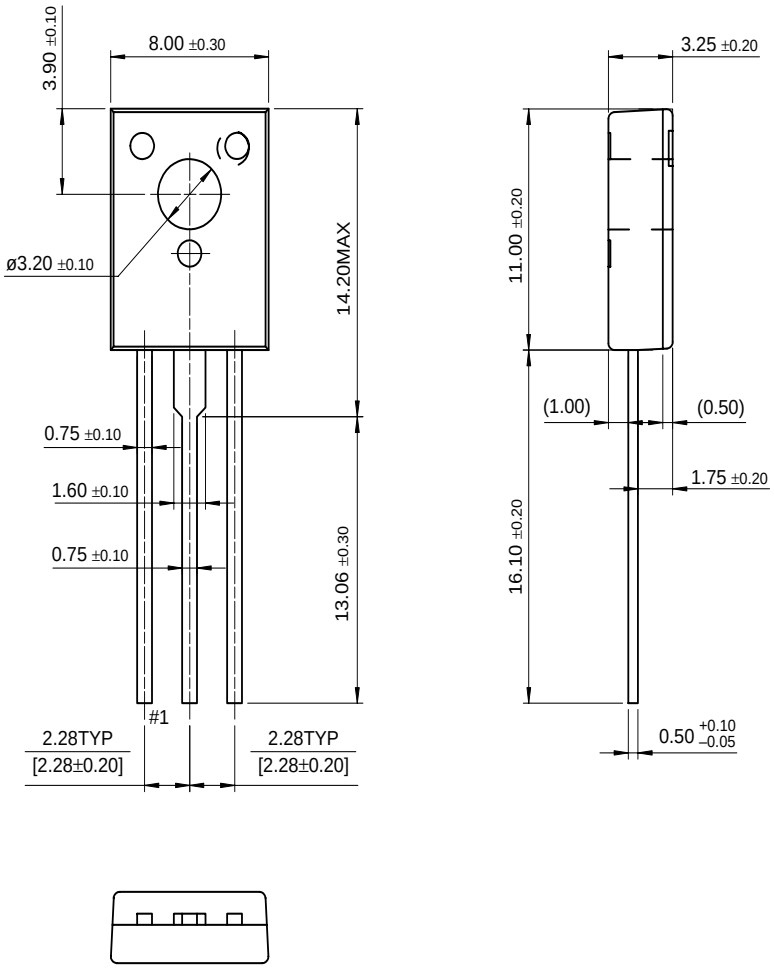

Dimensions in Millimeters

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Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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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BD177
NPN Epitaxial Silicon Transistor

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- Complement to BD 176/178/180 respectively

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Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
BD17710STU	Full Production	$0.18	TO-126	3	RAIL

* 1,000 piece Budgetary Pricing

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BD179
NPN Epitaxial Silicon Transistor

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Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
BD17910STU	Full Production	$0.188	TO-126	3	RAIL

* 1,000 piece Budgetary Pricing

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BD175
NPN Epitaxial Silicon Transistor

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Product	Product status	Pricing*	Package type	Leads	Packing method
BD17516STU	Full Production	$0.18	TO-126	3	RAIL
BD1756STU	Full Production	$0.18	TO-126	3	RAIL
BD17510STU	Full Production	$0.18	TO-126	3	RAIL

* 1,000 piece Budgetary Pricing

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