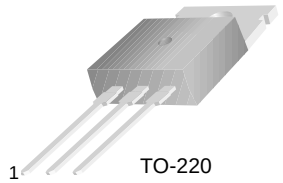
FAIRCHILD SEMICONDUCTOR™

BDW94/A/B/C

Power Linear and Switching Applications

- Power Darlington TR
- Complement to BDW93, BDW93A, BDW93B and BDW93C respectively



TO-220

1.Base 2.Collector 3.Emitter

PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage		
	: BDW94	- 45	V
	: BDW94A	- 60	V
	: BDW94B	- 80	V
	: BDW94C	- 100	V
V_{CEO}	Collector-Emitter Voltage		
	: BDW94	- 45	V
	: BDW94A	- 60	V
	: BDW94B	- 80	V
	: BDW94C	- 100	V
I_C	Collector Current (DC)	- 12	A
I_{CP}	*Collector Current (Pulse)	- 15	A
I_B	Base Current	- 0.2	A
P_C	Collector Dissipation (T_C=25°C)	80	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					
	: BDW94	I_C = - 100mA, I_B = 0	- 45			V
	: BDW94A		- 60			V
	: BDW94B		- 80			V
	: BDW94C		- 100			V
I_{CBO}	Collector Cut-off Current					
	: BDW94	V_{CB} = - 45V, I_E = 0			- 100	µA
	: BDW94A	V_{CB} = - 60V, I_E = 0			- 100	µA
	: BDW94B	V_{CB} = - 80V, I_E = 0			- 100	µA
	: BDW94C	V_{CB} = - 100V, I_E = 0			- 100	µA
I_{CEO}	Collector Cut-off Current					
	: BDW94	V_{CE} = - 45V, I_B = 0			-1	mA
	: BDW94A	V_{CE} = - 60V, I_B = 0			- 1	mA
	: BDW94B	V_{CE} = - 80V, I_B = 0			- 1	mA
	: BDW94C	V_{CE} = - 100V, I_B = 0			- 1	mA
I_{EBO}	Emitter Cut-off Current	V_{EB} = - 5V, I_C = 0			- 2	mA
h_{FE}	* DC Current Gain	V_{CE} = - 3V, I_C = -3A	1000			
		V_{CE} = - 3V, I_C = - 5A	750		20000	
		V_{CE} = - 3V, I_C = - 10A	100			
V_{CE}(sat)	* Collector-Emitter Saturation Voltage	I_C = - 5A, I_B = - 20mA			- 2	V
		I_C = - 10A, I_B = - 100mA			- 3	V
V_{BE}(sat)	* Base-Emitter Saturation Voltage	I_C = - 5A, I_B = - 20mA			- 2.5	V
		I_C = - 10A, I_B = - 100mA			- 4	V
V_F	* Parallel Diode Forward Voltage	I_F = - 5A		- 1.3	- 2	V
		I_F = -1 0A		- 1.8	- 4	V

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

Typical Characteristics

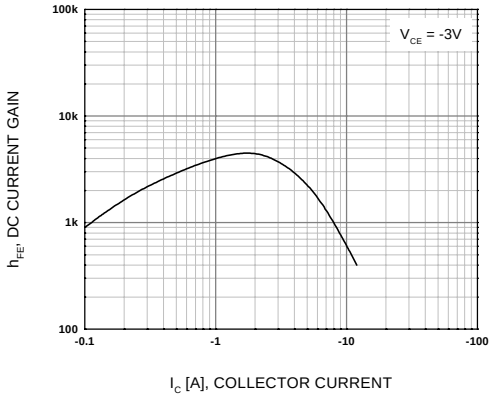


Figure 1. DC Current Gain

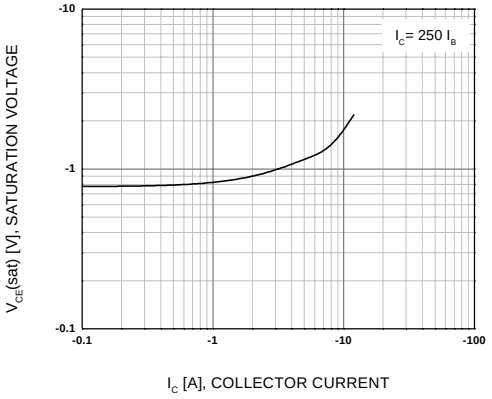


Figure 2. Collector-Emitter Saturation Voltage

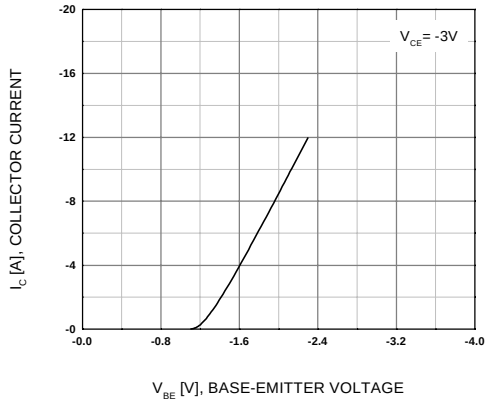


Figure 3. Base-Emitter On Voltage

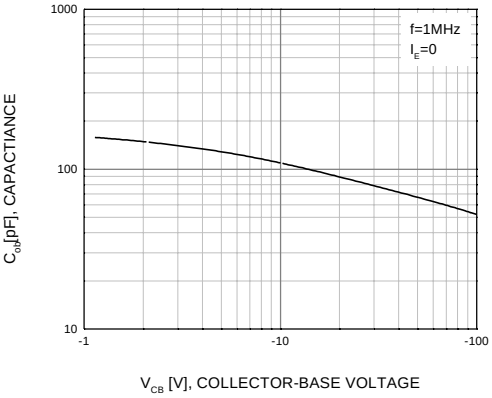


Figure 4. Output Capacitance

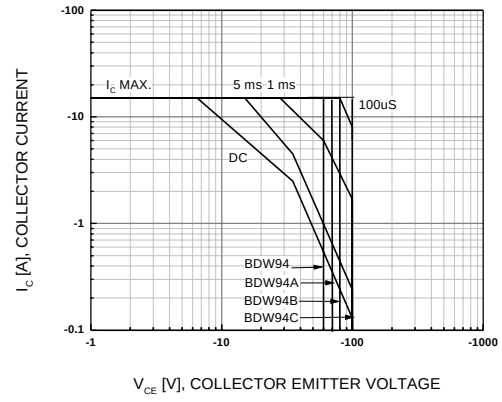


Figure 5. Safe Operating Area

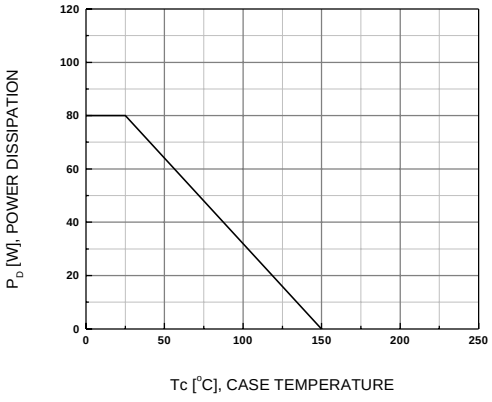
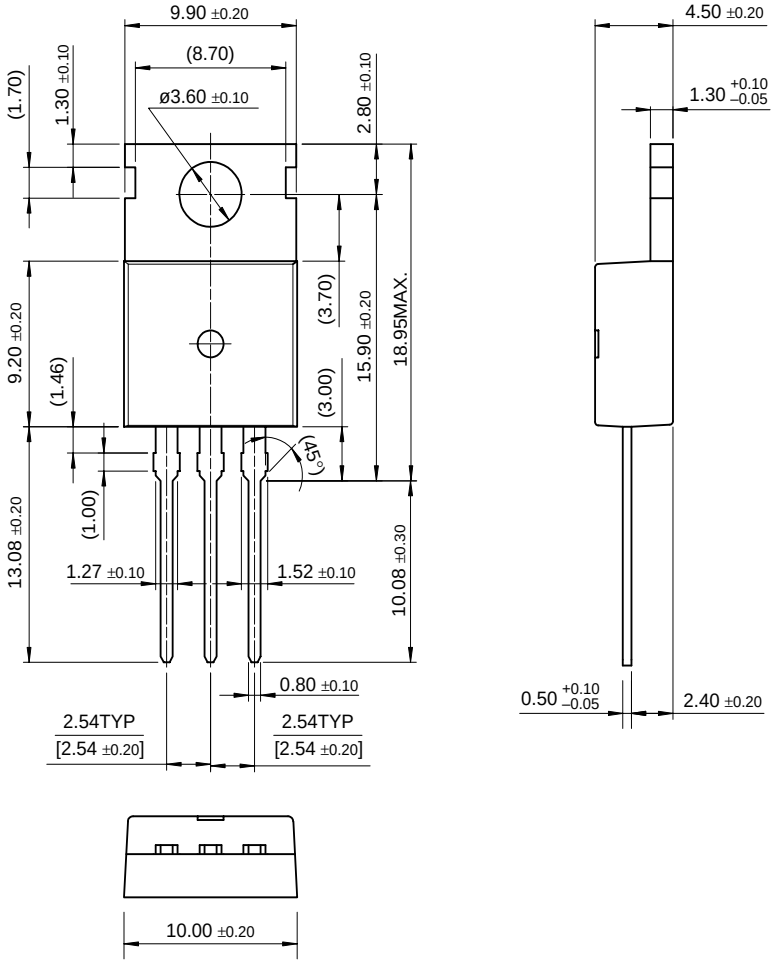


Figure 6. Power Derating

Package Demensions

TO-220



Dimensions in Millimeters

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