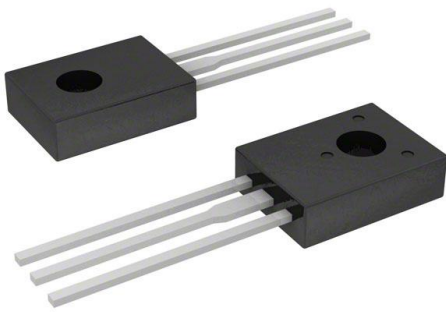


BD17610STU Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	BD17610STU-DG
Manufacturer	onsemi
Manufacturer Product Number	BD17610STU
Description	TRANS PNP 45V 3A TO126-3
Detailed Description	Bipolar (BJT) Transistor PNP 45 V 3 A 3MHz 30 W Th rough Hole TO-126-3



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

BD17610STU

Series:

-

Transistor Type:

PNP

Voltage - Collector Emitter Breakdown (Max):

45 V

Current - Collector Cutoff (Max):

100 μ A (ICBO)

Power - Max:

30 W

Operating Temperature:

150°C (TJ)

Package / Case:

TO-225AA, TO-126-3

Base Product Number:

BD176

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

3 A

Vce Saturation (Max) @ Ib, Ic:

800mV @ 100mA, 1A

DC Current Gain (hFE) (Min) @ Ic, Vce:

63 @ 150mA, 2V

Frequency - Transition:

3MHz

Mounting Type:

Through Hole

Supplier Device Package:

TO-126-3

Environmental & Export classification

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0095



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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.

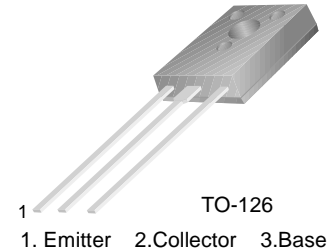
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FAIRCHILD
SEMICONDUCTOR®

BD176/178/180

Medium Power Linear and Switching Applications

- Complement to BD 175/177/179 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 : BD176	- 45	V
	: BD178	- 60	V
	: BD180	- 80	V
V_{CEO}	Collector-Emitter Voltage : BD176	- 45	V
	: BD178	- 60	V
	: BD180	- 80	V
V_{EBO}	Emitter-Base Voltage	- 5	V
I_C	Collector Current (DC)	- 3	A
I_C	*Collector Current (Pulse)	- 7	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	30	W
$R_{\theta ja}$	Junction to Ambient	70	$^\circ\text{C}/\text{W}$
$R_{\theta jc}$	Junction to Case	8.5	$^\circ\text{C}/\text{W}$
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 : BD176	$I_C = -100\text{mA}, I_B = 0$	- 45			V		
	: BD178						- 60	V
	: BD180						- 80	V
I_{CBO}	Collector Cut-off Current : BD176	$V_{CB} = -45\text{V}, I_E = 0$			- 100	μA		
	: BD178	$V_{CB} = -60\text{V}, I_E = 0$			- 100	μA		
	: BD180	$V_{CB} = -80\text{V}, I_E = 0$			- 100	μA		
I_{EBO}	Emitter Cut-off Current	$V_{EB} = -5\text{V}, I_C = 0$			- 1	mA		
h_{FE1} h_{FE2}	* DC Current Gain	$V_{CE} = -2\text{V}, I_C = -150\text{mA}$	40		250			
		$V_{CE} = -2\text{V}, I_C = -1\text{A}$	15					
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = -1\text{A}, I_B = -0.1\text{A}$			- 0.8	V		
$V_{BE(on)}$	* Base-Emitter On Voltage	$V_{CE} = -2\text{V}, I_C = -1\text{A}$			- 1.3	V		
f_T	Current Gain Bandwidth Product	$V_{CE} = -10\text{V}, I_C = -250\text{mA}$	3			MHz		

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

h_{FE} Classification

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

* Classification 16: Only BD 176

BD176/178/180

Typical Characteristics

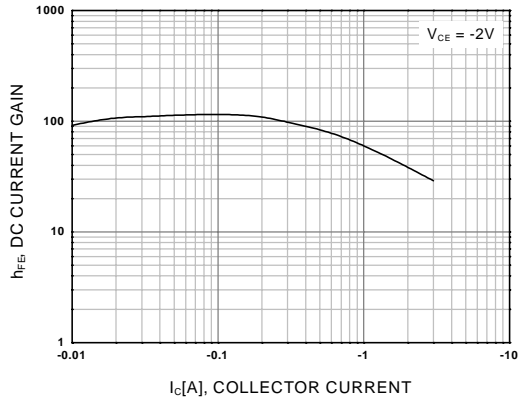


Figure 1. DC current Gain

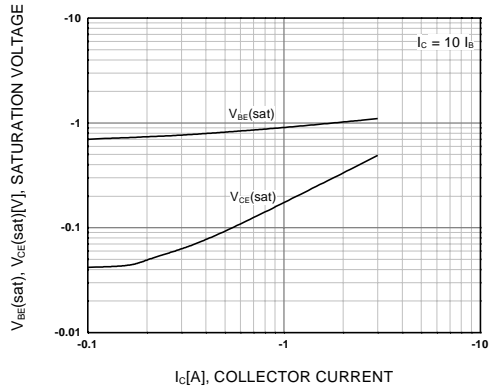


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

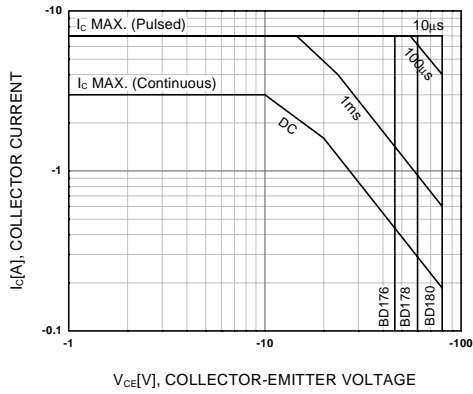


Figure 3. Safe Operating Area

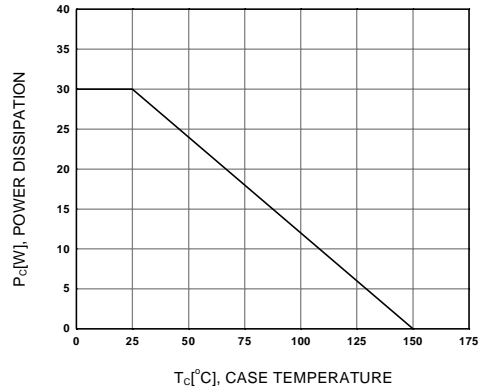
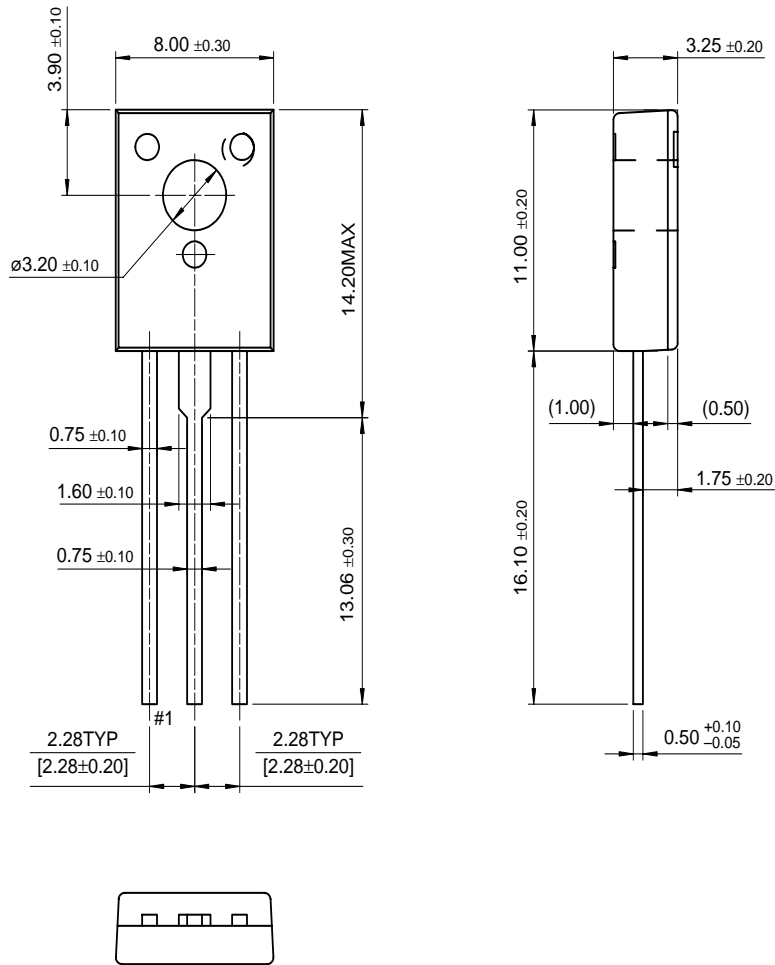


Figure 4. Power Derating

Package Dimensions

TO-126



Dimensions in Millimeters

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