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November 2008

# FJP1943

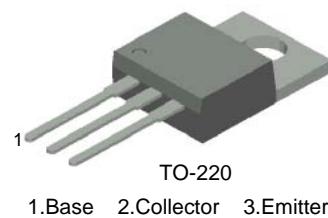
## PNP Epitaxial Silicon Transistor

### Applications

- High-Fidelity Audio Output Amplifier
- General Purpose Power Amplifier

### Features

- High Current Capability:  $I_C = -15A$ .
- High Power Dissipation : 80watts.
- High Frequency : 30MHz.
- High Voltage :  $V_{CEO} = -230V$
- Wide S.O.A for reliable operation.
- Excellent Gain Linearity for low THD.
- Complement to FJP5200
- Full thermal and electrical Spice models are available.
- Same transistor is also available in:
  - TO264 package, 2SA1943/FJL4215 : 150 watts
  - TO3P package, 2SA1962/FJA4213 : 130 watts
  - TO220F package, FJP1943 : 50 watts



### Absolute Maximum Ratings\* $T_a = 25^\circ C$ unless otherwise noted

Symbol	Parameter	Ratings	Units
$BV_{CBO}$	Collector-Base Voltage	-230	V
$BV_{CEO}$	Collector-Emitter Voltage	-230	V
$BV_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	-15	A
$I_B$	Base Current	-1.5	A
$P_D$	Total Device Dissipation( $T_C=25^\circ C$ ) Derate above $25^\circ C$	80 0.64	W W/ $^\circ C$
$T_J, T_{STG}$	Junction and Storage Temperature	-50 ~ +150	$^\circ C$

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

### Thermal Characteristics\* $T_a=25^\circ C$ unless otherwise noted

Symbol	Parameter	Ratings	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	1.25	$^\circ C/W$

\* Device mounted on minimum pad size

### $h_{FE}$ Classification

Classification	R	O
$h_{FE1}$	55 ~ 110	80 ~ 160

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$\text{BV}_{\text{CBO}}$	Collector-Base Breakdown Voltage	$I_C=-5\text{mA}, I_E=0$	-230			V
$\text{BV}_{\text{CEO}}$	Collector-Emitter Breakdown Voltage	$I_C=-10\text{mA}, R_{BE}=\infty$	-230			V
$\text{BV}_{\text{EBO}}$	Emitter-Base Breakdown Voltage	$I_E=-5\text{mA}, I_C=0$	-5			V
$I_{\text{CBO}}$	Collector Cut-off Current	$V_{CB}=-230\text{V}, I_E=0$			-5.0	$\mu\text{A}$
$I_{\text{EBO}}$	Emitter Cut-off Current	$V_{EB}=-5\text{V}, I_C=0$			-5.0	$\mu\text{A}$
$h_{\text{FE}1}$	DC Current Gain	$V_{CE}=-5\text{V}, I_C=-1\text{A}$	55		160	
$h_{\text{FE}2}$	DC Current Gain	$V_{CE}=-5\text{V}, I_C=-7\text{A}$	35	60		
$V_{\text{CE}(\text{sat})}$	Collector-Emitter Saturation Voltage	$I_C=-8\text{A}, I_B=-0.8\text{A}$		-0.4	-3.0	V
$V_{\text{BE}(\text{on})}$	Base-Emitter On Voltage	$V_{CE}=-5\text{V}, I_C=-7\text{A}$		-1.0	-1.5	V
$f_T$	Current Gain Bandwidth Product	$V_{CE}=-5\text{V}, I_C=-1\text{A}$		30		MHz
$C_{\text{ob}}$	Output Capacitance	$V_{CB}=-10\text{V}, f=1\text{MHz}$		360		pF

\* Pulse Test: Pulse Width=20 $\mu\text{s}$ , Duty Cycle $\leq 2\%$

**Ordering Information**

Part Number	Marking	Package	Packing Method	Remarks
FJP1943RTU	J1943R	TO-220	TUBE	hFE1 R grade
FJP1943OTU	J1943O	TO-220	TUBE	hFE1 O grade

## Typical Characteristics

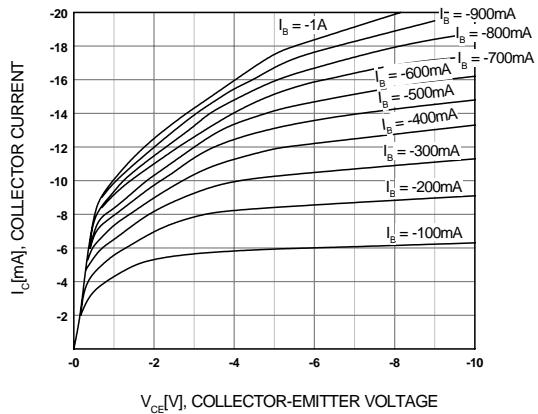


Figure 1. Static Characteristic

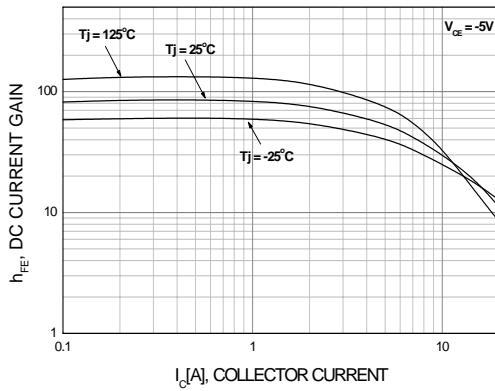


Figure 2. DC current Gain ( R Grade )

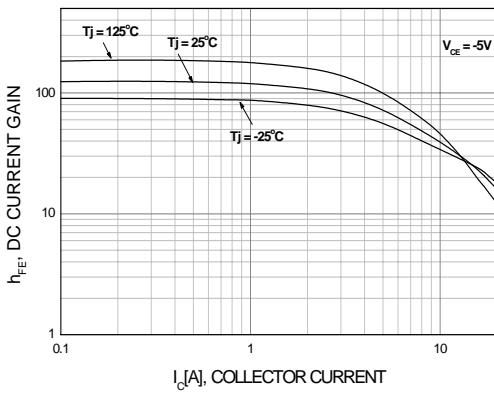


Figure 3. DC current Gain ( O Grade )

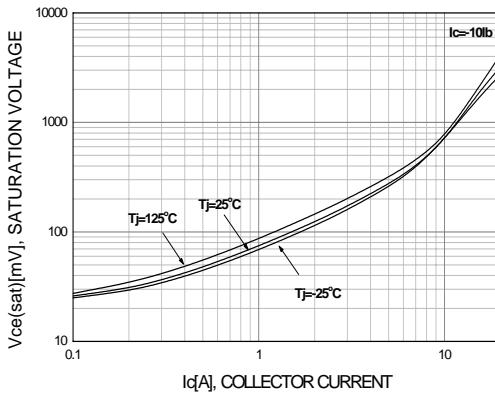


Figure 4. Collector-Emitter Saturation Voltage

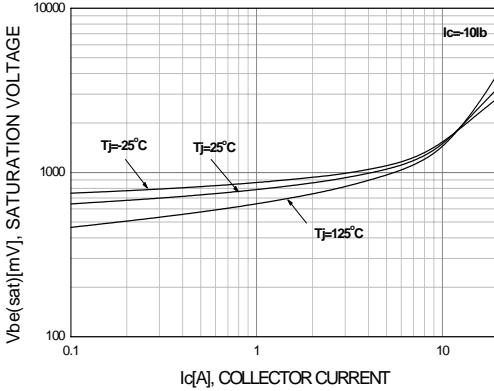


Figure 5. Base-Emitter Saturation Voltage

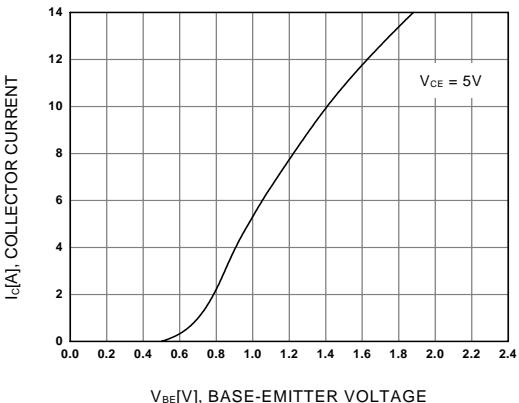


Figure 6. Base-Emitter On Voltage

## Typical Characteristics

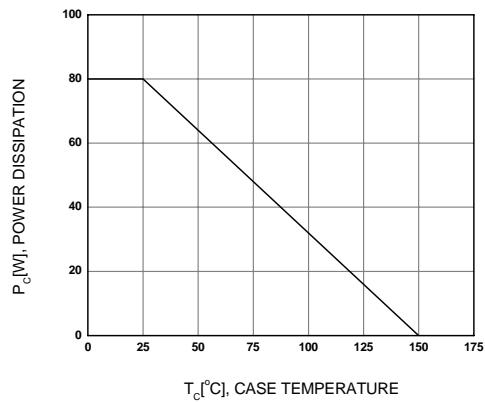


Figure 7. Power Derating

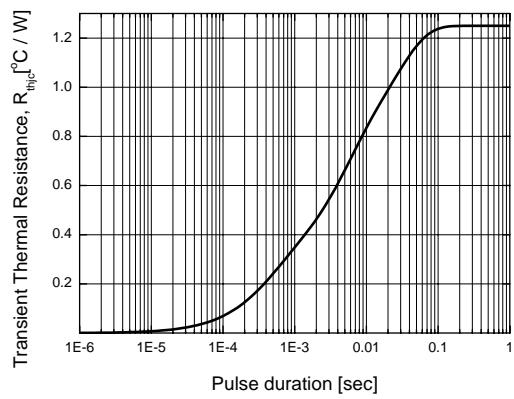
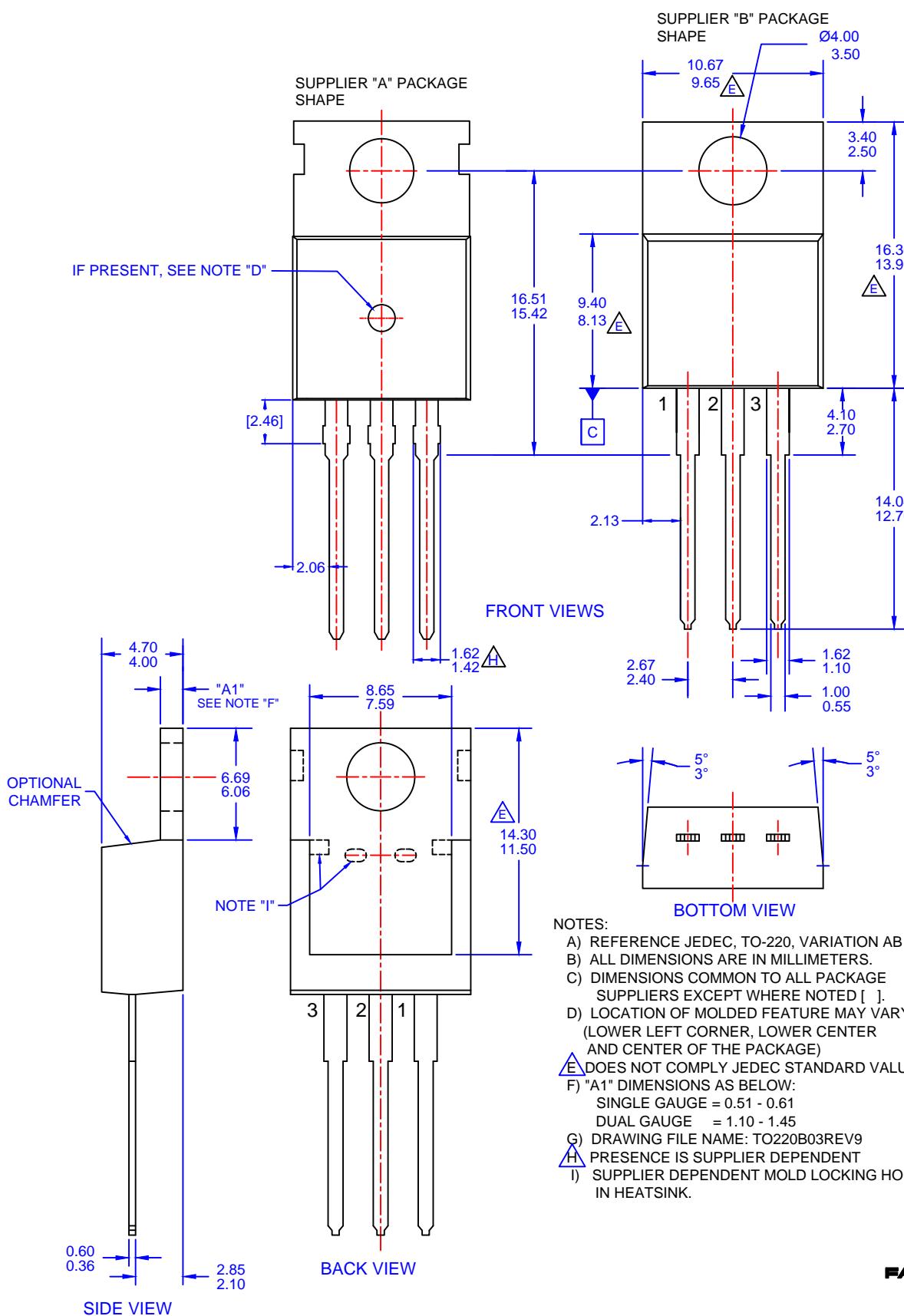


Figure 8. Thermal Resistance



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