

March 2008

# **SS8550**

### 2W Output Amplifier of Portable Radios in Class B Push-pull Operation

### **Features**

- Complimentary to SS8050
- Collector Current: I<sub>C</sub>=1.5A
- Collector Power Dissipation: P<sub>C</sub>=1W (T<sub>C</sub>=25×C)



1. Emitter 2. Base 3. Collector

### Absolute Maximum Ratings Ta=25xC unless otherwise noted

Symbol	Parameter	Ratings	Units	
$V_{CBO}$	Collector-Base Voltage	-40	V	
V <sub>CEO</sub>	CEO Collector-Emitter Voltage		V	
V <sub>EBO</sub>	Emitter-Base Voltage	-6	V	
I <sub>C</sub>	Collector Current	-1.5	Α	
P <sub>C</sub>	Collector Power Dissipation	1	W	
TJ	Junction Temperature	150	°C	
T <sub>STG</sub>	Storage Temperature	-65 ~ 150	°C	

### Electrical Characteristics Ta=25xC unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Units
BV <sub>CBO</sub>	Collector-Base Breakdown Voltage	$I_C = -100 \mu A, I_E = 0$	-40			V
BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = -2mA, I <sub>B</sub> =0	-25			V
BV <sub>EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = -100μA, I <sub>C</sub> =0	-6			V
I <sub>CBO</sub>	Collector Cut-off Current	V <sub>CB</sub> = -35V, I <sub>E</sub> =0			-100	nA
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>EB</sub> = -6V, I <sub>C</sub> =0			-100	nA
h <sub>FE1</sub>	DC Current Gain	V <sub>CE</sub> = -1V, I <sub>C</sub> = -5mA	45	170		
h <sub>FE2</sub>		$V_{CE} = -1V, I_{C} = -100 \text{mA}$	85	160	300	
h <sub>FE3</sub>		$V_{CE} = -1V, I_{C} = -800 \text{mA}$	40	80		
V <sub>CE</sub> (sat)	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -800mA, I <sub>B</sub> = -80mA		-0.28	-0.5	V
V <sub>BE</sub> (sat)	Base-Emitter Saturation Voltage	I <sub>C</sub> = -800mA, I <sub>B</sub> = -80mA		-0.98	-1.2	V
V <sub>BE</sub> (on)	Base-Emitter on Voltage	V <sub>CE</sub> = -1V, I <sub>C</sub> = -10mA		-0.66	-1.0	V
C <sub>ob</sub>	Output Capacitance	V <sub>CB</sub> = -10V, I <sub>E</sub> =0		15		pF
		f=1MHz				
f <sub>T</sub>	Current Gain Bandwidth Product	V <sub>CE</sub> = -10V, I <sub>C</sub> = -50mA	100	200		MHz

## **h**<sub>FE</sub>Classification

Classification	В	С	D
h <sub>FE2</sub>	85 ~ 160	120 ~ 200	160 ~ 300

### **Typical Performance Characteristics**

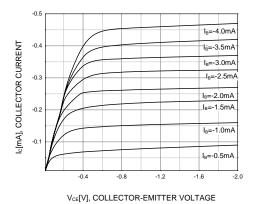


Figure 1. Static Characteristic

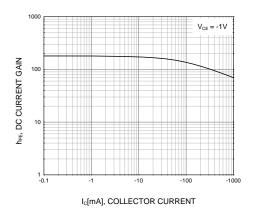


Figure 2. DC current Gain

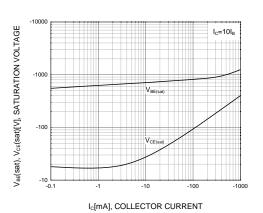


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

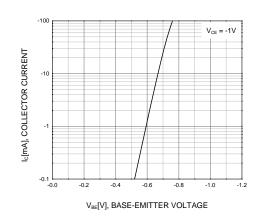


Figure 4. Base-Emitter On Voltage

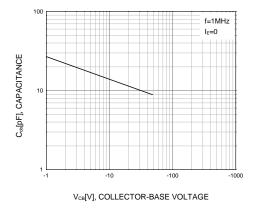


Figure 5. Collector Output Capacitance

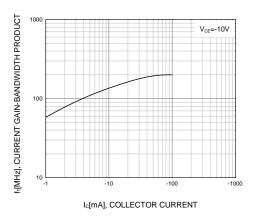


Figure 6. Current Gain Bandwidth Product





#### **TRADEMARKS**

The following includes registered and unregistered trademarks and service marks, owned by Fairchild Semiconductor and/or its global subsidiaries, and is not intended to be an exhaustive list of all such trademarks.

ACEx<sup>®</sup> Build it Now™ CorePLUS™ CorePOWER™ CROSSVOLT™ CTL TM

Current Transfer Logic™ EcoSPARK® EfficentMax™ EZSWITCH™ \*

Fairchild Semiconductor® FACT Quiet Series™ FACT

FAST® FastvCore™ FlashWriter®\*

EPS™ F-PFS™ FRFET®

Global Power Resources Green EPS™

Green FPS™ e-Series™ GTO™

IntelliMAX™ ISOPLANAR™ MegaBuck™

MICROCOUPLER™ MicroFET™ MicroPak™ MillerDrive™

MotionMax™ Motion-SPM™ OPTOLOGIC® OPTOPLANAR® PDP SPM™ Power-SPM™ PowerTrench®

Programmable Active Droop™

QFET<sup>®</sup> QS™

Quiet Series™ RapidConfigure™

Saving our world, 1mW at a time™

SmartMax™ SMART START™ SPM®

STEALTH\*\* SuperFET™ SuperSOT™-3 SuperSOT™-6 SuperSOT™-8 SupreMOS™ SyncFET™ SYSTEM ®

The Power Franchise®



TinvBoost™ TinyBuck™ TinyLogic<sup>®</sup> TINYOPTO™ TinyPower™ TinyPWM™ TinyWire™ μSerDes™

LIHO Ultra FRFET™ UniFET™  $VCX^{TM}$ VisualMax™

\* EZSWITCH™ and FlashWriter® are trademarks of System General Corporation, used under license by Fairchild Semiconductor.

#### 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.

- 1. Life support devices or systems are devices or systems 2. A critical component in any component of a life support, 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 a significant injury of the user.
  - 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 / 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 the design.
Obsolete	Not In Production	This datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

Rev. 134