FAIRCHILD SEMICONDUCTOR®

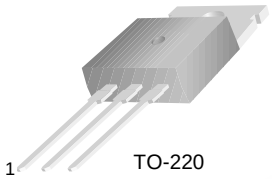
January 2005

BDW94/C

PNP Epitaxial Silicon Transistor

Power Linear and Switching Application

- Power Darlington TR
- Complement to BDW93 and BDW93C Respectively



TO-220

1.Base 2.Collector 3.Emitter

Absolute Maximum Ratings T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : BDW94 : BDW94C	 -45 -100	 V V
V_{CEO}	Collector-Emitter Voltage : BDW94 : BDW94C	 -45 -100	 V 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	Conditions	Min.	Typ.	Max	Units
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage : BDW94 : BDW94C	 I_C = -100mA, I_B = 0	 -45 -100			 V V
I_{CBO}	Collector Cut-off Current : BDW94 : BDW94C	 V_{CB} = -45V, I_E = 0 V_{CB} = -100V, I_E = 0			 -100 -100	 μA μA
I_{CEO}	Collector Cut-off Current : BDW94 : BDW94C	 V_{EB} = -45V, I_B = 0 V_{CE} = -100V, I_B = 0			 -1 -1	 mA 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 V_{CE} = -3V, I_C = -5A V_{CE} = -3V, I_C = -10A	1000 750 100		 20000	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage *	I_C = -5A, I_B = -20mA I_C = -10A, I_B = -100mA			-2 -3	V V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage *	I_C = -5A, I_B = -20mA I_C = -10A, I_B = -100mA			-2.5 -4	V V
V_F	Parallel Diode Forward Voltage *	I_F = -5A I_F = -10A		-1.3 -1.8	-2 -4	V V

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

Typical Performance Characteristics

Figure 1. DC Current Gain

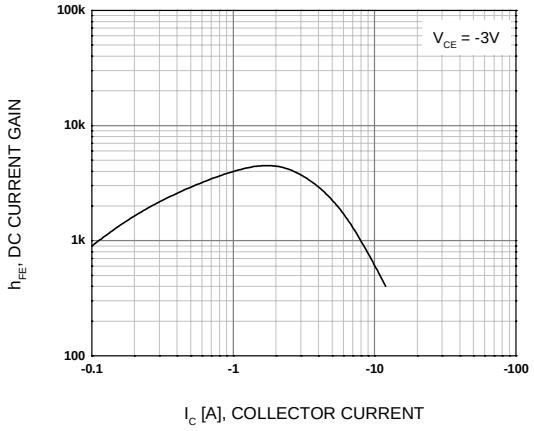


Figure 2. Collector-Emitter Saturation Voltage

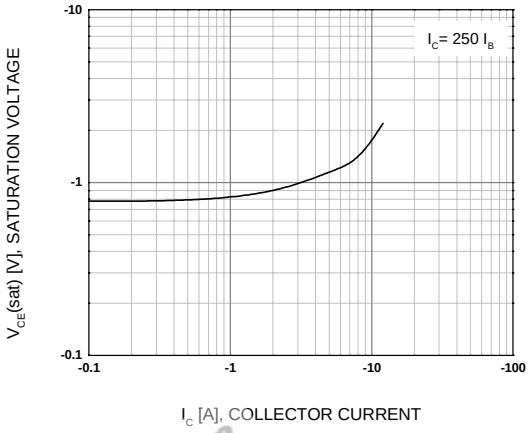


Figure 3. Base-Emitter On Voltage

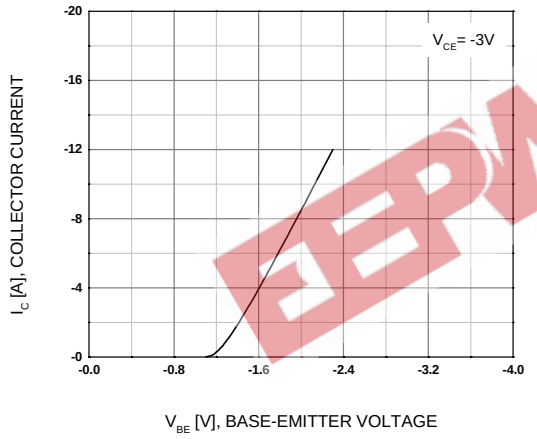


Figure 4. Output Capacitance

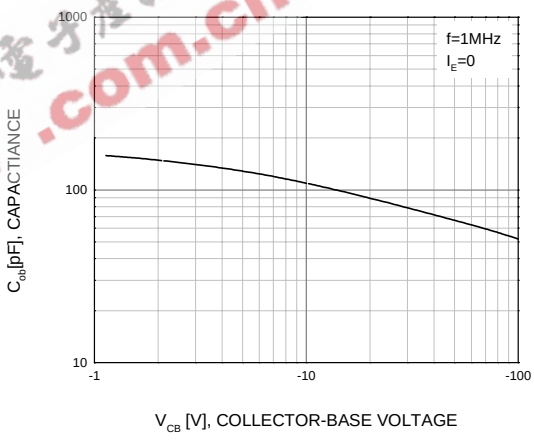


Figure 5. Safe Operating Area

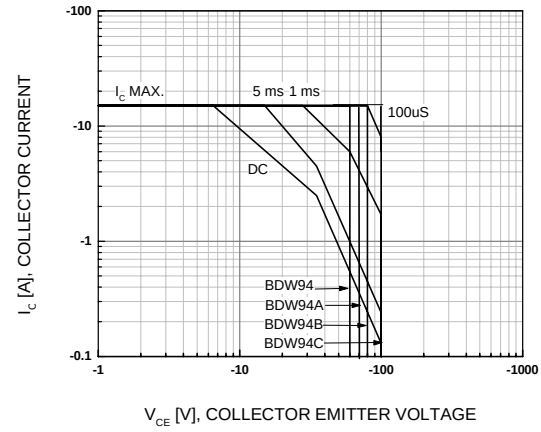
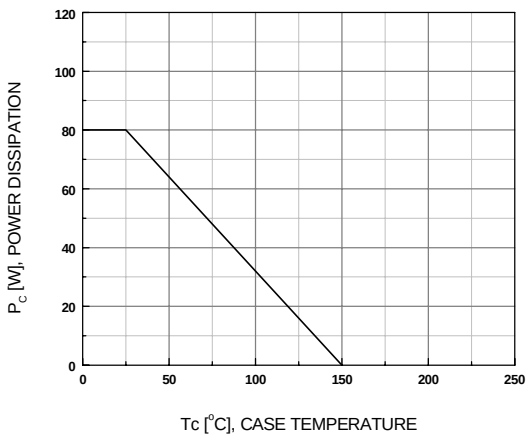
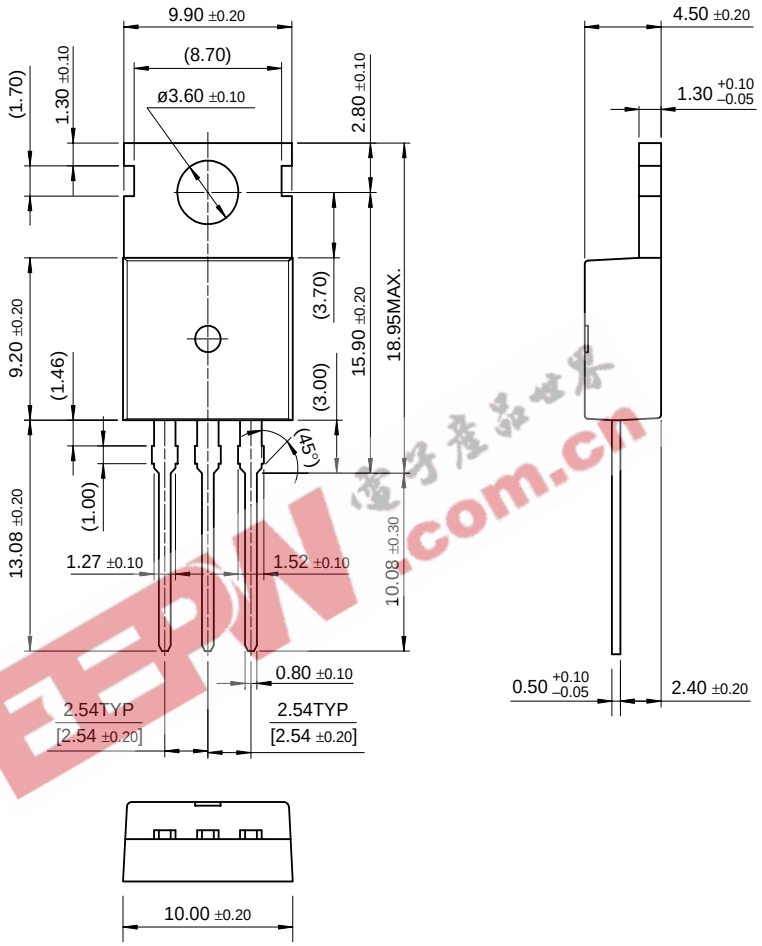


Figure 6. Power Derating



Mechanical Dimensions

TO-220



Dimensions in Millimeters

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