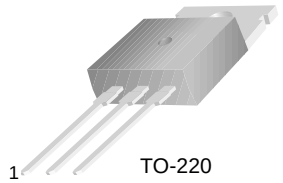
FAIRCHILD SEMICONDUCTOR™

BDW93/A/B/C

Hammer Drivers, Audio Amplifiers Applications

- Power Darlington TR
- Complement to BDW94, BDW94A, BDW94B and BDW94C respectively



TO-220

1.Base 2.Collector 3.Emitter

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage		
	: BDW93	45	V
	: BDW93A	60	V
	: BDW93B	80	V
	: BDW93C	100	V
V_{CEO}	Collector-Emitter Voltage		
	: BDW93	45	V
	: BDW93A	60	V
	: BDW93B	80	V
	: BDW93C	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

Thermal Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter		Value	Units
$R_{\theta jc}$	Thermal Resistance	Junction to Case	1.5	°C/W

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}(sus)	* Collector-Emitter Sustaining Voltage					
	: BDW93	I_C = 100mA, I_B = 0	45			V
	: BDW93A		60			V
	: BDW93B		80			V
	: BDW93C		100			V
I_{CBO}	Collector Cut-off Current					
	: BDW93	V_{CB} = 45V, I_E = 0			100	μA
	: BDW93A	V_{CB} = 60V, I_E = 0			100	μA
	: BDW93B	V_{CB} = 80V, I_E = 0			100	μA
	: BDW93C	V_{CB} = 100V, I_E = 0			100	μA
I_{CEO}	Collector Cut-off Current					
	: BDW93	V_{CE} = 45V, I_B = 0			1	mA
	: BDW93A	V_{CE} = 60V, I_B = 0			1	mA
	: BDW93B	V_{CE} = 80V, I_B = 0			1	mA
	: BDW93C	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 = 10A		1.8	4	V

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

Typical characteristics

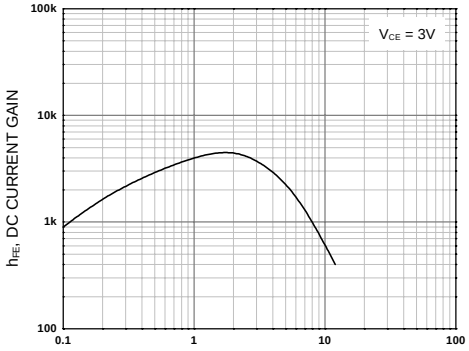


Figure 1. DC Current Gain

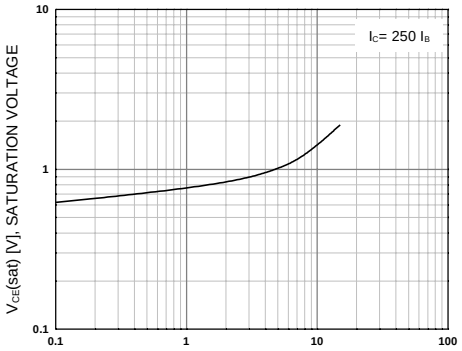


Figure 2. Collector-Emitter Saturation Voltage

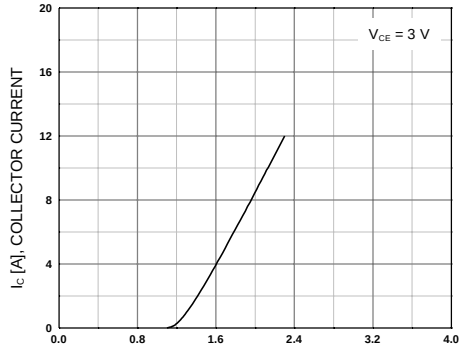


Figure 3. Base-Emitter On Voltage

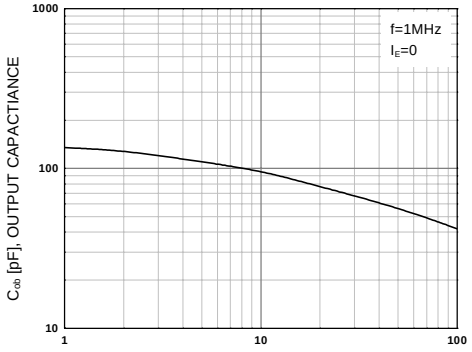


Figure 4. Collector Output Capacitance

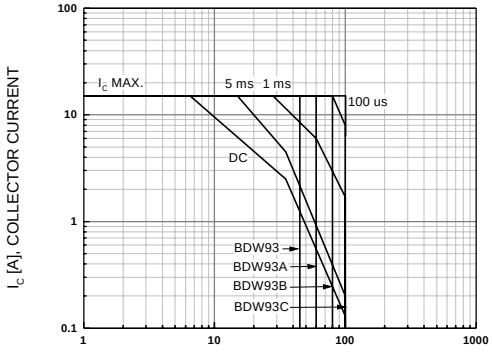


Figure 5. Safe Operating Area

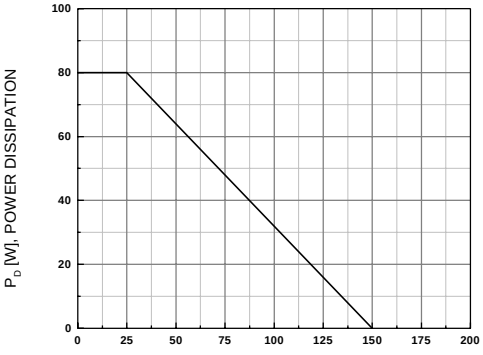
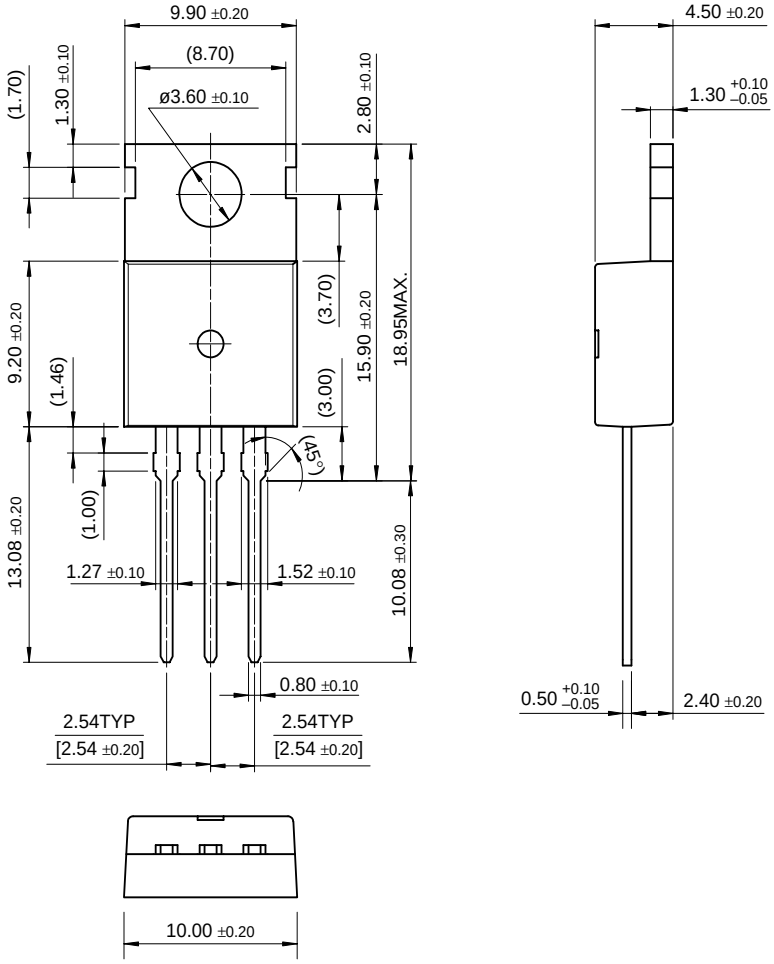


Figure 6. Power Derating

Package Demensions

TO-220



Dimensions in Millimeters

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