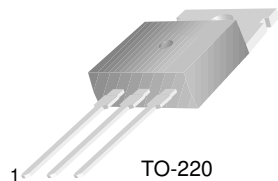


BDW23/A/B/C

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 $T_C=25^\circ\text{C}$ 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 ($T_C=25^\circ\text{C}$)	50	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 65 ~ 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 60 80 100			V V V V
	: BDW23					
	: BDW23A					
	: BDW23B : BDW23C					
I_{CBO}	Collector Cut-off Current	$V_{CB} = 45\text{V}, I_E = 0$ $V_{CB} = 60\text{V}, I_E = 0$ $V_{CB} = 80\text{V}, I_E = 0$ $V_{CB} = 100\text{V}, I_E = 0$			200 200 200 200	μA μA μA μA
	: BDW23					
	: BDW23A					
	: BDW23B : BDW23C					
I_{CEO}	Collector Cut-off Current	$V_{CE} = 22\text{V}, I_B = 0$ $V_{CE} = 30\text{V}, I_B = 0$ $V_{CE} = 40\text{V}, I_B = 0$ $V_{CE} = 50\text{V}, I_B = 0$			500 500 500 500	μA μA μA μA
	: BDW23					
	: BDW23A					
	: BDW23B : BDW23C					
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$			2	mA
h_{FE}	* DC Current Gain	$V_{CE} = 3\text{V}, I_C = 1\text{A}$	1000		20000	
		$V_{CE} = 3\text{V}, I_C = 2\text{A}$	750			
		$V_{CE} = 3\text{V}, I_C = 6\text{A}$	100			
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 8\text{mA}$			2	V
		$I_C = 6\text{A}, I_B = 60\text{mA}$			3	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 8\text{mA}$			2.5	V
$V_{BE(on)}$	* Base-Emitter ON Voltage	$V_{CE} = 3\text{V}, I_C = 1\text{A}$			2.5	V
		$V_{CE} = 3\text{V}, I_C = 6\text{A}$			3	V
V_F	* Parallel Diode Forward Voltage	$I_F = 2\text{A}$			1.8	V

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

Typical Characteristics

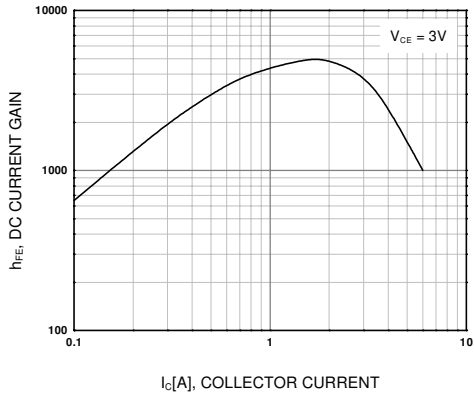


Figure 1. DC current Gain

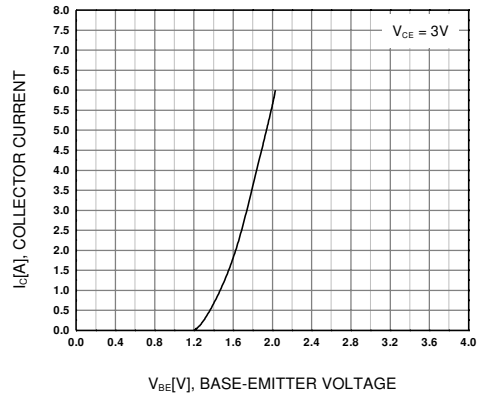


Figure 2. Collector-Emitter Saturation Voltage

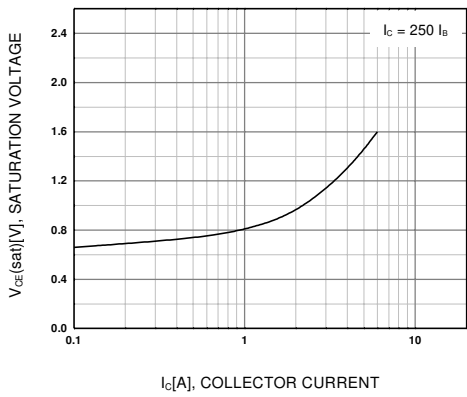


Figure 3. Base-Emitter On Voltage

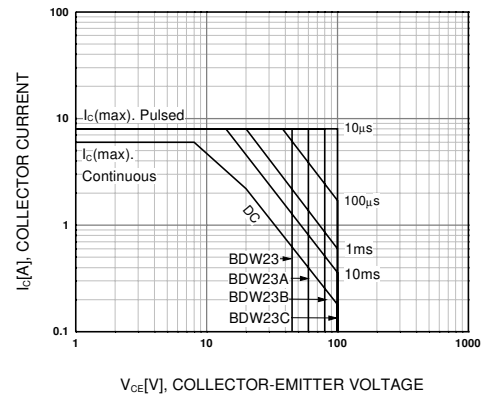


Figure 4. Safe Operating Area

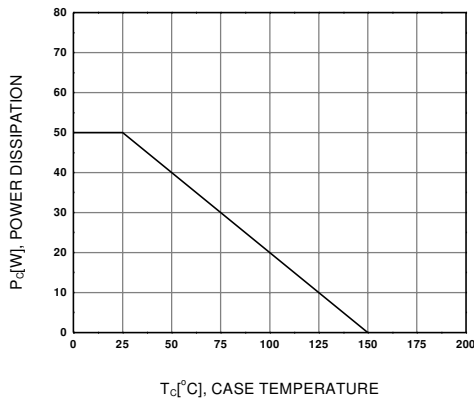
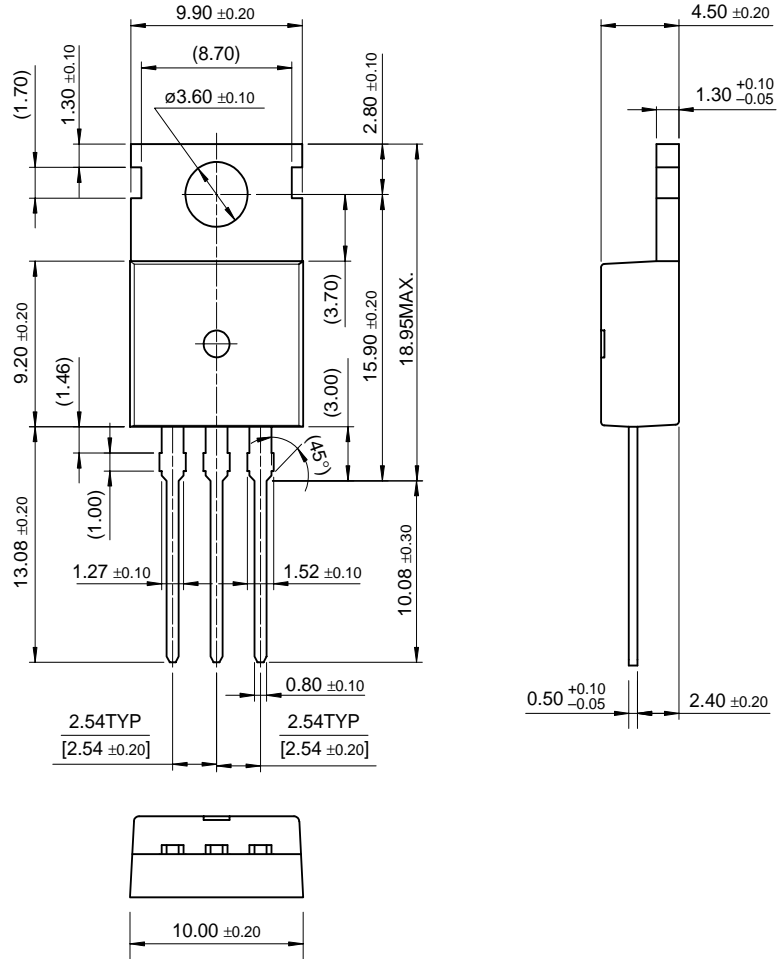


Figure 5. Power Derating

Package Dimensions

TO-220



Dimensions in Millimeters

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