



BDW93CFP BDW94CFP

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

- SGS-THOMSON PREFERRED SALESTYPES
- MONOLITHIC DARLINGTON CONFIGURATION
- COMPLEMENTARY PNP - NPN DEVICES
- INTEGRATED ANTIPARALLEL COLLECTOR-EMITTER DIODE
- FULLY MOLDED ISOLATED PACKAGE
- 2000 V DC ISOLATION (U.L. COMPLIANT)

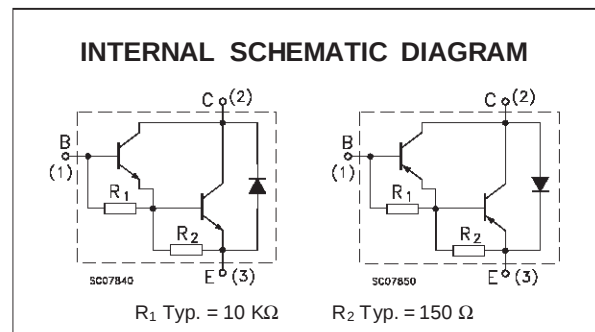
APPLICATIONS

- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

The BDW93CFP, is a silicon epitaxial-base NPN transistor in monolithic Darlington configuration and is mounted in TO-220FP fully molded isolated package. It is intended for use in power linear and switching applications.

The complementary PNP type is the BDW94CFP.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
		NPN	BDW93CFP	
		PNP	BDW94CFP	
V _{CBO}	Collector-Base Voltage (I _E = 0)		100	V
V _{CEO}	Collector-Emitter Voltage (I _B = 0)		100	V
I _C	Collector Current		12	A
I _{CM}	Collector Peak Current		15	A
I _B	Base Current		0.2	A
P _{tot}	Total Dissipation at T _c ≤ 25 °C		33	W
T _{stg}	Storage Temperature		-65 to 150	°C
T _j	Max. Operating Junction Temperature		150	°C

For PNP types voltage and current values are negative.

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	3.8	$^{\circ}\text{C/W}$
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 100\text{ V}$ $V_{CB} = 100\text{ V}$ $T_{case} = 150^{\circ}\text{C}$			100 5	μA mA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = 80\text{ V}$			1	mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5\text{ V}$			2	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage ($I_B = 0$)	$I_C = 100\text{ mA}$	100			V
$V_{CE(sat)}^*$	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
$V_{BE(sat)}^*$	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
h_{FE}^*	DC Current Gain	$I_C = 3\text{ A}$ $V_{CE} = 3\text{ V}$ $I_C = 5\text{ A}$ $V_{CE} = 3\text{ V}$ $I_C = 10\text{ A}$ $V_{CE} = 3\text{ V}$	1000 750 100		20000	
V_F^*	Parallel-diode Forward Voltage	$I_F = 5\text{ A}$ $I_F = 10\text{ A}$		1.3 1.8	2 4	V V
h_{fe}	Small Signal Current Gain	$I_C = 1\text{ A}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ MHz}$	20			

* Pulsed: Pulse duration = 300 μs , duty cycle 1.5 %
For PNP types voltage and current values are negative.

Safe Operating Area

