

BDW24/A/B/C

Hammer Drivers, Audio Amplifiers Applications

- Power Darlington TR
- Complement to BDW23, BDW23A, BDW23B and BDW23C respectively



TO-220
1.Base 2.Collector 3.Emitter

PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage		
	: BDW24	- 45	V
	: BDW24A	- 60	V
	: BDW24B	- 80	V
	: BDW24C	- 100	V
V_{CEO}	Collector-Emitter Voltage		
	: BDW24	- 45	V
	: BDW24A	- 60	V
	: BDW24B	- 80	V
	: BDW24C	- 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
	: BDW24					
	: BDW24A					
	: BDW24B : BDW24C					
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
	: BDW24					
	: BDW24A					
	: BDW24B : BDW24C					
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
	: BDW24					
	: BDW24A					
	: BDW24B : BDW24C					
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

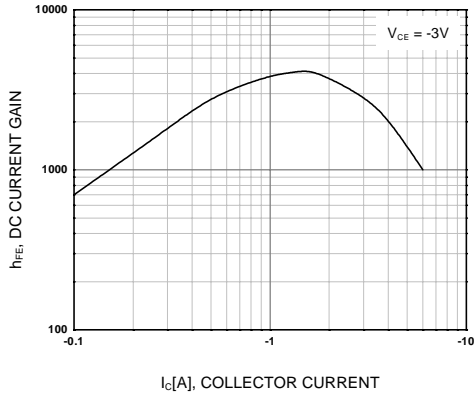


Figure 1. DC current Gain

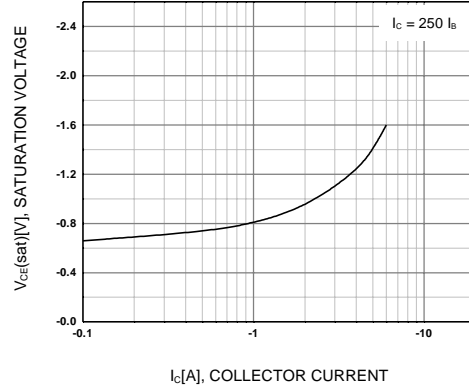


Figure 2. Collector-Emitter Saturation Voltage

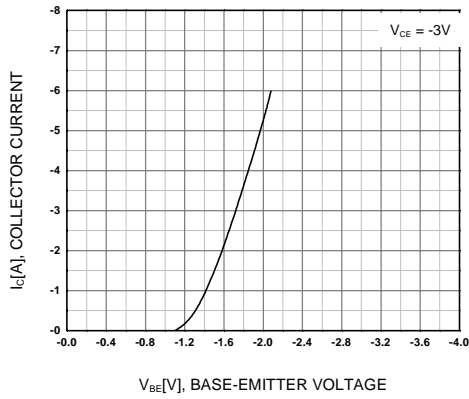


Figure 3. Base-Emitter On Voltage

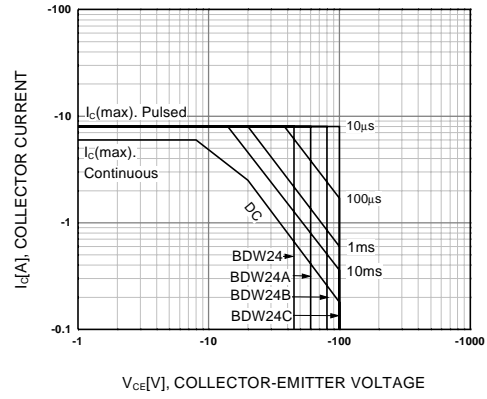


Figure 4. Safe Operating Area

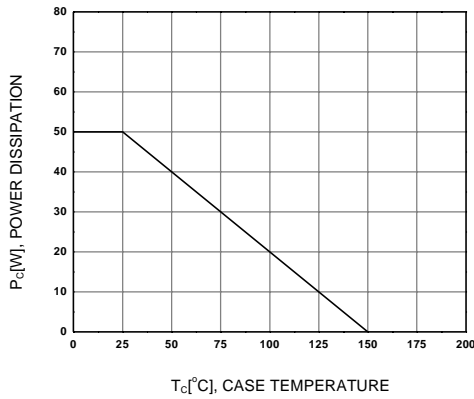


Figure 5. Power Derating

Package Dimensions

BDW24/A/B/C

TO-220



Dimensions in Millimeters

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Product	Product status	Pricing*	Package type	Leads	Packing method
BDW24BTU	Full Production	\$0.362	TO-220	3	RAIL

* 1,000 piece Budgetary Pricing

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* 1,000 piece Budgetary Pricing

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* 1,000 piece Budgetary Pricing

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