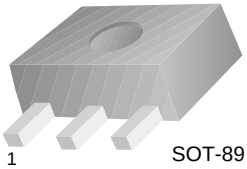
FAIRCHILD SEMICONDUCTOR®

November 2006

KSC2883
NPN Epitaxial Silicon Transistor

Low Frequency Power Amplifier

- 3W Output Application
- Collector Dissipation : P_C=1~2W in Mounted on Ceramic Board
- Complement to KSA1203

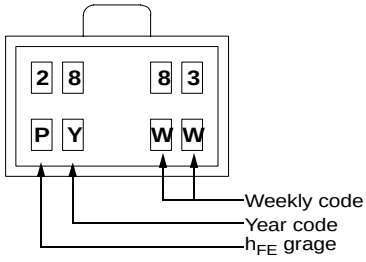


1

SOT-89

1. Base 2. Collector 3. Emitter

Marking



Absolute Maximum Ratings T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	1.5	A
I_B	Base Current	0.3	A
P_C P_C*	Collector Power Dissipation	500 1,000	mW mW
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55 ~ 150	°C

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired. Mounted on Ceramic Board (250mm^{2}x0.8mm)

Electrical Characteristics * T_a = 25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 10μA, I_B = 0	30			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 1mA, I_C = 0	5			V
I_{CBO}	Collector Cut-off Current	V_{CB} = 30V, I_E = 0			100	nA
I_{EBO}	Emitter Cut-off Current	V_{BE} = 5V, I_C = 0			100	nA
h_{FE}	DC Current Gain	V_{CE} = 2V, I_C = 500mA	100		320	
V_{CE} (sat)	Collector-Emitter Saturation Voltage	I_C = 1.5A, I_B = 30mA			2.0	V
V_{BE} (on)	Base-Emitter On Voltage	V_{CE} = 2V, I_C = 500mA			1.0	V
f_T	Current Gain Bandwidth Product	V_{CE} = 2V, I_C = 500mA		120		MHz
C_{ob}	Output Capacitance	V_{CB} = 10V, I_E = 0, f = 1MHz		40		pF

* Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

h_{FE} Classification

Classification	O	Y
h_{FE}	100 ~ 200	160 ~ 320

Package Marking and Ordering Information

Device Marking	Device	Package	Reel Size	Tape Width	Quantity
2883	KSC2883	SOT-89	13”	--	4,000

Typical Performance Characteristics

Figure 1. Static Characteristic

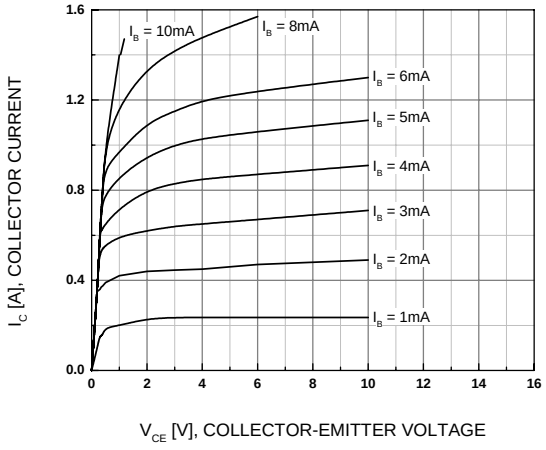


Figure 2. Base-Emitter On Voltage

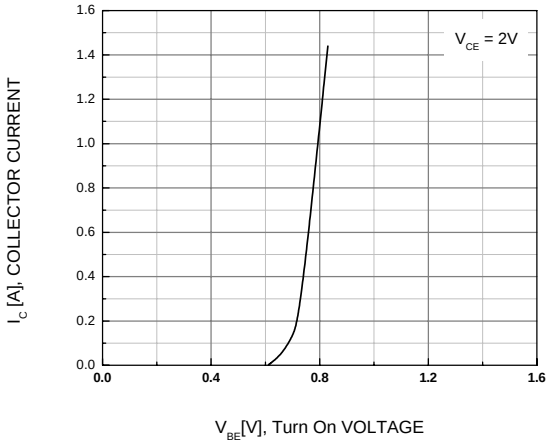


Figure 3. DC Current Gain

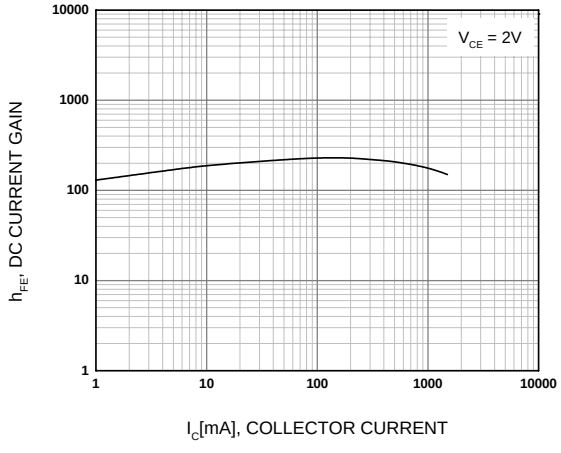


Figure 4. Collector-Emitter Saturation Voltage

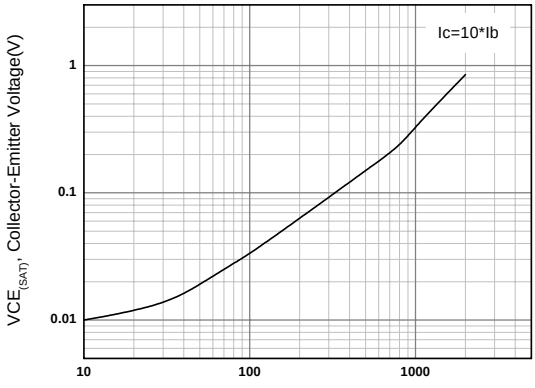


Figure 5. Safe Operating Area

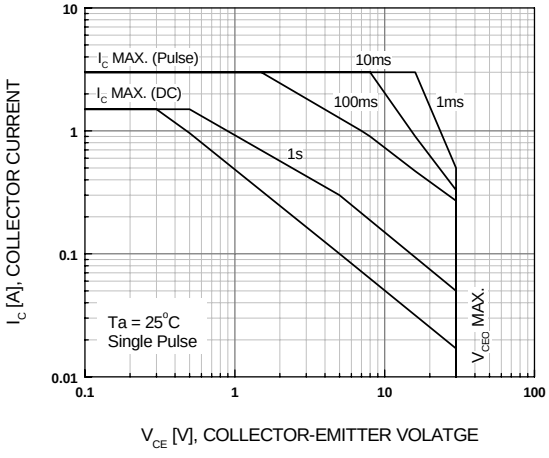
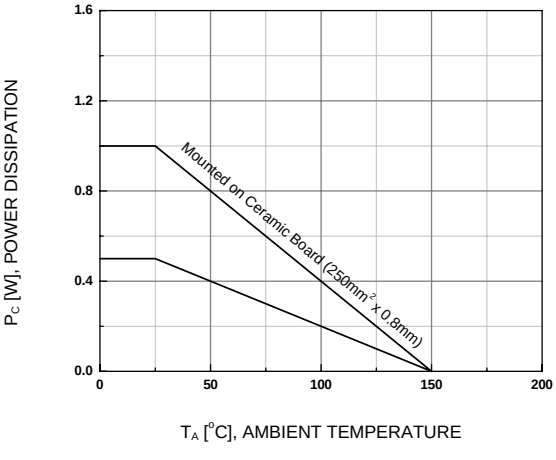
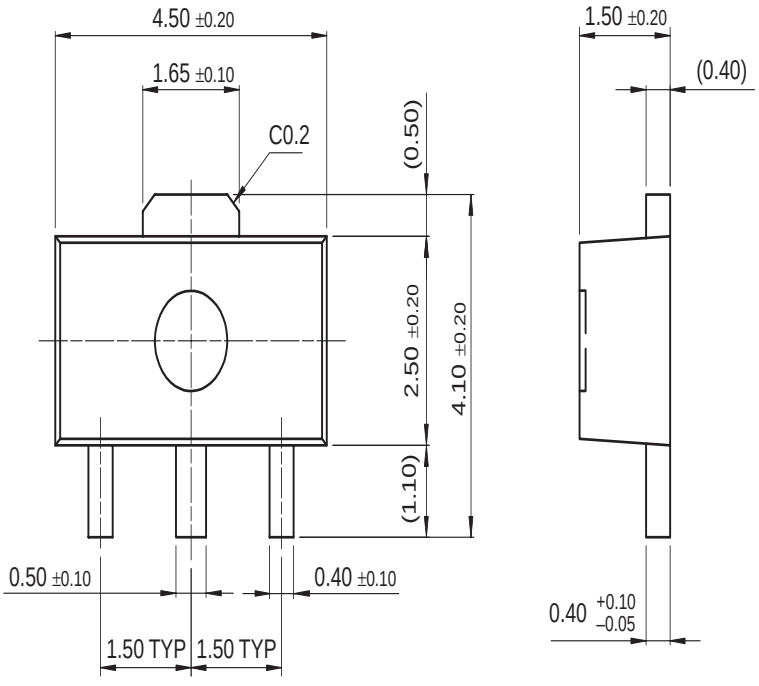


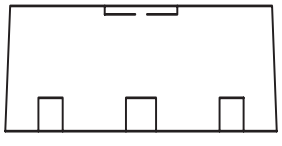
Figure 6. Power Derating



Mechanical Dimensions

SOT-89





Dimensions in Millimeters

FAIRCHILD SEMICONDUCTOR TRADEMARKS

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

ACEx™
ActiveArray™
Bottomless™
Build it Now™
CoolFET™
CROSSVOLT™
DOME™
EcoSPARK™
E^2CMOS™
EnSigna™
FACT®
FAST®
FASTr™
FPS™
FRFET™
FACT Quiet Series™
GlobalOptoisolator™
GTO™
HiSeC™
I^2C™
i-Lo™
ImpliedDisconnect™
IntelliMAX™
ISOPLANAR™
LittleFET™
MICROCOUPLER™
MicroFET™
MicroPak™
MICROWIRE™
MSX™
MSXPro™
OCX™
OCXPro™
OPTOLOGIC®
OPTOPLANAR™
PACMAN™
POP™
Power247™
PowerEdge™
PowerSaver™
PowerTrench®
QFET®
QS™
QT Optoelectronics™
Quiet Series™
RapidConfigure™
RapidConnect™
μSerDes™
ScalarPump™
SILENT SWITCHER®
SMART START™
SPM™
Stealth™
SuperFET™
SuperSOT™-3
SuperSOT™-6
SuperSOT™-8
SyncFET™
TCM™
TinyBoost™
TinyBuck™
TinyPWM™
TinyPower™
TinyLogic®
TINYOPTO™
TruTranslation™
UHC®
UltraFET®
UniFET™
VCX™
Wire™
Across the board. Around the world.™
The Power Franchise®
Programmable Active Droop™

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, or (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, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order 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 in order 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. I21