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FJPF5200

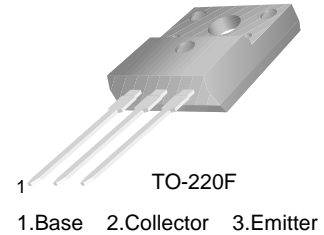
NPN Epitaxial Silicon Transistor

Applications

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

Features

- High Current Capability: $I_C = 17A$.
- High Power Dissipation : 50watts.
- High Frequency : 30MHz.
- High Voltage : $V_{CEO}=250V$
- Wide S.O.A for reliable operation.
- Excellent Gain Linearity for low THD.
- Complement to FJPF1943
- Thermal and electrical Spice models are available.
- Same transistor is also available in:
 - TO264 package, 2SC5200/FJL4315 : 150 watts
 - TO3P package, 2SC5242/FJA4313 : 130 watts
 - TO220 package, FJP5200 : 80 watts



Absolute Maximum Ratings* T_a = 25°C unless otherwise noted

Symbol	Parameter	Ratings	Units
BV_{CBO}	Collector-Base Voltage	250	V
BV_{CEO}	Collector-Emitter Voltage	250	V
BV_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current(DC)	17	A
I_B	Base Current	1.5	A
P_D	Total Device Dissipation($T_C=25^\circ C$) Derate above 25°C	50 0.4	W W/°C
T_J, T_{STG}	Junction and Storage Temperature	- 50 ~ +150	°C

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

Thermal Characteristics* T_a=25°C unless otherwise noted

Symbol	Parameter	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	2.5	°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	$I_C=5\text{mA}, I_E=0$	250			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}, R_{BE}=\infty$	250			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	$V_{CB}=10\text{V}, f=1\text{MHz}$		200		pF

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

Part Number	Marking	Package	Packing Method	Remarks
FJPF5200RTU	J5200R	TO-220F	TUBE	hFE1 R grade
FJPF5200OTU	J5200O	TO-220F	TUBE	hFE1 O grade

Typical Characteristics

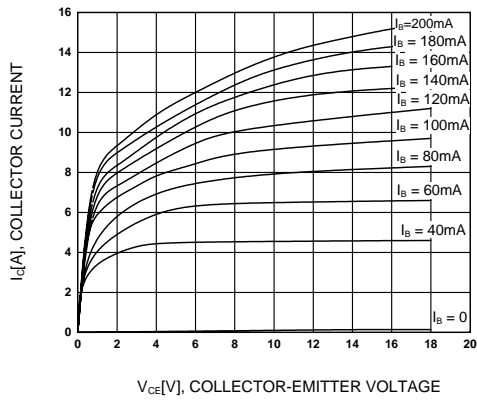


Figure 1. Static Characteristic

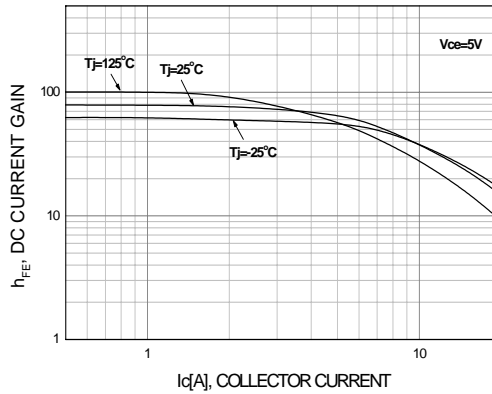


Figure 2. DC current Gain (R grade)

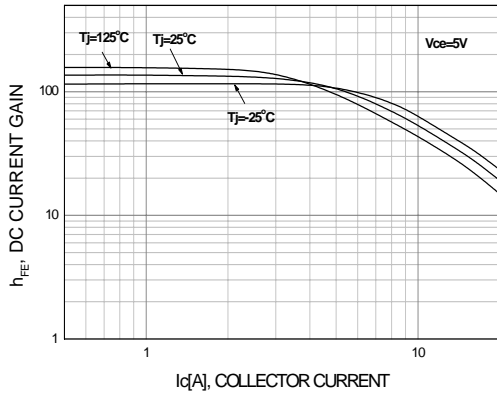


Figure 3. DC current Gain (O grade)

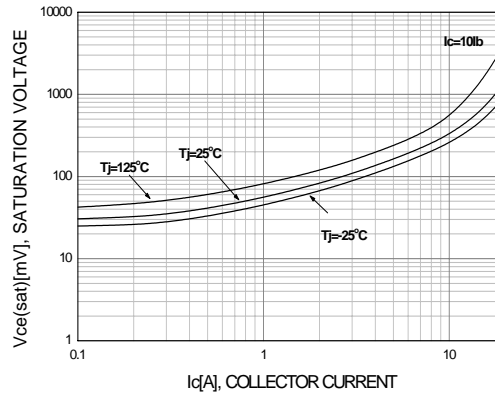


Figure 4. Collector-Emitter Saturation Voltage

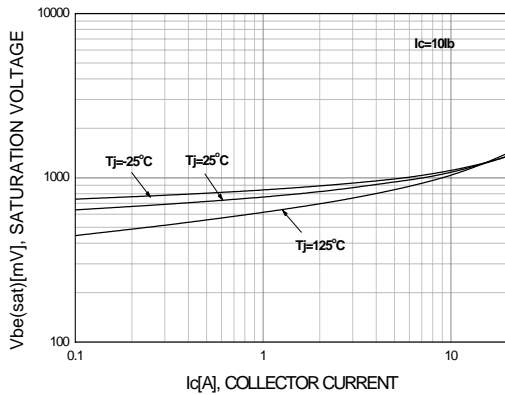


Figure 5. Base-Emitter Saturation Voltage

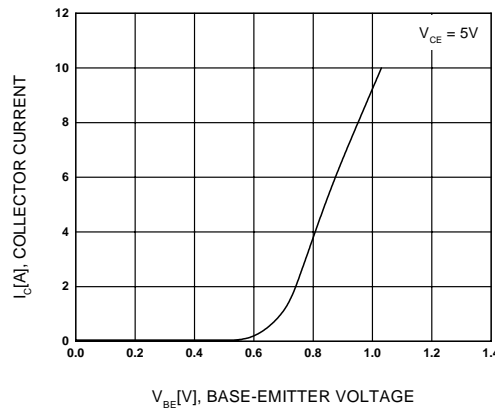


Figure 6. Base-Emitter On Voltage

Typical Characteristics

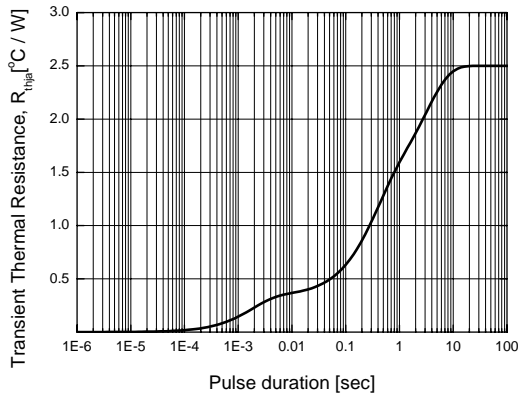


Figure 7. Thermal Resistance

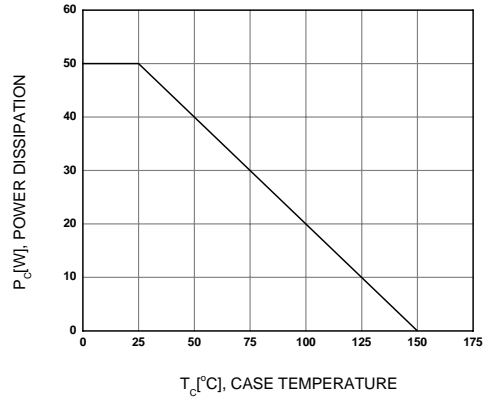





Figure 8. Power Derating



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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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