

2SC5200/FJL4315

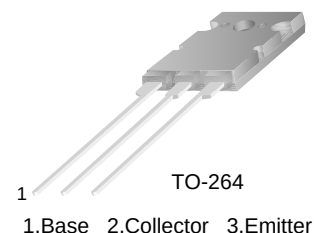
NPN Epitaxial Silicon Transistor

Applications

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

Features

- High Current Capability: $I_C = 17A$.
- High Power Dissipation : 150watts.
- High Frequency : 30MHz.
- High Voltage : $V_{CEO}=250V$
- Wide S.O.A for reliable operation.
- Excellent Gain Linearity for low THD.
- Complement to 2SA1943/FJL4215.
- Thermal and electrical Spice models are available.
- Same transistor is also available in:
 - TO3P package, 2SC5242/FJA4313 : 130 watts
 - TO220 package, FJP5200 : 80 watts
 - TO220F package, FJPF5200 : 50 watts



Absolute Maximum Ratings* $T_a = 25^\circ C$ 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 $25^\circ C$	150 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	0.83	$^\circ C/W$

* Device mounted on minimum pad size

h_{FE} Classification

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

Electrical Characteristics* T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV _{CBO}	Collector-Base Breakdown Voltage	I _C =5mA, I _E =0	250			V
BV _{CEO}	Collector-Emitter Breakdown Voltage	I _C =10mA, R _{BE} =∞	250			V
BV _{EBO}	Emitter-Base Breakdown Voltage	I _E =5mA, I _C =0	5			V
I _{CBO}	Collector Cut-off Current	V _{CB} =230V, I _E =0			5.0	μA
I _{EBO}	Emitter Cut-off Current	V _{EB} =5V, I _C =0			5.0	μA
h _{FE1}	DC Current Gain	V _{CE} =5V, I _C =1A	55		160	
h _{FE2}	DC Current Gain	V _{CE} =5V, I _C =7A	35	60		
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C =8A, I _B =0.8A		0.4	3.0	V
V _{BE(on)}	Base-Emitter On Voltage	V _{CE} =5V, I _C =7A		1.0	1.5	V
f _T	Current Gain Bandwidth Product	V _{CE} =5V, I _C =1A		30		MHz
C _{ob}	Output Capacitance	V _{CB} =10V, f=1MHz		200		pF

* Pulse Test: Pulse Width=20μs, Duty Cycle≤2%

Ordering Information

Part Number	Marking	Package	Packing Method	Remarks
2SC5200RTU	C5200R	TO-264	TUBE	hFE1 R grade
2SC5200OTU	C5200O	TO-264	TUBE	hFE1 O grade
FJL4315RTU	J4315R	TO-264	TUBE	hFE1 R grade
FJL4315OTU	J4315O	TO-264	TUBE	hFE1 O grade

Typical Characteristics

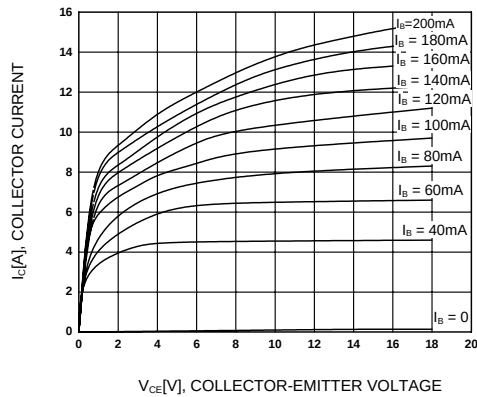


Figure 1. Static Characteristic

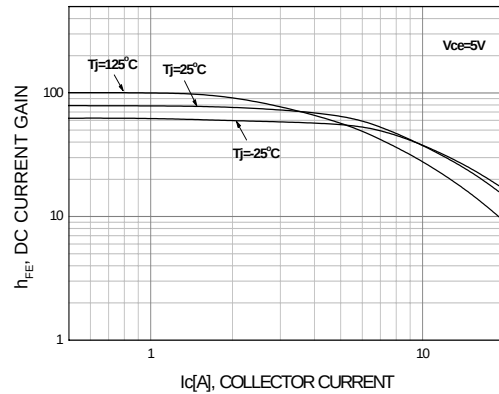


Figure 2. DC current Gain (R grade)

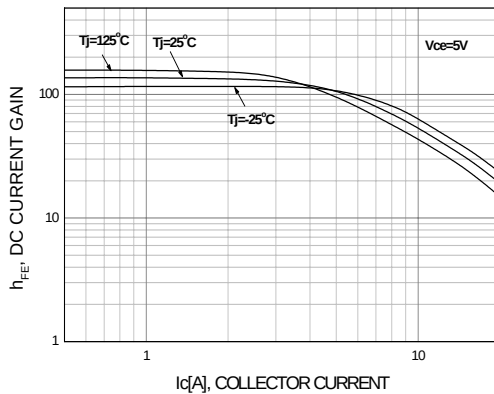


Figure 3. DC current Gain (O grade)

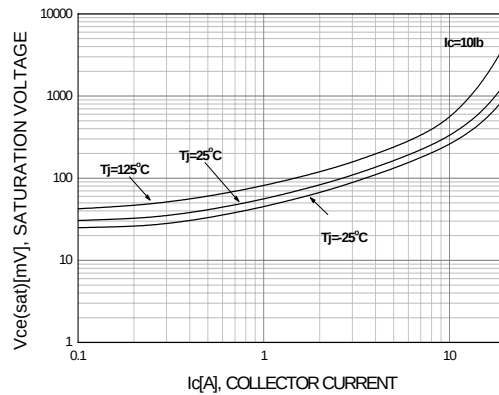


Figure 4. Collector-Emitter Saturation Voltage

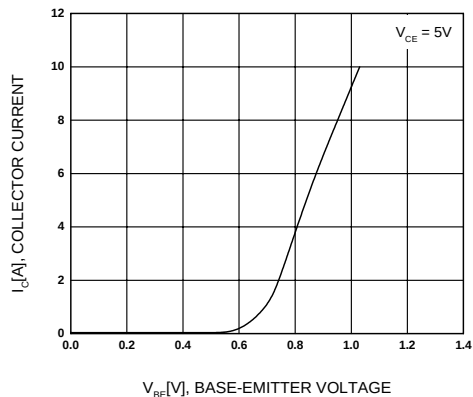


Figure 5. Base-Emitter On Voltage

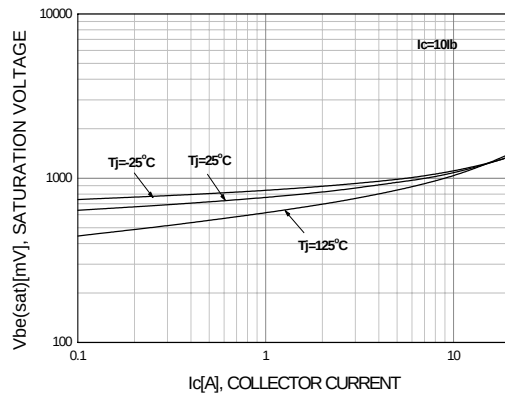


Figure 6. Base-Emitter Saturation Voltage

Typical Characteristics

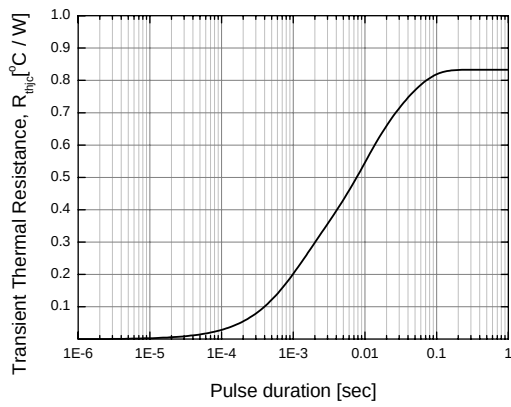


Figure 7. Power Derating

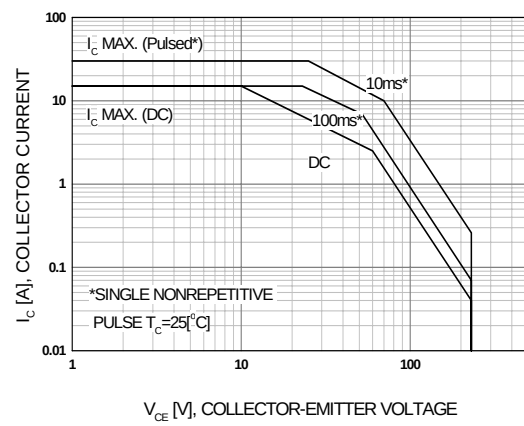


Figure 8. Safe Operating Area

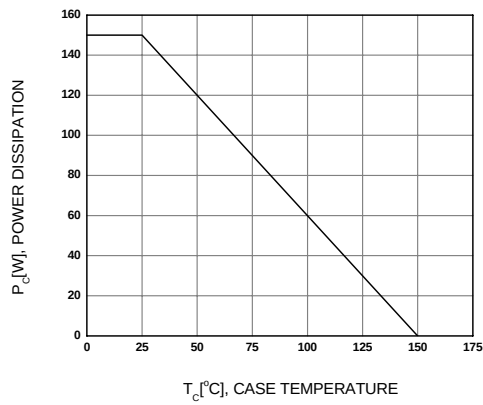


Figure 9. Power Derating



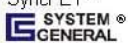
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Rev. I35



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