



March 2008

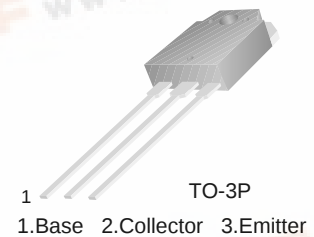
2SA1962/FJA4213 PNP Epitaxial Silicon Transistor

Applications

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

Features

- High Current Capability: $I_C = -15A$
- High Power Dissipation : 130watts
- High Frequency : 30MHz.
- High Voltage : $V_{CEO} = -230V$
- Wide S.O.A for reliable operation.
- Excellent Gain Linearity for low THD.
- Complement to 2SC5242/FJA4313.
- Thermal and electrical Spice models are available.
- Same transistor is also available in:
 - TO264 package, 2SA1943/FJL4215 : 150 watts
 - TO220 package, FJP1943 : 80 watts
 - TO220F package, FJPF1943 : 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 $25^\circ C$	130 1.04	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	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	0.96	$^\circ C/W$

* 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
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C=-5\text{mA}$, $I_E=0$	-230			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C=-10\text{mA}$, $R_{BE}=\infty$	-230			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E=-5\text{mA}$, $I_C=0$	-5			V
I_{CBO}	Collector Cut-off Current	$V_{CB}=-230\text{V}$, $I_E=0$			-5.0	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB}=-5\text{V}$, $I_C=0$			-5.0	μA
h_{FE1}	DC Current Gain	$V_{CE}=-5\text{V}$, $I_C=-1\text{A}$	55		160	
h_{FE2}	DC Current Gain	$V_{CE}=-5\text{V}$, $I_C=-7\text{A}$	35	60		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=-8\text{A}$, $I_B=-0.8\text{A}$		-0.4	-3.0	V
$V_{BE(on)}$	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_{ob}	Output Capacitance	$V_{CB}=-10\text{V}$, $f=1\text{MHz}$		360		pF

* Pulse Test: Pulse Width=20 μs , Duty Cycle $\leq 2\%$ **Ordering Information**

Part Number	Marking	Package	Packing Method	Remarks
2SA1962RTU	A1962R	TO-3P	TUBE	hFE1 R grade
2SA1962OTU	A1962O	TO-3P	TUBE	hFE1 O grade
FJA4213RTU	J4213R	TO-3P	TUBE	hFE1 R grade
FJA4213OTU	J4213O	TO-3P	TUBE	hFE1 O grade

Typical Characteristics

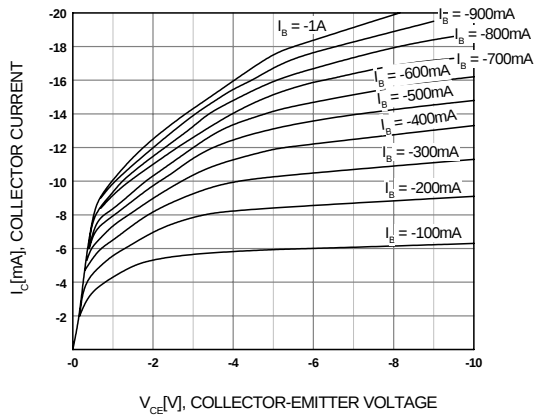


Figure 1. Static Characteristic

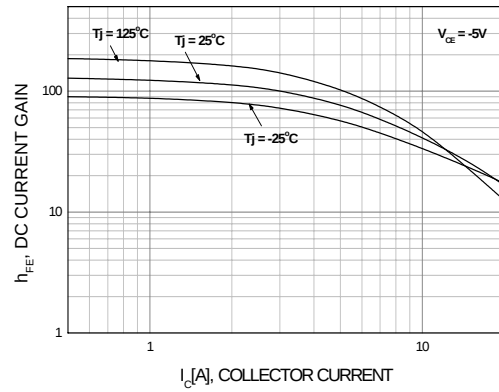


Figure 2. DC current Gain

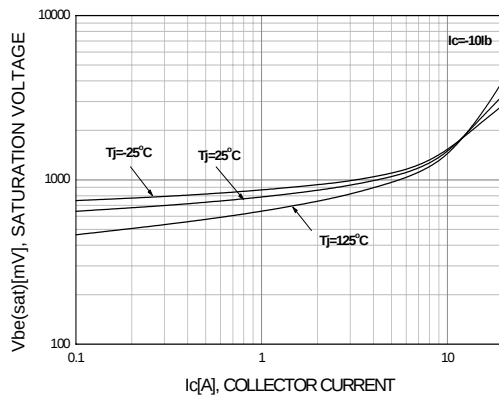


Figure 3. Base-Emitter Saturation Voltage

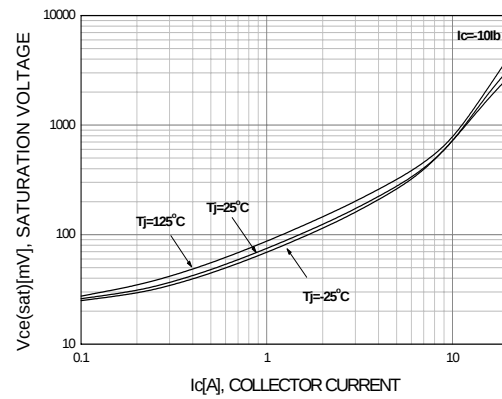


Figure 4. Collector-Emitter Saturation Voltage

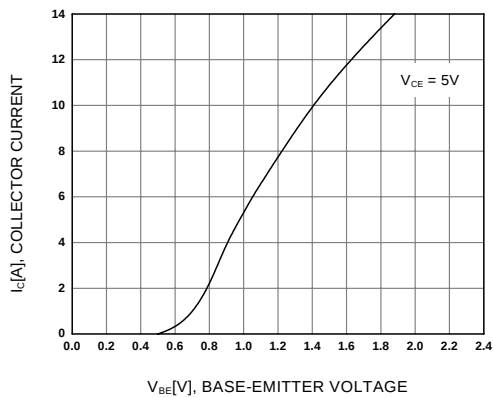


Figure 5. Base-Emitter On Voltage

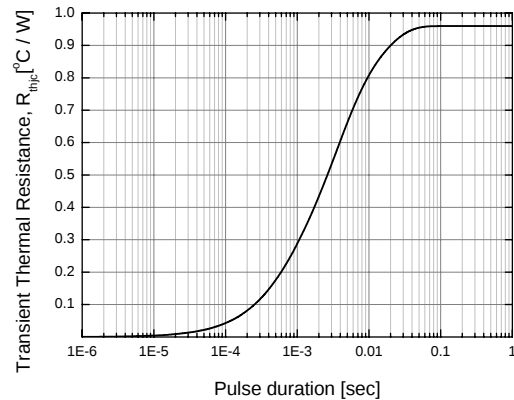


Figure 6. Thermal Resistance

Typical Characteristics

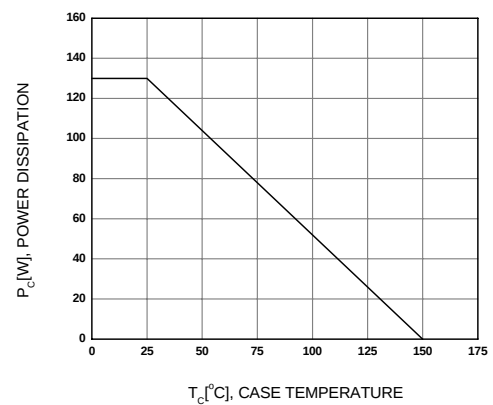


Figure 7. Power Derating

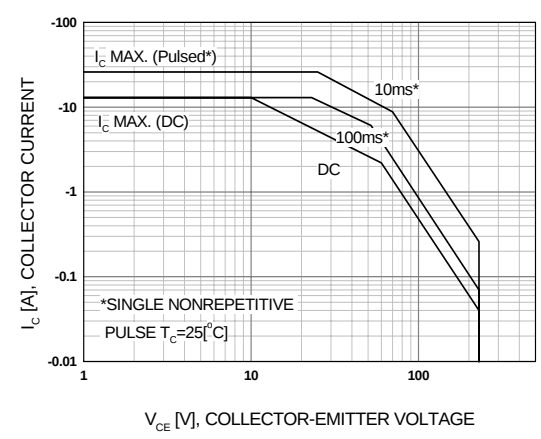
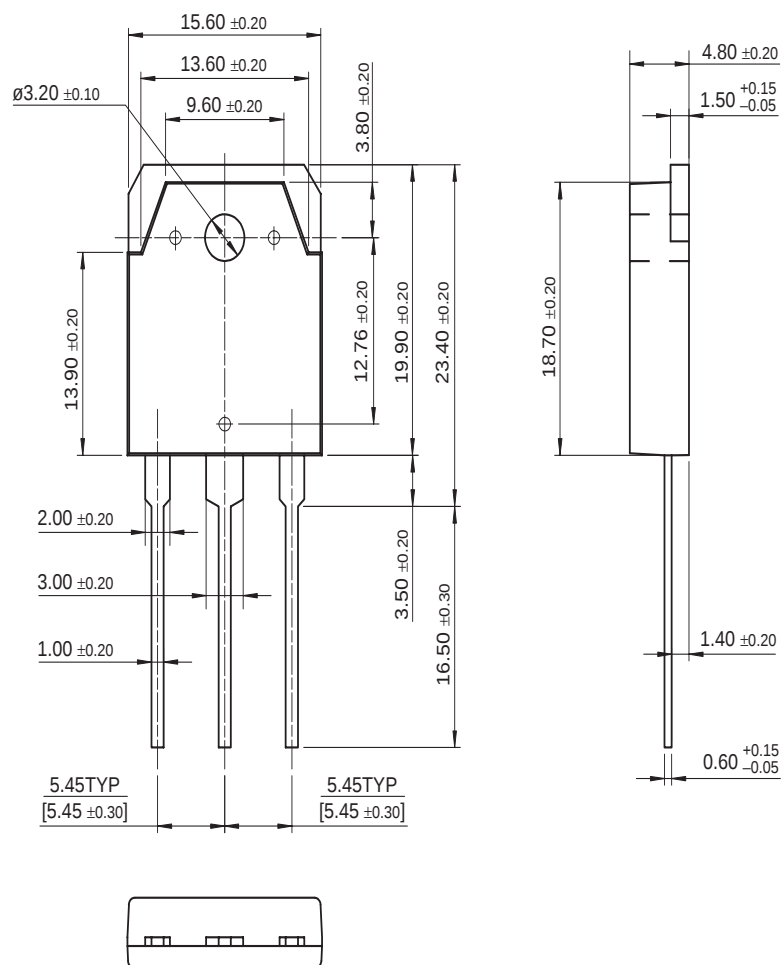


Figure 8. Safe Operating Area

Package Dimensions

TO-3P



Dimensions in Millimeters



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