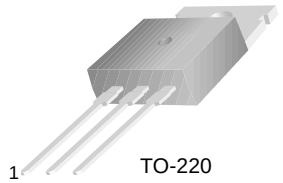
FAIRCHILD SEMICONDUCTOR™

BDW23/A/B/C

Hammer Drivers, Audio Amplifiers Applications

- Power Darlington TR
- Complement to BDW24, BDW24A, BDW24B and BDW24C 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		
	: BDW23	45	V
	: BDW23A	60	V
	: BDW23B	80	V
	: BDW23C	100	V
V_{CEO}	Collector-Emitter Voltage		
	: BDW23	45	V
	: BDW23A	60	V
	: BDW23B	80	V
	: BDW23C	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current (DC)	6	A
I_{CP}	*Collector Current (Pulse)	8	A
I_B	Base Current	0.2	A
P_C	Collector Dissipation (T_C=25°C)	50	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 ~ 150	°C

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Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
V_{CEO}(sus)	Collector-Emitter Sustaining Voltage					
	: BDW23	I_C = 100mA, I_B = 0	45			V
	: BDW23A		60			V
	: BDW23B		80			V
	: BDW23C		100			V
I_{CBO}	Collector Cut-off Current					
	: BDW23	V_{CB} = 45V, I_E = 0			200	µA
	: BDW23A	V_{CB} = 60V, I_E = 0			200	µA
	: BDW23B	V_{CB} = 80V, I_E = 0			200	µA
	: BDW23C	V_{CB} = 100V, I_E = 0			200	µA
I_{CEO}	Collector Cut-off Current					
	: BDW23	V_{CE} = 22V, I_B = 0			500	µA
	: BDW23A	V_{CE} = 30V, I_B = 0			500	µA
	: BDW23B	V_{CE} = 40V, I_B = 0			500	µA
	: BDW23C	V_{CE} = 50V, I_B = 0			500	µA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V, I_C = 0			2	mA
h_{FE}	* DC Current Gain	V_{CE} = 3V, I_C = 1A	1000			
		V_{CE} = 3V, I_C = 2A	750		20000	
		V_{CE} = 3V, I_C = 6A	100			
V_{CE}(sat)	* Collector-Emitter Saturation Voltage	I_C = 2A, I_B = 8mA			2	V
		I_C = 6A, I_B = 60mA			3	V
V_{BE}(sat)	* Base-Emitter Saturation Voltage	I_C = 2A, I_B = 8mA			2.5	V
V_{BE}(on)	* Base-Emitter ON Voltage	V_{CE} = 3V, I_C = 1A			2.5	V
		V_{CE} = 3V, I_C = 6A			3	V
V_F	* Parallel Diode Forward Voltage	I_F = 2A			1.8	V

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

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Typical Characteristics

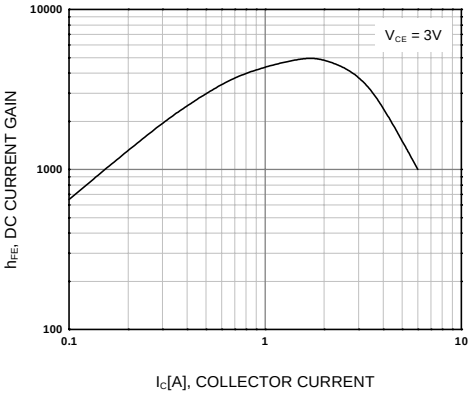


Figure 1. DC current Gain

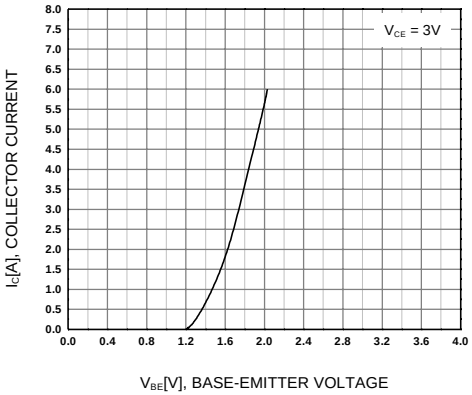


Figure 2. Collector-Emitter Saturation Voltage

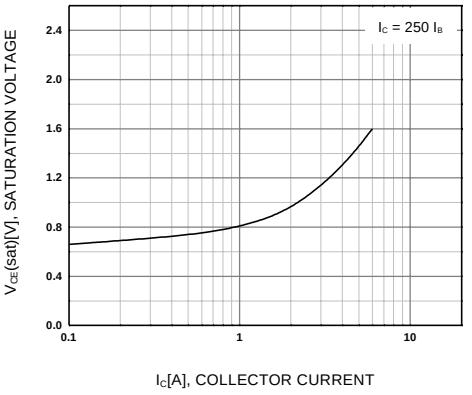


Figure 3. Base-Emitter On Voltage

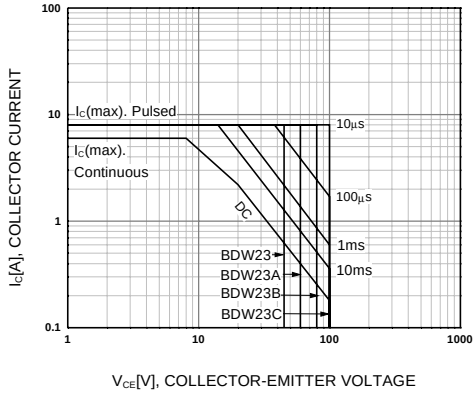


Figure 4. Safe Operating Area

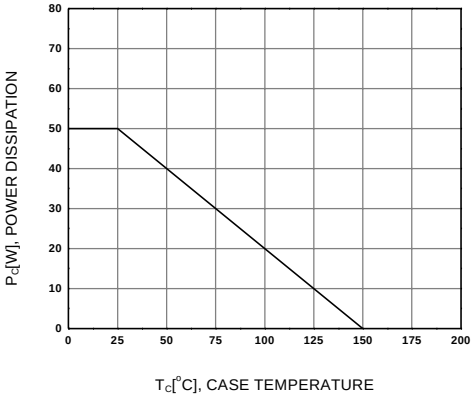
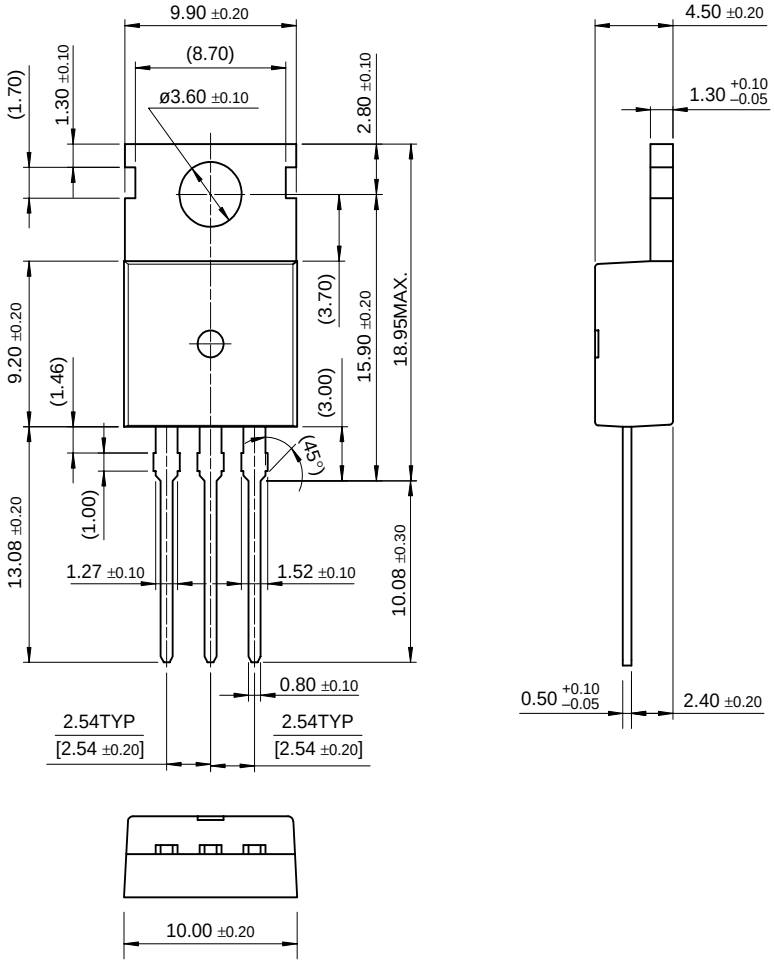


Figure 5. Power Derating

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Package Demensions

TO-220



Dimensions in Millimeters

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