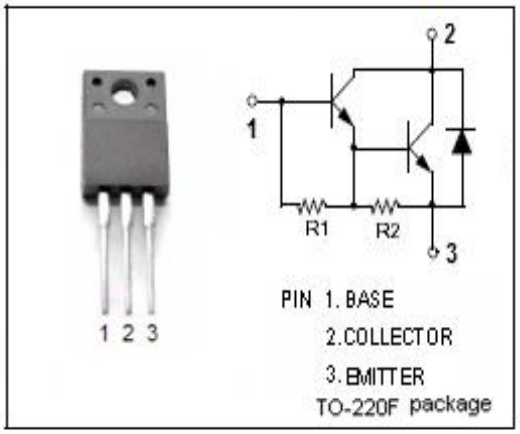
isc Silicon NPN Darlington Power Transistor BDW93CFP

DESCRIPTION

- With TO-220F packaging
- Very high DC current gain
- Monolithic darlington transistor with integrated antiparallel collector-emitter diode
- Complement to Type BDW94CFP
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

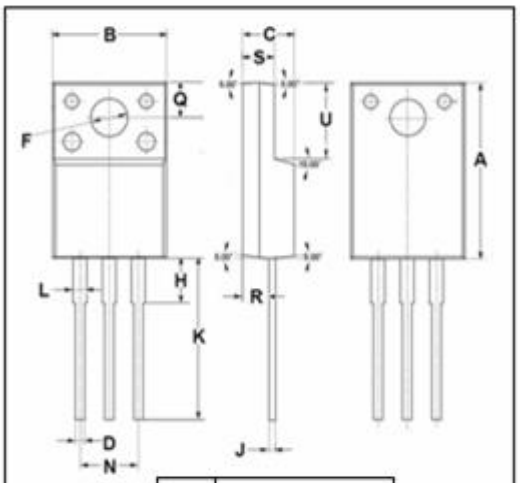
- AC-DC motor control
- Electronic ignition
- Alternator regulator

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	12	A
I_{CM}	Collector Current-Peak	15	A
I_B	Base Current- Continuous	0.2	A
P_C	Collector Power Dissipation	33	W
T_j	Max.Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	3.8	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	62.5	℃/W



DIM	mm MIN	MAX
A	14.95	15.05
B	10.00	10.10
C	4.40	4.60
D	0.75	0.90
F	3.10	3.30
H	3.70	3.90
J	0.50	0.70
K	13.4	13.6
L	1.10	1.30
N	5.00	5.20
Q	2.70	2.90
R	2.20	2.40
S	2.65	2.90
U	6.40	6.60

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 100mA, I_B= 0	100		V
$V_{CE(sat)1}$	Collector-Emitter Saturation Voltage	I_C= 5A ,I_B= 20mA		2.0	V
$V_{CE(sat)2}$	Collector-Emitter Saturation Voltage	I_C= 10A ,I_B= 100mA		3.0	V
$V_{BE(sat)1}$	Base-Emitter Saturation Voltage	I_C= 5A ,I_B= 20mA		2.5	V
$V_{BE(sat)2}$	Base-Emitter Saturation Voltage	I_C= 10A ,I_B= 100mA		4.0	V
I_{CBO}	Collector Cutoff Current	V_{CB}=100V, I_E= 0		100	μA
I_{CEO}	Collector Cutoff Current	V_{CE}= 100V, I_B= 0		1	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0		2	mA
h_{FE-1}	DC Current Gain	I_C= 3A ; V_{CE}= 3V	1000	20000	
h_{FE-2}	DC Current Gain	I_C= 5A ; V_{CE}= 3V	750	20000	
h_{FE-3}	DC Current Gain	I_C= 10A ; V_{CE}= 3V	100	20000	