

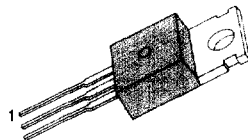
POWER DARLINGTON TR
POWER LINEAR AND SWITCHING
APPLICATIONS

- Complement to BDW93, BDW93A, BDW93B and BDW93C respectively

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Collector Emitter Voltage : BDW94	V_{CBO}	- 45	V
: BDW94A		- 60	V
: BDW94B		- 80	V
: BDW94C		- 100	V
Collector Emitter Voltage : BDW94	V_{CEO}	- 45	V
: BDW94A		- 60	V
: BDW94B		- 80	V
: BDW94C		- 100	V
Collector Current (DC)	I_C	- 12	A
Collector Current (Pulse)	I_C	- 15	A
Base Current	I_B	- 0.2	A
Collector Dissipation ($T_C=25^\circ\text{C}$)	P_C	80	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-65 ~ 150	$^\circ\text{C}$

TO-220



1. Base 2. Collector 3. Emitter

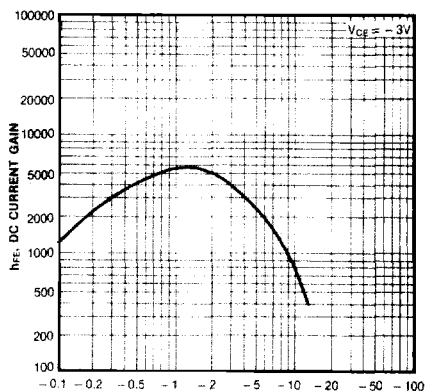
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ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$)

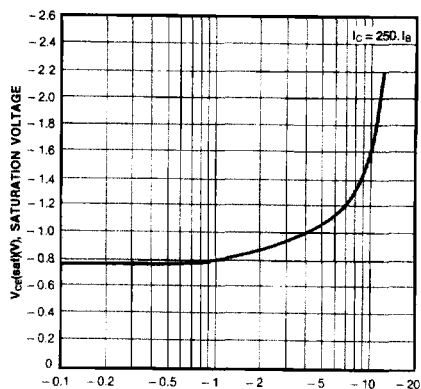
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Emitter Sustaining Voltage : BDW94	$V_{CEO(sus)}$	$I_C = -100\text{mA}, I_B = 0$	- 45			V
: BDW94A			- 60			V
: BDW94B			- 80			V
: BDW94C			- 100			V
Collector Cutoff Current : BDW94	I_{CBO}	$V_{CB} = -45\text{V}, I_E = 0$			- 100	μA
: BDW94A		$V_{CB} = -60\text{V}, I_E = 0$			- 100	μA
: BDW94B		$V_{CB} = -80\text{V}, I_E = 0$			- 100	μA
: BDW94C		$V_{CB} = -100\text{V}, I_E = 0$			- 100	μA
Collector Cutoff Current : BDW94	I_{CEO}	$V_{CE} = -45\text{V}, I_B = 0$			- 1	mA
: BDW94A		$V_{CE} = -60\text{V}, I_B = 0$			- 1	mA
: BDW94B		$V_{CE} = -80\text{V}, I_B = 0$			- 1	mA
: BDW94C		$V_{CE} = -100\text{V}, I_B = 0$			- 1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$			- 2	mA
*DC Current Gain	h_{FE}	$V_{CE} = -3\text{V}, I_C = -3\text{A}$	1000		20000	
		$V_{CE} = -3\text{V}, I_C = -5\text{A}$	750			
		$V_{CE} = -3\text{V}, I_C = -10\text{A}$	100			
*Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -5\text{A}, I_B = -20\text{mA}$			- 2	V
		$I_C = -10\text{A}, I_B = -100\text{mA}$			- 3	V
*Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -5\text{A}, I_B = -20\text{mA}$			- 2.5	V
		$I_C = -10\text{A}, I_B = -100\text{mA}$			- 4	V
* Parallel Diode Forward Voltage	V_f	$I_F = -5\text{A}$		- 1.3	- 2	V
		$I_F = -10\text{A}$		- 1.8	- 4	V

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

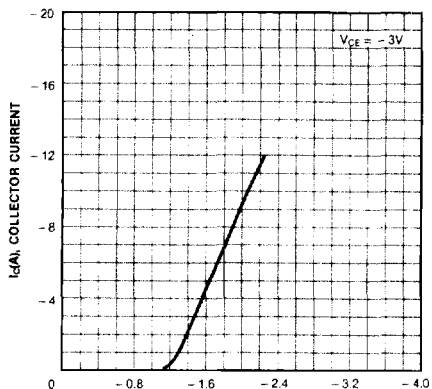
DC CURRENT GAIN

 I_C (A), COLLECTOR CURRENT

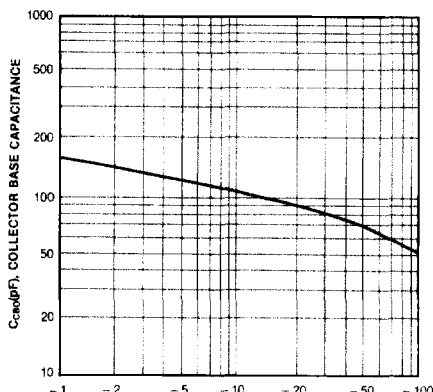
COLLECTOR EMITTER SATURATION VOLTAGE

 I_C (A), COLLECTOR CURRENT

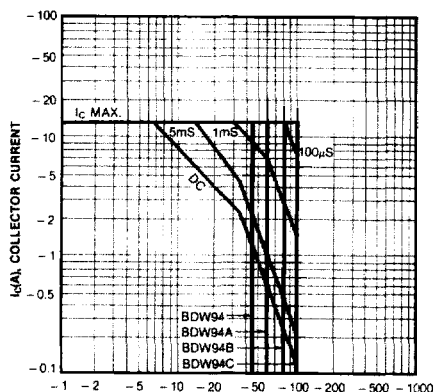
BASE EMITTER VOLTAGE

 V_{BE} (V), BASE EMITTER VOLTAGE

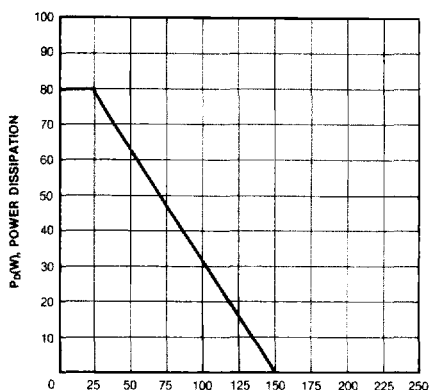
COLLECTOR BASE CAPACITANCE

 V_{CB} (V), COLLECTOR BASE VOLTAGE

SAFE OPERATING AREA

 V_{CE} (V), COLLECTOR EMITTER VOLTAGE

POWER DERATING

 T_C (°C), CASE TEMPERATURE