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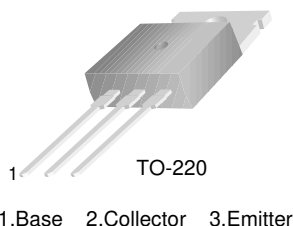
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# BDW94/C

## PNP Epitaxial Silicon Transistor

### Power Linear and Switching Application

- Power Darlington TR
- Complement to BDW93 and BDW93C Respectively



### Absolute Maximum Ratings T<sub>a</sub> = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage		
	: BDW94	-45	V
	: BDW94C	-100	V
V <sub>CEO</sub>	Collector-Emitter Voltage		
	: BDW94	-45	V
	: BDW94C	-100	V
I <sub>C</sub>	Collector Current (DC)	-12	A
I <sub>CP</sub>	Collector Current (Pulse) *	-15	A
I <sub>B</sub>	Base Current	-0.2	A
P <sub>C</sub>	Collector Dissipation (T <sub>C</sub> = 25°C)	80	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	-65 ~ 150	°C

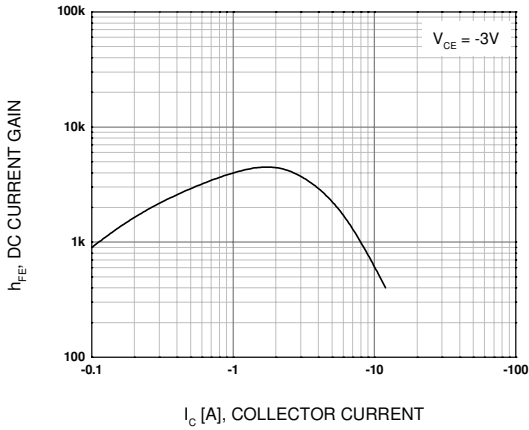
**Electrical Characteristics**  $T_C = 25^\circ\text{C}$  unless otherwise noted

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

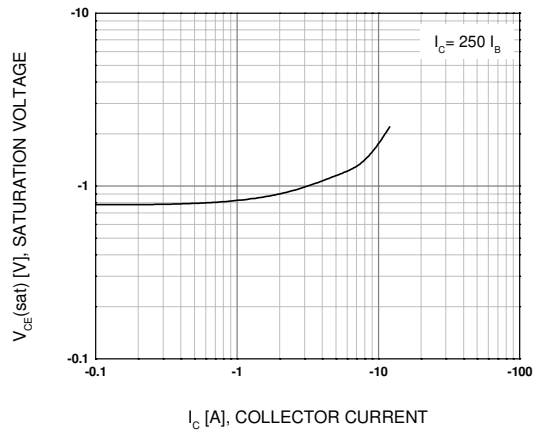
\* Pulse Test: PW = 300 $\mu\text{s}$ , Duty Cycle = 1.5% Pulsed

## Typical Performance Characteristics

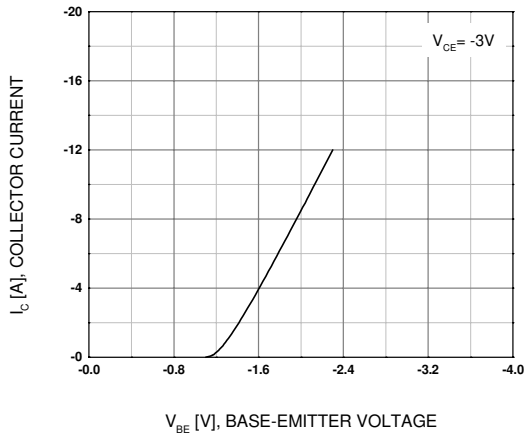
**Figure 1. DC Current Gain**



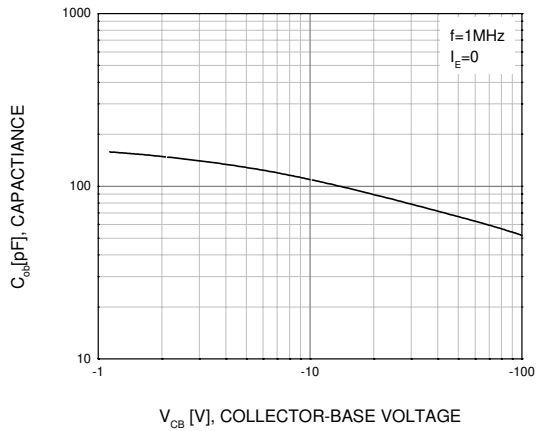
**Figure 2. Collector-Emitter Saturation Voltage**



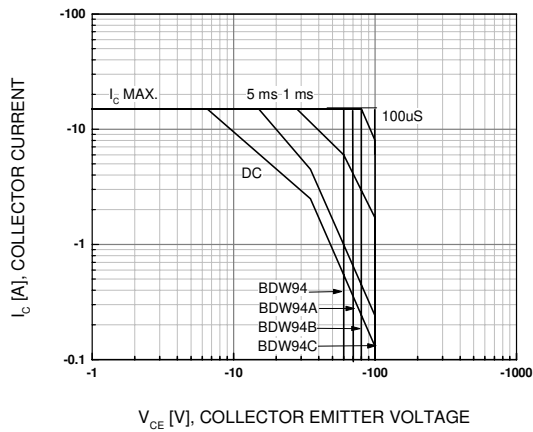
**Figure 3. Base-Emitter On Voltage**



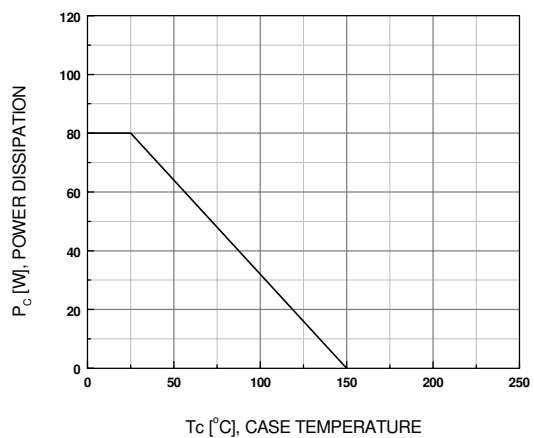
**Figure 4. Output Capacitance**



**Figure 5. Safe Operating Area**

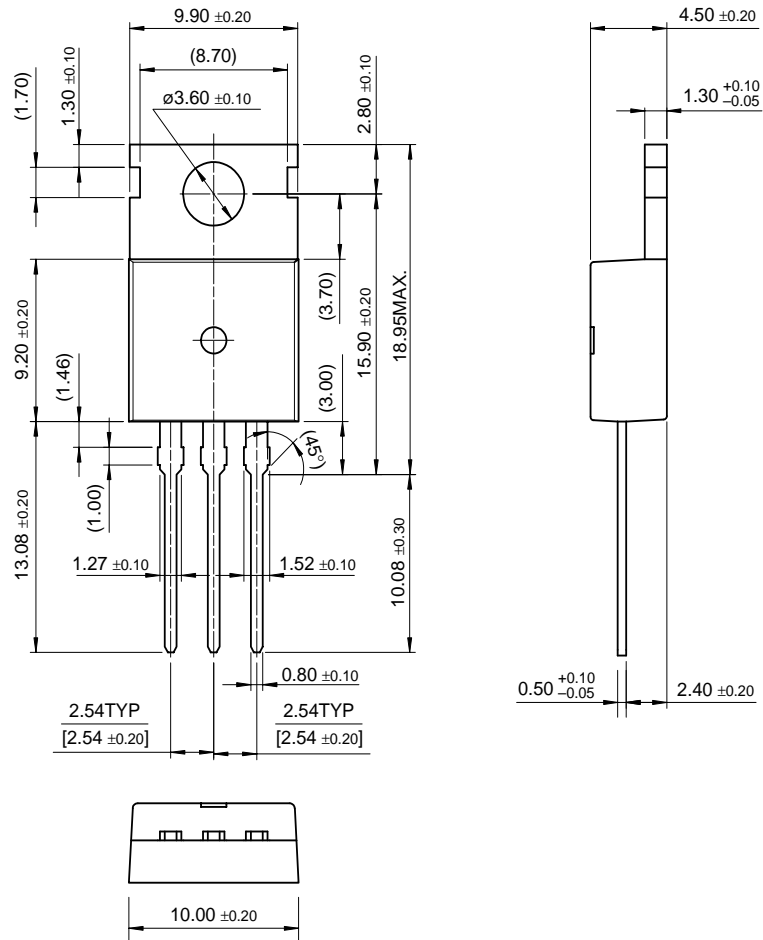


**Figure 6. Power Derating**



Mechanical Dimensions

TO-220



Dimensions in Millimeters

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