



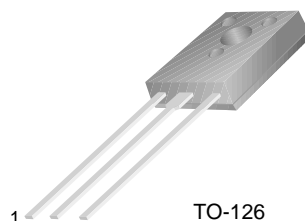
**THE DATASHEET OF
BD37716STU**



BD375/377/379

Medium Power Linear and Switching Applications

- Complement to BD376, BD378 and BD380 respectively



TO-126
1. Emitter 2. Collector 3. Base

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : BD375	50	V
	: BD377	75	V
	: BD379	100	V
V_{CEO}	Collector-Emitter Voltage : BD375	45	V
	: BD377	60	V
	: BD379	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current (DC)	2	A
I_{CP}	*Collector Current (Pulse)	3	A
I_B	Base Current	1	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	25	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 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	$I_C = 100\text{mA}, I_B = 0$	45			V
	: BD375					
	: BD377					
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 100\mu\text{A}, I_E = 0$	50			V
	: BD377					
	: BD379					
I_{CBO}	Collector Cut-off Current	$V_{CB} = 45\text{V}, I_E = 0$ $V_{CB} = 60\text{V}, I_E = 0$ $V_{CB} = 80\text{V}, I_E = 0$			2	μA
	: BD375					
	: BD377					
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$			100	μA
h_{FE1}	* DC Current Gain	$V_{CE} = 2\text{V}, I_C = 0.15\text{A}$	40		375	
h_{FE2}						
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = 1\text{A}, I_B = 0.1\text{A}$			1	V
$V_{BE(on)}$	* Base-Emitter ON Voltage	$V_{CE} = 2\text{V}, I_C = 1\text{A}$			1.5	V
t_{ON}	Turn ON Time	$V_{CC} = 30\text{V}, I_C = 0.5\text{A}$ $I_{B1} = - I_{B2} = 0.05\text{A}$ $R_L = 60\Omega$		50		ns
t_{OFF}	Turn OFF Time					

* Pulse Test: PW=350 μs , duty Cycle=2% Pulsed

h_{FE} Classification

Classification	6	10	16	25
h_{FE1}	40 ~ 100	63 ~ 160	100 ~ 250	150 ~ 375

Typical Characteristics

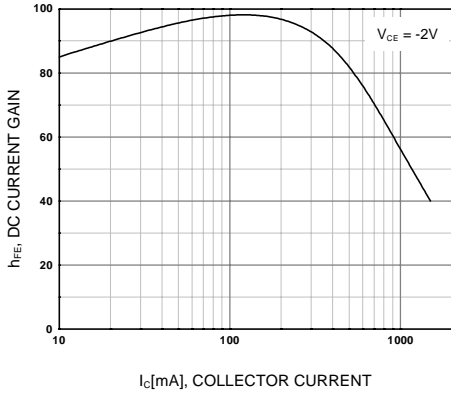


Figure 1. DC current Gain

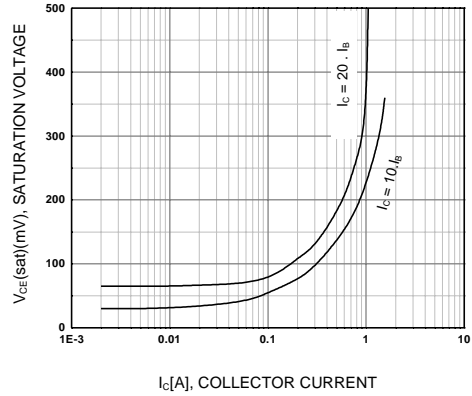


Figure 2. Collector-Emitter Saturation Voltage

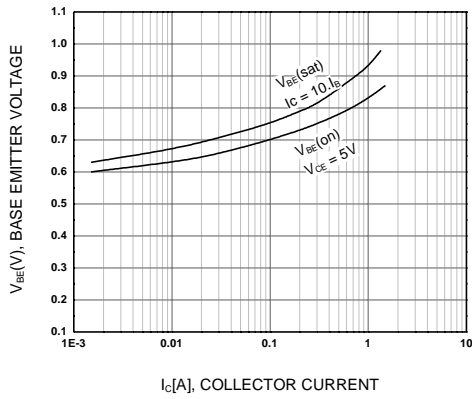


Figure 3. Base-Emitter Voltage

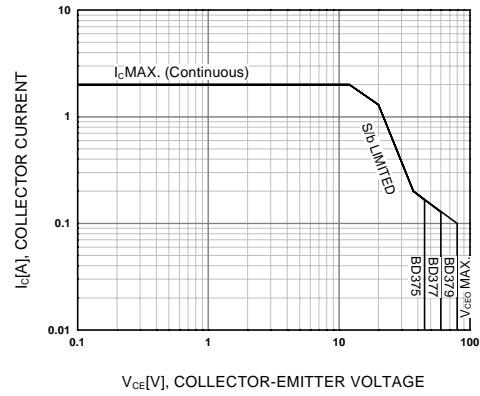


Figure 4. Safe Operating Area

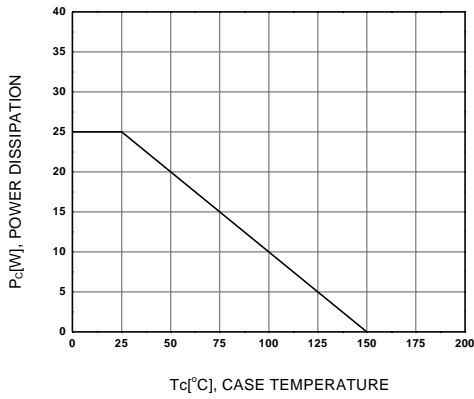


Figure 5. Power Derating

Package Dimensions

TO-126

BD375/377/379



Dimensions in Millimeters

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