

January 2005

BDW94/C

PNP Epitaxial Silicon Transistor

Power Linear and Switching Application

- · Power Darlington TR
- · Complement to BDW93 and BDW93C Respectively



1.Base 2.Collector 3.Emitter

Absolute Maximum Ratings $T_a = 25$ °C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage		
020	: BDW94	-45	V
	: BDW94C	-100	V
V_{CEO}	Collector-Emitter Voltage		
020	: BDW94	-45	V
	: BDW94C	-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

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

Symbol	Parameter	Conditions	Min.	Тур.	Max	Units
V _{CEO(sus)}	Collector-Emitter Sustaining Voltage : BDW94 : BDW94C	I _C = -100mA, I _B = 0	-45 -100			V V
I _{CBO}	Collector Cut-off Current : BDW94 : BDW94C	$V_{CB} = -45V, I_{E} = 0$ $V_{CB} = -100V, I_{E} = 0$			-100 -100	μ Α μ Α
I _{CEO}	Collector Cut-off Current : BDW94 : BDW94C	V _{EB} = -45V, I _B = 0 V _{CE} = -100V, I _B = 0			-1 -1	mA mA
I _{EBO}	Emitter Cut-off Current	$V_{EB} = -5V, I_{C} = 0$			-2	mA
h _{FE}	DC Current Gain *	$V_{CE} = -3V$, $I_{C} = -3A$ $V_{CE} = -3V$, $I_{C} = -5A$ $V_{CE} = -3V$, $I_{C} = -10A$	1000 750 100		20000	
V _{CE(sat)}	Collector-Emitter Saturation Voltage *	I _C = -5A, I _B = -20mA I _C = -10A, I _B = -100mA			-2 -3	V V
V _{BE(sat)}	Base-Emitter Saturation Voltage *	I _C = -5A, I _B = -20mA I _C = -10A, I _B = -100mA			-2.5 -4	V V
V _F	Parallel Diode Forward Voltage *	I _F = -5A I _F = -10A		-1.3 -1.8	-2 -4	V V

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

Typical Performance Characteristics

Figure 1. DC Current Gain

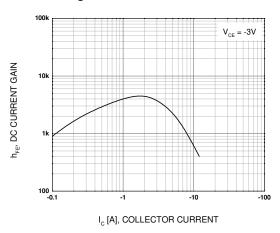


Figure 2. Collector-Emitter Saturation Voltage

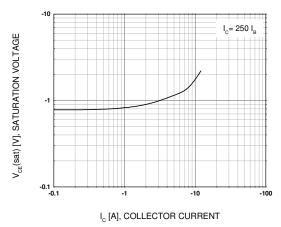


Figure 3. Base-Emitter On Voltage

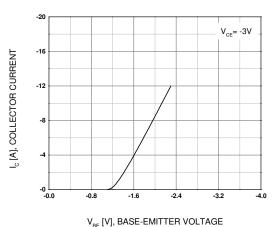


Figure 4. Output Capacitance

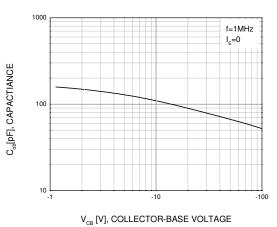


Figure 5. Safe Operating Area

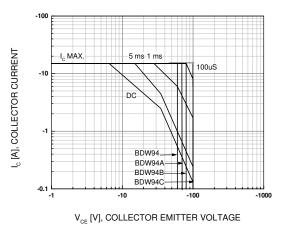
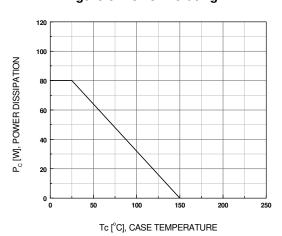


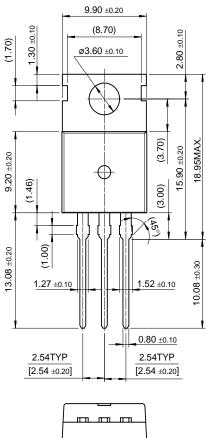
Figure 6. Power Derating

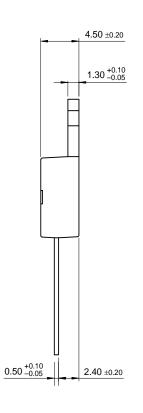


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Mechanical Dimensions

TO-220





10.00 ±0.20

Dimensions in Millimeters

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