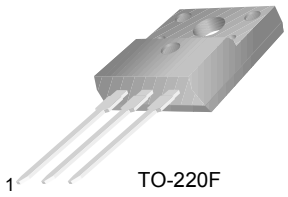
FAIRCHILD SEMICONDUCTOR®

July 2005

BDW94CF
PNP Epitaxial Silicon Transistor

Power Linear and Switching Application

- Power Darlington TR
- Complement to BDW93CF Respectively



TO-220F

1.Base 2.Collector 3.Emitter

Absolute Maximum Ratings T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	-100	V
V_{CEO}	Collector-Emitter Voltage	-100	V
I_C	Collector Current (DC)	-12	A
I_{CP}	Collector Current (Pulse) *	-15	A
I_B	Base Current	-0.2	A
P_C	Collector Dissipation (T_C = 25°C)	30	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-65 ~ 150	°C

Electrical Characteristics T_C = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max	Units
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage	I_C -100mA, I_B = 0	-100			V
I_{CBO}	Collector Cut-off Current	V_{CB} = -100V, I_E = 0			-100	μA
I_{CEO}	Collector Cut-off Current	VV_{CE} = -100V, I_B = 0			-1	mA
I_{EBO}	Emitter Cut-off Current	V_{EB} = -5V, I_C = 0			-2	mA
h_{FE}	DC Current Gain *	V_{CE} = -3V, I_C = -3A V_{CE} = -3V, I_C = -5A V_{CE} = -3V, I_C = -10A	1000 750 100		20000	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage *	I_C = -5A, I_B = -20mA I_C = -10A, I_B = -100mA			-2 -3	V V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage *	I_C = -5A, I_B = -20mA I_C = -10A, I_B = -100mA			-2.5 -4	V V
V_F	Parallel Diode Forward Voltage *	I_F = -5A I_F = -10A		-1.3 -1.8	-2 -4	V V

* Pulse Test: PW = 300μs, Duty Cycle = 1.5% Pulsed

Package Marking and Ordering Information

Device Marking	Device	Package	Reel Size	Tape Width	Quantity
BDW94CF	BDW94CF	TO-220F	-	-	50

Typical Performance Characteristics

Figure 1. DC Current Gain

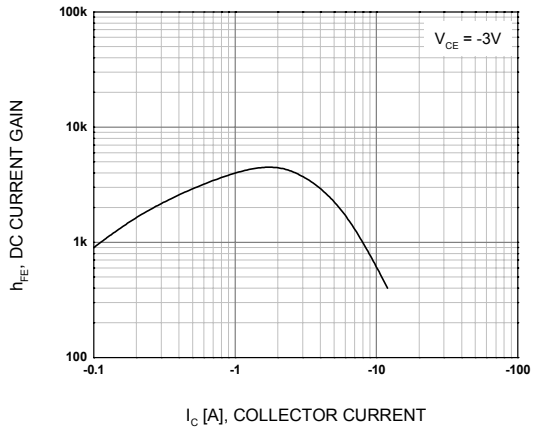


Figure 2. Collector-Emitter Saturation Voltage

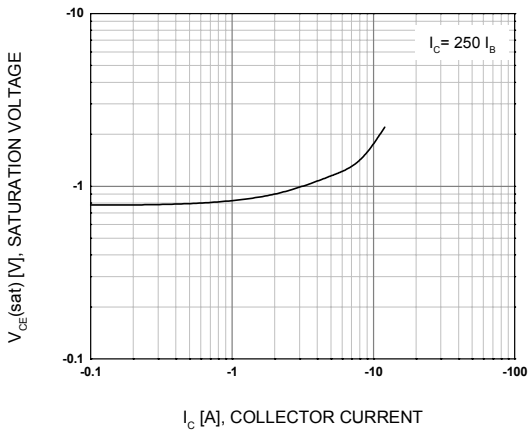


Figure 3. Base-Emitter On Voltage

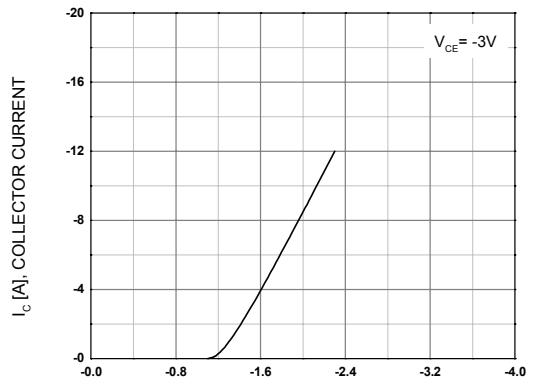
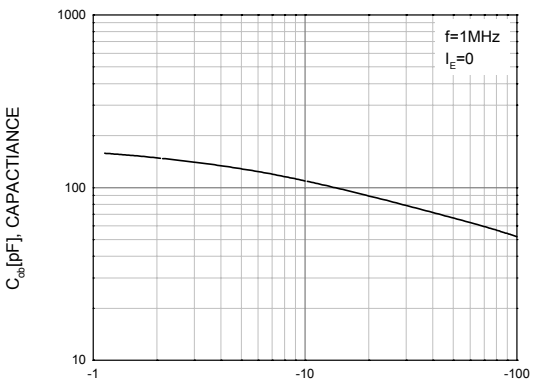
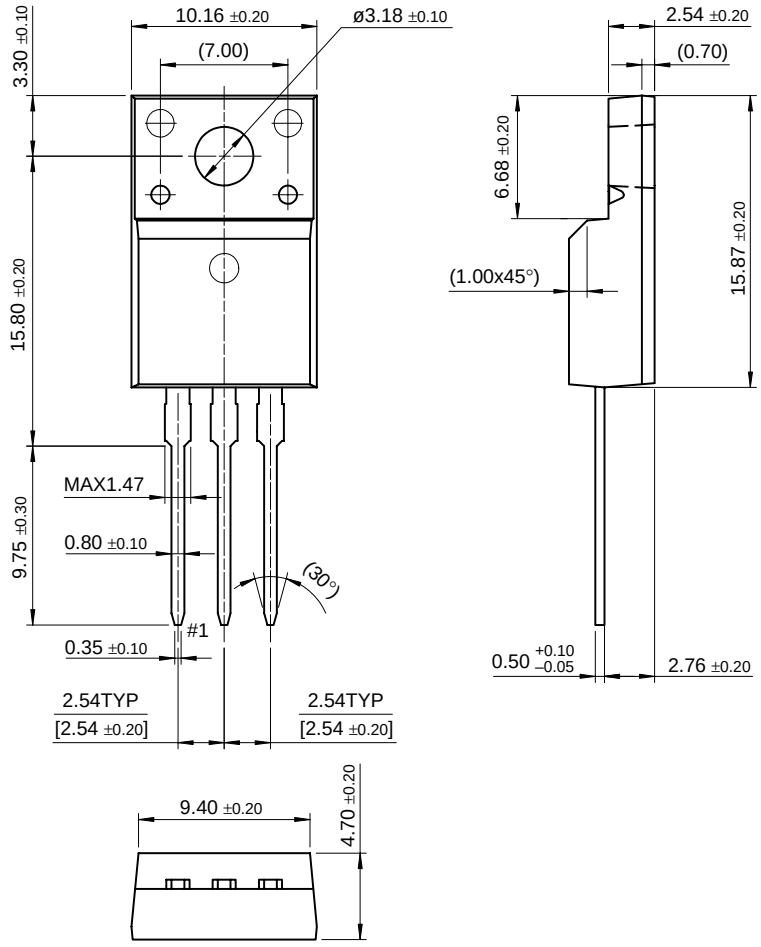


Figure 4. Output Capacitance



Mechanical Dimensions

TO-220F



Dimensions in Millimeters

TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx™
ActiveArray™
Bottomless™
Build it Now™
CoolFET™
CROSSVOLT™
DOME™
EcoSPARK™
E^2CMOS™
EnSigna™
FACT™
FACT Quiet Series™
FAST®
FASTr™
FPS™
FRFET™
GlobalOptoisolator™
GTO™
HiSeC™
I^2C™
i-Lo™
ImpliedDisconnect™
IntelliMAX™
ISOPLANAR™
LittleFET™
MICROCOUPLER™
MicroFET™
MicroPak™
MICROWIRE™
MSX™
MSXPro™
OCX™
OCXPro™
OPTOLOGIC®
OPTOPLANAR™
PACMAN™
POP™
Power247™
PowerEdge™
PowerSaver™
PowerTrench®
QFET®
QS™
QT Optoelectronics™
Quiet Series™
RapidConfigure™
RapidConnect™
µSerDes™
SILENT SWITCHER®
SMART START™
SPM™
Stealth™
SuperFET™
SuperSOT™-3
SuperSOT™-6
SuperSOT™-8
SyncFET™
TinyLogic®
TINYOPTO™
TruTranslation™
UHC™
UltraFET®
UniFET™
VCX™
Wire™

Across the board. Around the world.™
The Power Franchise®
Programmable Active Droop™

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:
1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

Rev. I16