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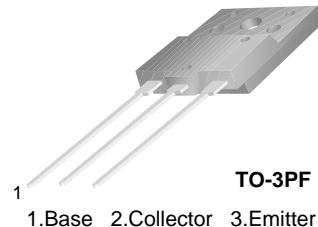
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October 2009

# FJAF4310

## NPN Epitaxial Silicon Transistor



### Features

- Audio Power Amplifier
- High Current Capability :  $I_C=10A$
- High Power Dissipation
- Wide S.O.A
- Complement to FJAF4210

**Absolute Maximum Ratings\***  $T_A=25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	200	V
$V_{CEO}$	Collector-Emitter Voltage	140	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current (DC)	10	A
$I_B$	Base Current (DC)	1.5	A
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	80	W
$R_{\theta JC}$	Junction to Case	1.48	°C/W
$T_J$	Junction Temperature	150	°C
$T_{STG}$	Storage Temperature	- 55 ~ 150	°C

**Electrical Characteristics**  $T_A=25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C=5\text{mA}$ , $I_E=0$	200			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C=50\text{mA}$ , $R_{BE}=\infty$	140			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E=5\text{mA}$ , $I_C=0$	6			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB}=200\text{V}$ , $I_E=0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB}=6\text{V}$ , $I_C=0$			10	$\mu\text{A}$
$h_{FE}$	* DC Current Gain	$V_{CE}=4\text{V}$ , $I_C=3\text{A}$	50		180	
$V_{CE(\text{sat})}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}$ , $I_B=0.5\text{A}$			0.5	V
$C_{ob}$	Output Capacitance	$V_{CB}=10\text{V}$ , $f=1\text{MHz}$		250		pF
$f_T$	Current Gain Bandwidth Product	$V_{CE}=5\text{V}$ , $I_C=1\text{A}$		30		MHz

\* Pulse Test : PW=20 $\mu\text{s}$

### $h_{FE}$ Classification

Classification	R	O	Y
$h_{FE}$	50 ~ 100	70 ~ 140	90 ~ 180

## Typical Performance Characteristics

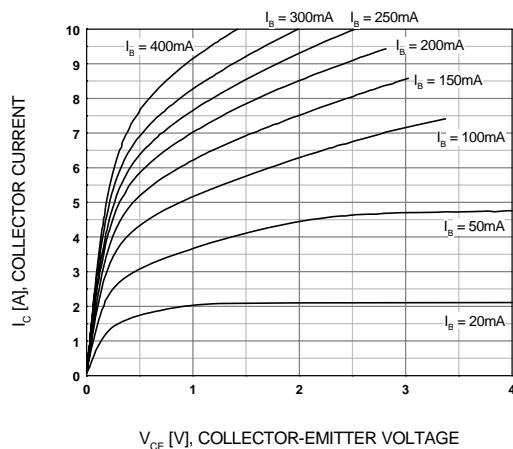


Figure 1. Static Characteristic

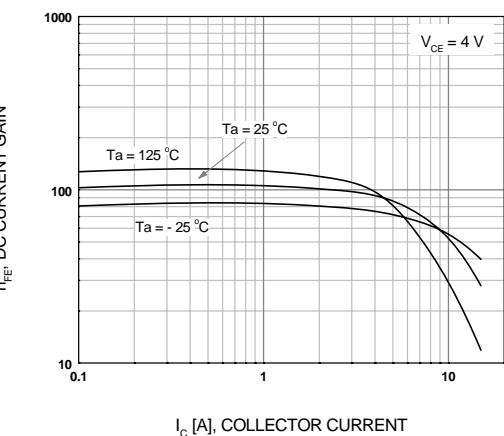


Figure 2. DC current Gain

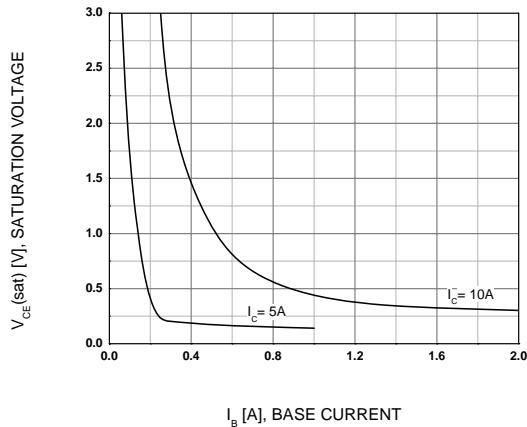


Figure 3.  $V_{CE(sat)}$  vs.  $I_B$  Characteristics

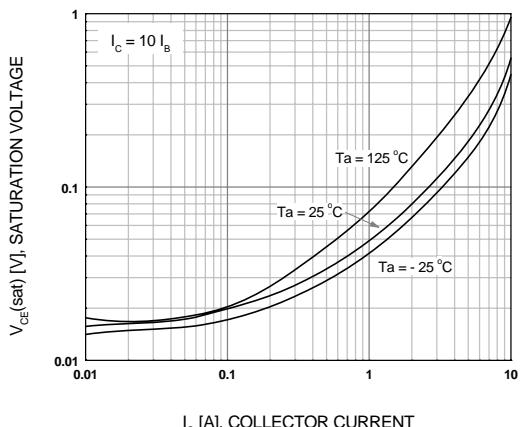


Figure 4. Collector-Emitter Saturation Voltage

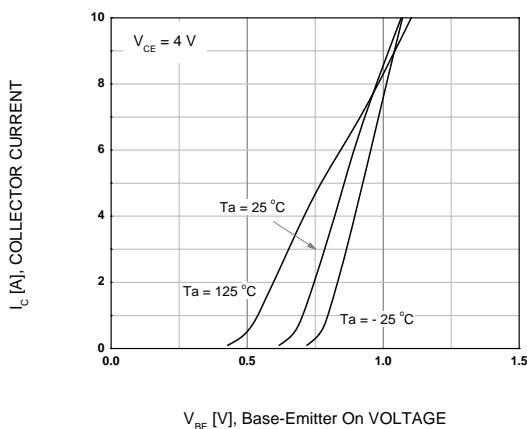


Figure 5. Base-Emitter On Voltage

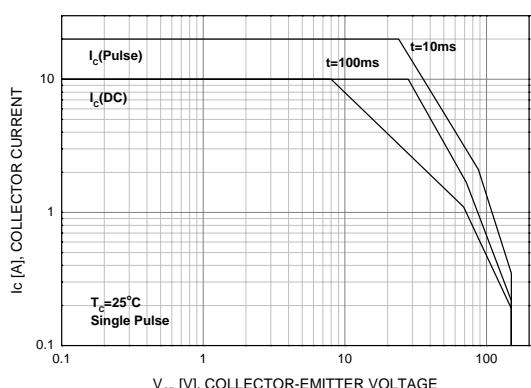
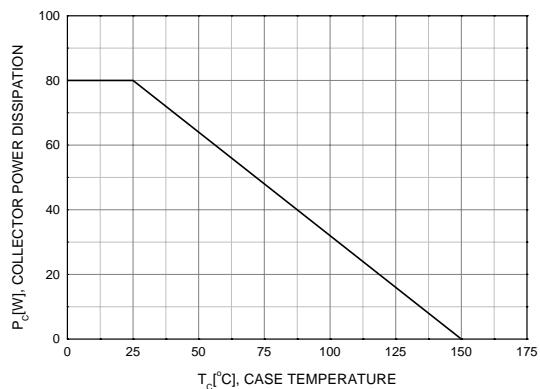


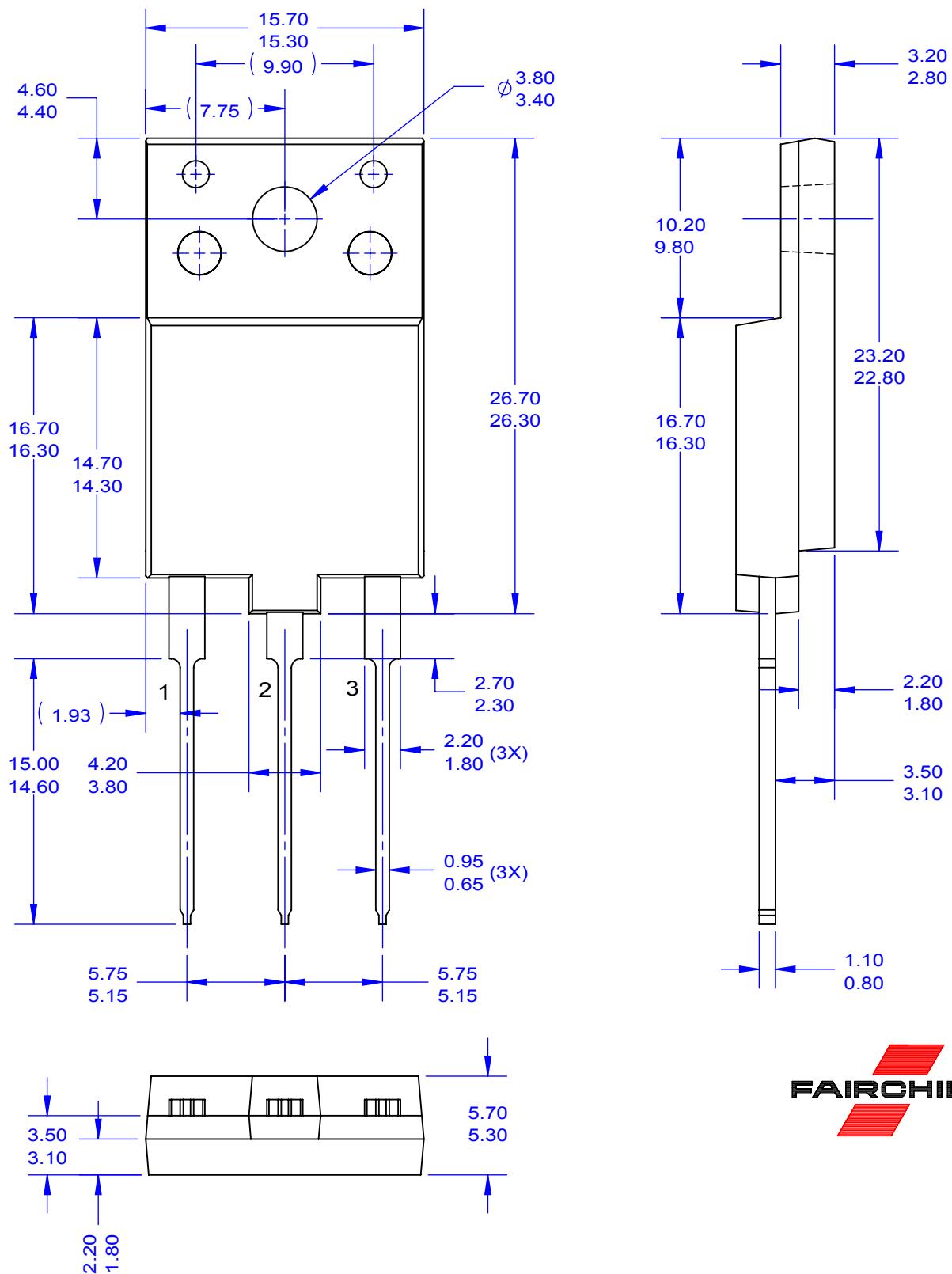
Figure 6. Forward Bias Safe Operating Area

## Typical Performance Characteristics

(Continued)



**Figure 7. Power Derating**



**NOTES:**

- A. THIS PACKAGE CONFORMS TO SC94 JEITA PACKAGING STANDARD.
- B. ALL DIMENSIONS ARE IN MILLIMETERS.
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- D. PIN 2 CONNECTS TO DAP.
- E. DRAWING FILE NAME: TO3PFA03REV2

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