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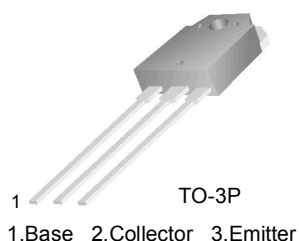


October 2008

FJA4310

NPN Epitaxial Silicon Transistor

- Audio Power Amplifier
- High Current Capability : $I_C=10A$
- High Power Dissipation
- Wide S.O.A
- Complement to FJA4210



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

Symbol	Parameter	Ratings	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 ($T_C=25^\circ\text{C}$)	100	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

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	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB}=6\text{V}, I_C=0$			10	μA
h_{FE}	* DC Current Gain	$V_{CE}=4\text{V}, I_C=3\text{A}$	50		180	
$V_{CE(sat)}$	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: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

h_{FE} Classification

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

Typical Characteristics

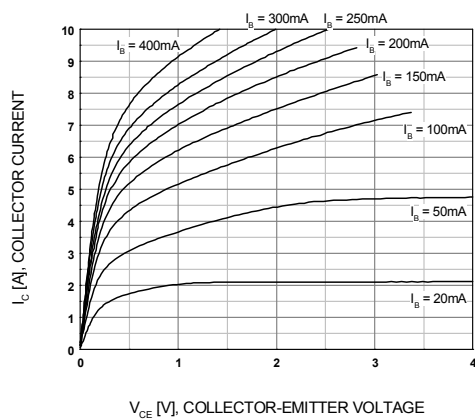


Figure 1. Static Characteristic

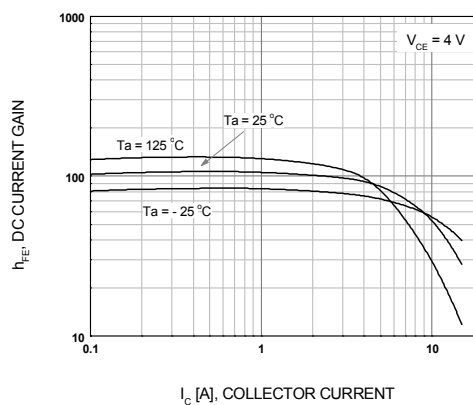


Figure 2. DC current Gain

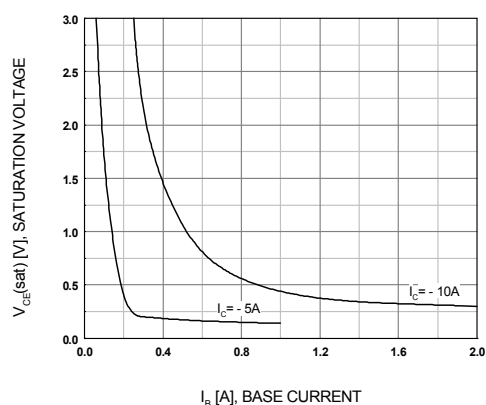


Figure 3. $V_{CE(sat)}$ vs. I_B Characteristics

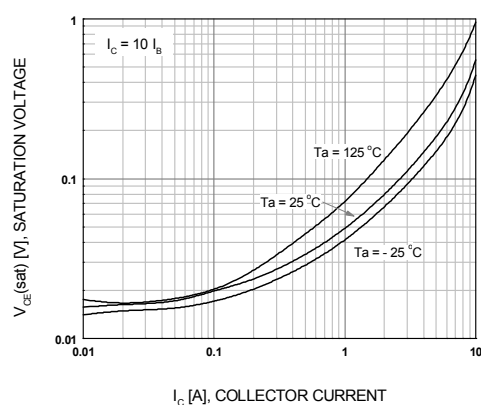


Figure 4. Collector-Emitter Saturation Voltage

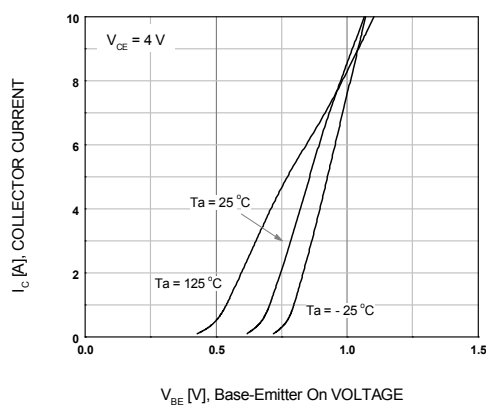


Figure 5. Base-Emitter On Voltage

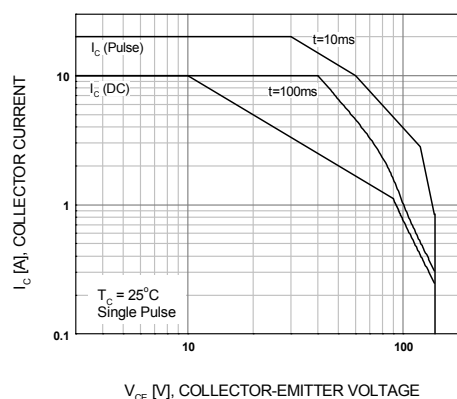


Figure 6. Forward Bias Safe Operating Area

Typical Characteristics (Continued)

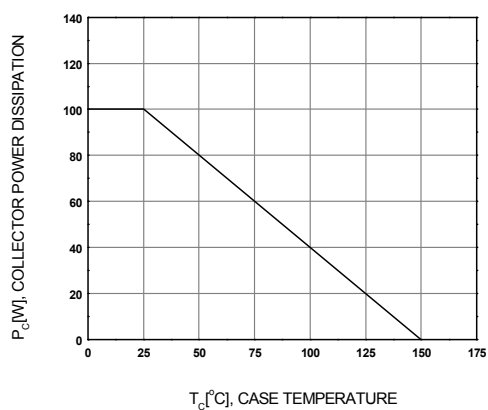
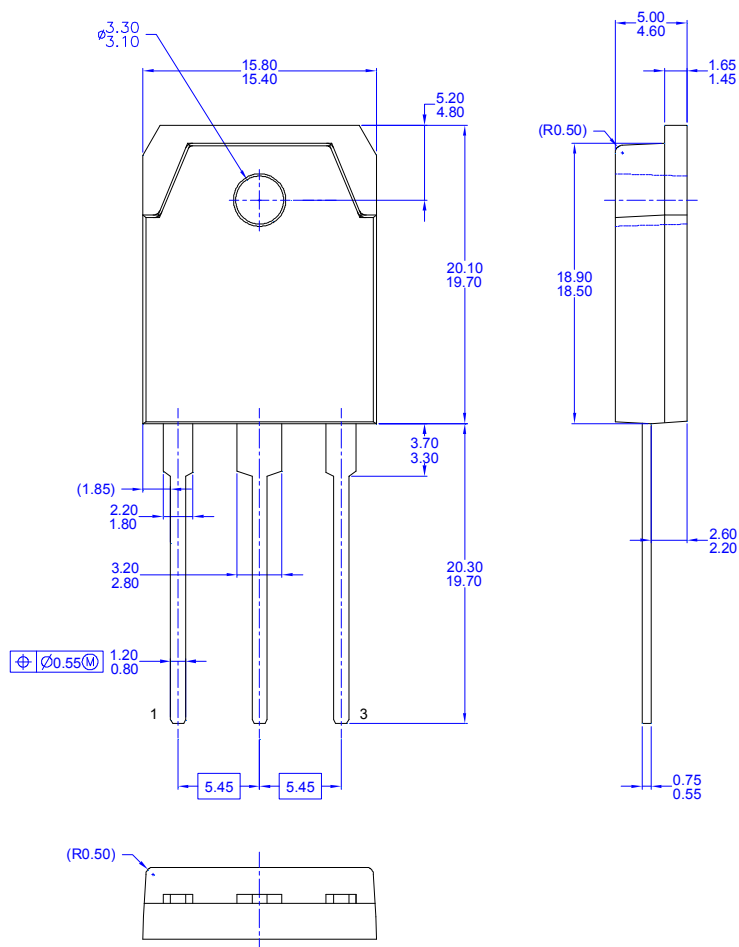


Figure 7. Power Derating

Package Dimension (TO-3P)



NOTES:

- THIS PACKAGE CONFORMS TO EIAJ SC-65 PACKAGING STANDARD.
- ALL DIMENSIONS ARE IN MILLIMETERS.
- DIMENSIONING AND TOLERANCING PER ASME14.5 1973.
- DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.
- DRAWING FILE NAME: TO3P03AREV2.



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