

isc Silicon PNP Darlington Power Transistor

BDW94CFP

DESCRIPTION

- With TO-220F packaging
- Very high DC current gain
- Monolithic darlington transistor with integrated antiparallel collector-emitter diode
- Complement to Type BDW93CFP
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

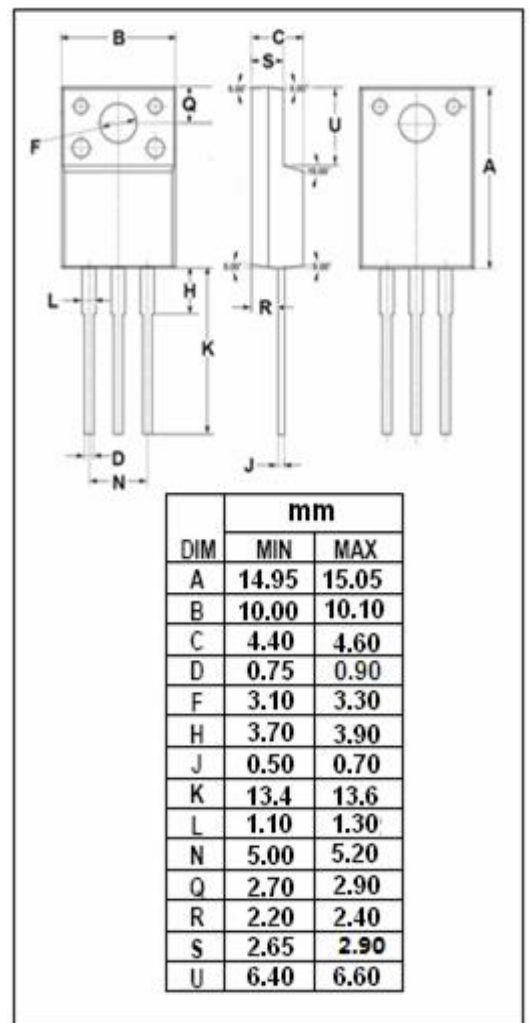
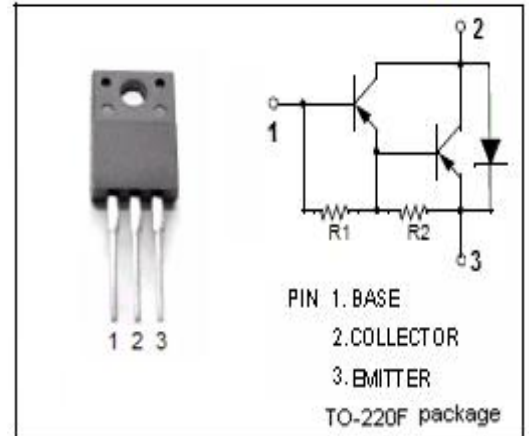
- AC-DC motor control
- Electronic ignition
- Alternator regulator

ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$)

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	-0.2	A
P_C	Collector Power Dissipation	33	W
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

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



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

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

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