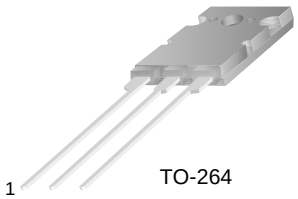
FAIRCHILD SEMICONDUCTOR®

March 2008

2SA1943/FJL4215
PNP Epitaxial Silicon Transistor

Applications

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



TO-264

1.Base 2.Collector 3.Emitter

Features

- High Current Capability: I_C = -15A.
- High Power Dissipation : 150watts.
- High Frequency : 30MHz.
- High Voltage : V_{CEO}= -230V
- Wide S.O.A for reliable operation.
- Excellent Gain Linearity for low THD.
- Complement to 2SC5200/FJL4315.
- Full thermal and electrical Spice models are available.
- Same transistor is also available in:
  -- TO3P package, 2SA1962/FJA4213 : 130 watts
  -- TO220 package, FJP1943 : 80 watts
  -- TO220F package, FJPF1943 : 50 watts

Absolute Maximum Ratings* T_a = 25°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°C) Derate above 25°C	150 1.04	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	0.83	°C/W

* Device mounted on minimum pad size

h_{FE} Classification

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

© 2008 Fairchild Semiconductor Corporation

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	-230			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C=-10mA, R_{BE}=∞	-230			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		360		pF

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

Ordering Information

Part Number	Marking	Package	Packing Method	Remarks
2SA1943RTU	A1943R	TO-264	TUBE	hFE1 R grade
2SA1943OTU	A1943O	TO-264	TUBE	hFE1 O grade
FJL4215RTU	J4215R	TO-264	TUBE	hFE1 R grade
FJL4215OTU	J4215O	TO-264	TUBE	hFE1 O grade

© 2008 Fairchild Semiconductor Corporation

Typical Characteristics

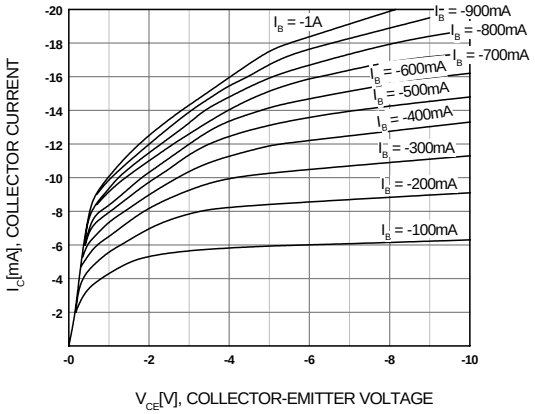


Figure 1. Static Characteristic

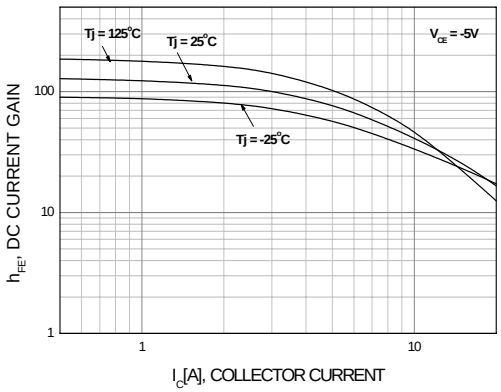


Figure 2. DC current Gain

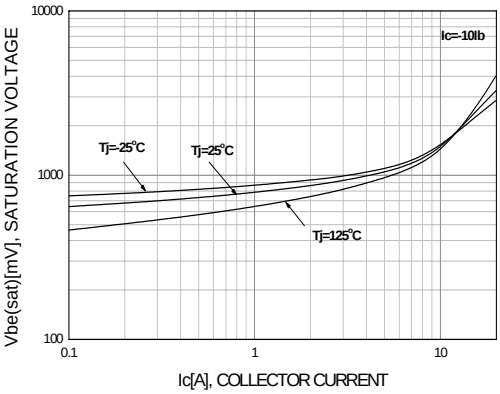


Figure 3. Base-Emitter Saturation Voltage

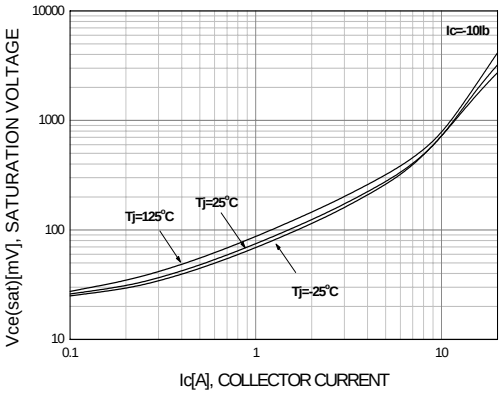


Figure 4. Collector-Emitter Saturation Voltage

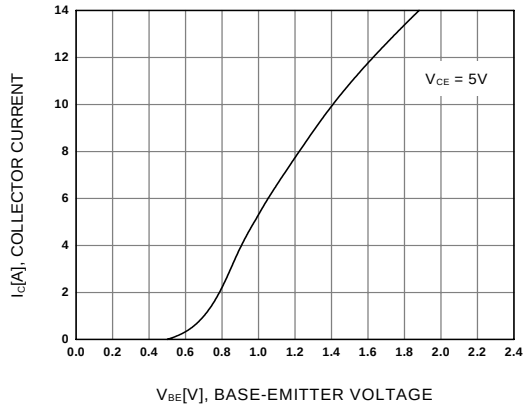


Figure 5. Base-Emitter On Voltage

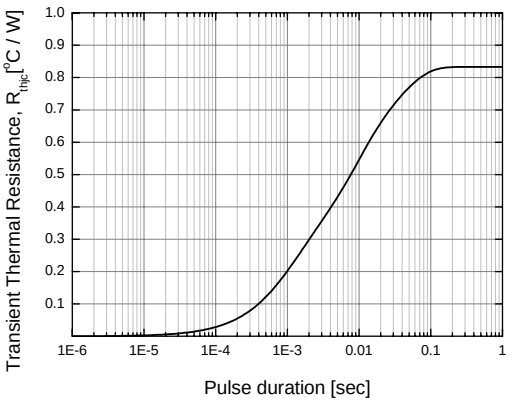


Figure 6. Thermal Resistance

© 2008 Fairchild Semiconductor Corporation

Typical Characteristics

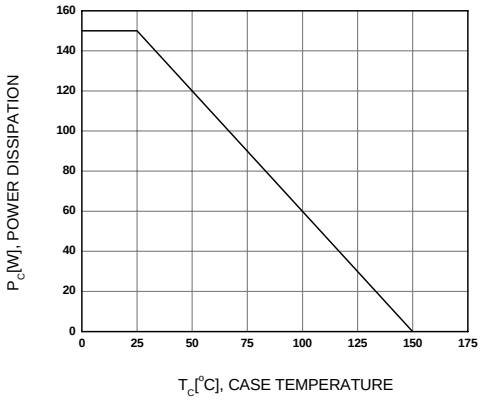


Figure 7. Power Derating

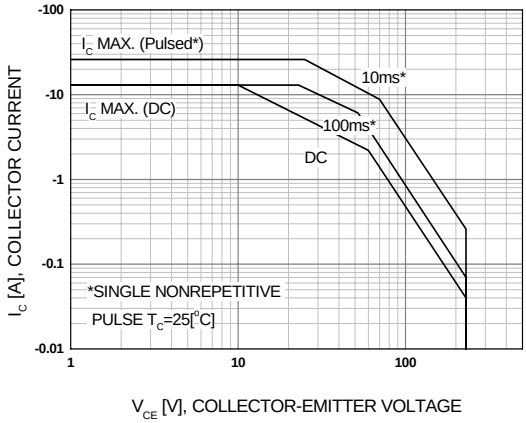
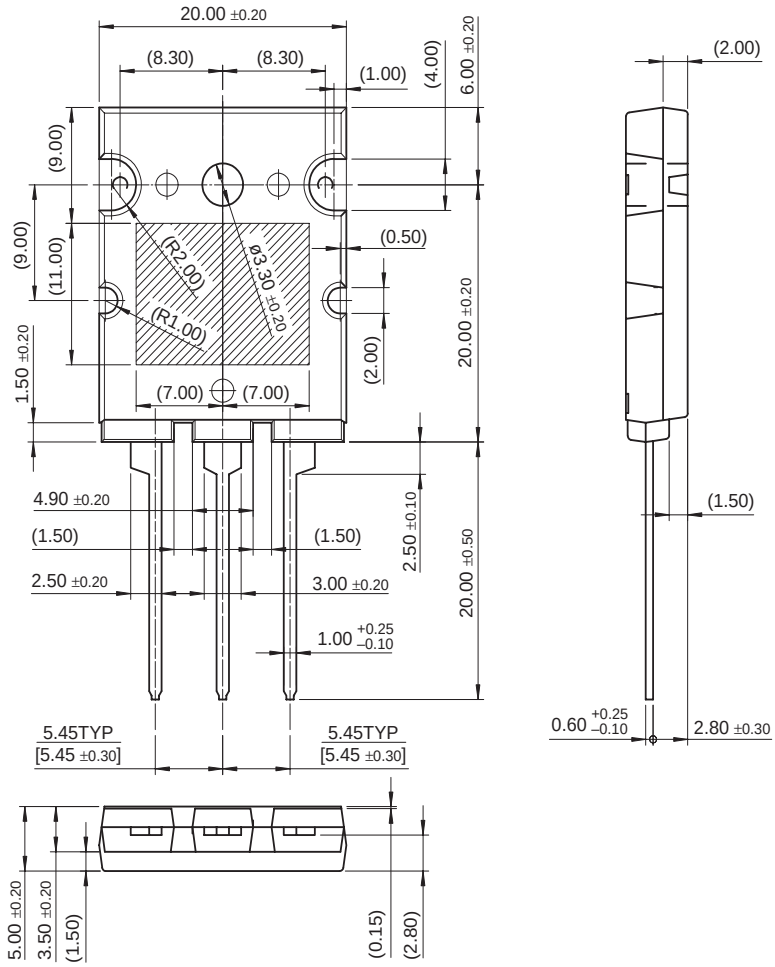


Figure 8. Safe Operating Area

© 2008 Fairchild Semiconductor Corporation

Package Dimensions

TO-264



Dimensions in Millimeters

© 2008 Fairchild Semiconductor Corporation

FAIRCHILD SEMICONDUCTOR®

TRADEMARKS

The following are registered and unregistered trademarks and service marks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx®	Green FPS™	Power247®	SuperSOT™-8
Build it Now™	Green FPS™ e-Series™	POWEREDGE®	SyncFET™
CorePLUS™	GTO™	Power-SPM™	The Power Franchise®
CROSSVOLT™	*i-Lo*™	PowerTrench®	the power franchise
CTL™	IntelliMAX™	Programmable Active Droop™	
Current Transfer Logic™	ISOPLANAR™	QFET®	TinyBoost™
EcoSPARK®	MegaBuck™	QS™	TinyBuck™
	MICROCOUPLER™	QT Optoelectronics™	TinyLogic®
Fairchild®	MicroFET™	Quiet Series™	TINYOPTO™
Fairchild Semiconductor®	MicroPak™	RapidConfigure™	TinyPower™
FACT Quiet Series™	MillerDrive™	SMART START™	TinyPWM™
FACT®	Motion-SPM™	SPM®	TinyWire™
FAST®	OPTOLOGIC®	STEALTH™	µSerDes™
FastvCore™	OPTOPLANAR®	SuperFET™	UHC®
FPS™		SuperSOT™-3	UniFET™
FRFET®	PDP-SPM™	SuperSOT™-6	VCX™
Global Power Resource^{SM}	Power220®		

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This 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	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

Rev. I31

© 2008 Fairchild Semiconductor Corporation

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:
moschip.ru
moschip.ru_4
moschip.ru_6
moschip.ru_9