

BDW93CFP BDW94CFP

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- MONOLITHIC DARLINGTON CONFIGURATION
- COMPLEMENTARY PNP NPN DEVICES
- INTEGRATED ANTIPARALLEL
 COLLECTOR-EMITTER DIODE
- FULLY MOLDED INSULATED PACKAGE
- 2000 V DC INSULATION (U.L. COMPLIANT)

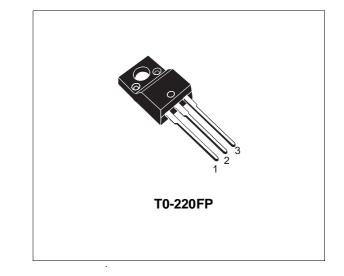
APPLICATIONS

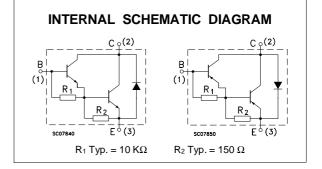
 LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

The BDW93CFP is a silicon Epitaxial-Base NPN transistor in monolithic Darlington configuration mounted in TO-220FP fully molded insulated package. It is intented for use in power linear and switching applications.

The complementary PNP type is the BDW94CFP.





ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter NPN		Value	Unit	
			BDW93CFP		
		PNP	BDW94CFP		
Vсво	Collector-Base Voltage (I _E = 0)		100	V	
VCEO	Collector-Emitter Voltage $(I_B = 0)$		100	V	
lc	Collector Current		12		
I _{CM}	Collector Peak Current		15	Α	
Ι _Β	Base Current		0.2	Α	
Ptot	Total Dissipation at $T_c \le 25$ °C		33	W	
T _{stg}	Storage Temperature		-65 to 150	°C	
Tj	Max. Operating Junction Temperature		150	°C	

For PNP types voltage and current values are negative.

September 2001

THERMAL DATA

R _{thj-case} Thermal Resistance Junction-case	Max	3.8	°C/W
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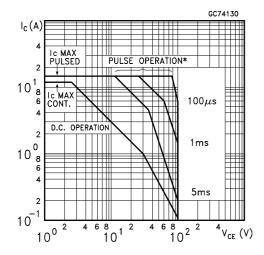
ELECTRICAL CHARACTERISTICS ($T_{case} = 25 \,^{\circ}C$ unless otherwise specified)

Symbol Parameter		Test Co	Min.	Тур.	Max.	Unit	
I _{СВО}	Collector Cut-off Current (I _E = 0)	V _{CB} = 100 V V _{CB} = 100 V	T _{case} = 150 ^o C			100 5	μA mA
I _{CEO}	Collector Cut-off Current ($I_B = 0$)	V _{CE} = 80 V				1	mA
I _{EBO}	Emitter Cut-off Current $(I_C = 0)$	$V_{EB} = 5 V$				2	mA
$V_{CEO(sus)^*}$	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 100 mA		100			V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	Ic = 5 A I _C = 10 A	I _B = 20 mA I _B = 100 mA			2 3	V V
V _{BE(sat)} *	Base-Emitter Saturation Voltage	Ic = 5 A Ic = 10 A	I _B = 20 mA I _B = 100 mA			2.5 4	V V
h _{FE} *	DC Current Gain	$I_{C} = 3 A$ $I_{C} = 5 A$ $I_{C} = 10 A$	V _{CE} = 3 V V _{CE} = 3 V V _{CE} = 3 V	1000 750 100		20000	
V _F *	Parallel-diode Forward Voltage	I _F = 5 A I _F = 10 A			1.3 1.8	2 4	V V
h _{fe}	Small Signal Current Gain	I _C = 1 A f = 1 MHz	V _{CE} = 10 V	20			

* Pulsed: Pulse duration = 300 μ s, duty cycle 1.5 %

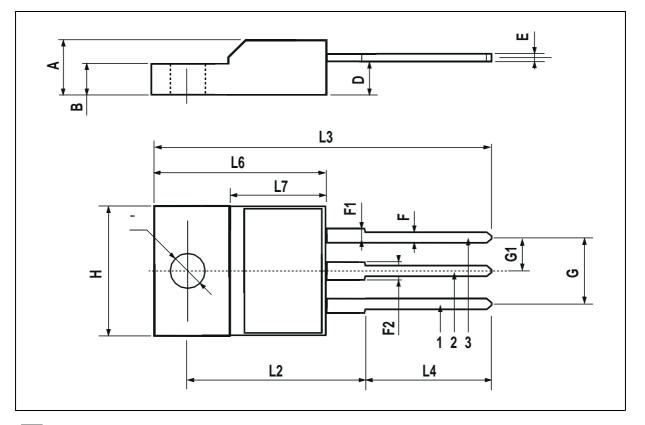
For PNP types voltage and current values are negative.

Safe Operating Area



DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
А	4.4		4.6	0.173		0.181
В	2.5		2.7	0.098		0.106
D	2.5		2.75	0.098		0.108
E	0.45		0.7	0.017		0.027
F	0.75		1	0.030		0.039
F1	1.15		1.7	0.045		0.067
F2	1.15		1.7	0.045		0.067
G	4.95		5.2	0.195		0.204
G1	2.4		2.7	0.094		0.106
Н	10		10.4	0.393		0.409
L2		16			0.630	
L3	28.6		30.6	1.126		1.204
L4	9.8		10.6	0.385		0.417
L6	15.9		16.4	0.626		0.645
L7	9		9.3	0.354		0.366
Ø	3		3.2	0.118		0.126

TO-220FP MECHANICAL DATA



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