

# AN7131

## 5W Audio Power Amplifier Circuit

### ■ Description

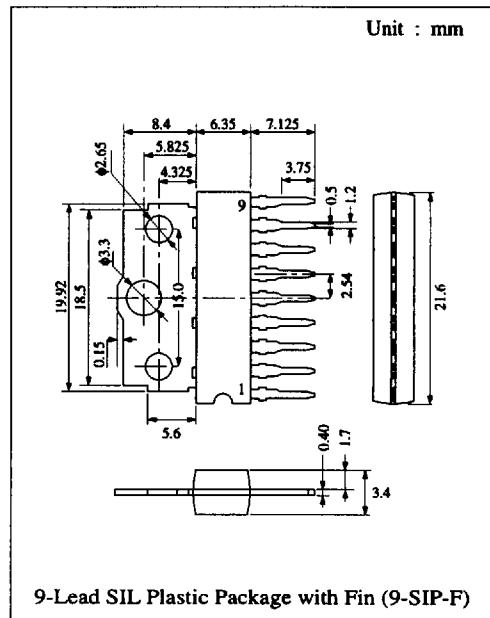
The AN7131 is a monolithic integrated circuit designed for audio power amplifiers such as portable radio, radio cassette tape recorder and car radio. Stabilized operation due to wide supply voltage.

### ■ Features

- High gain, low distortion, low noise
- Reduction in external components
- Built-in thermal protection circuit
- Built-in over voltage protection circuit
- Incorporating automatic operating point stabilizer circuit
- Low shock noise when power is switched ON and OFF
- Low quiescent current

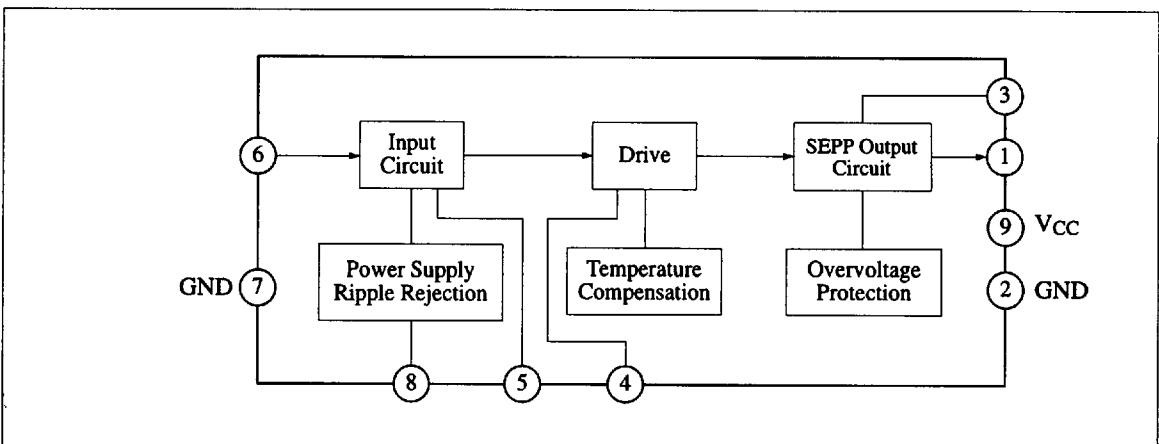
### ■ Pin

Pin No.	Pin Name
1	Output
2	GND (Output)
3	Bootstrap
4	Phase Compensation
5	N.F.B.
6	Input
7	GND (Input)
8	Ripple Filter
9	Vcc



9-Lead SIL Plastic Package with Fin (9-SIP-F)

### ■ Block Diagram



## ■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply Voltage *1	V <sub>CC</sub>	24	V
Supply Current	I <sub>CC</sub>	4	A
Power Dissipation (Ta = 30°C)	P <sub>D</sub>	10	W
Operating Ambient Temperature	T <sub>OPR</sub>	-30 ~ +75	°C
Storage Temperature	T <sub>STG</sub>	-40 ~ +150	°C

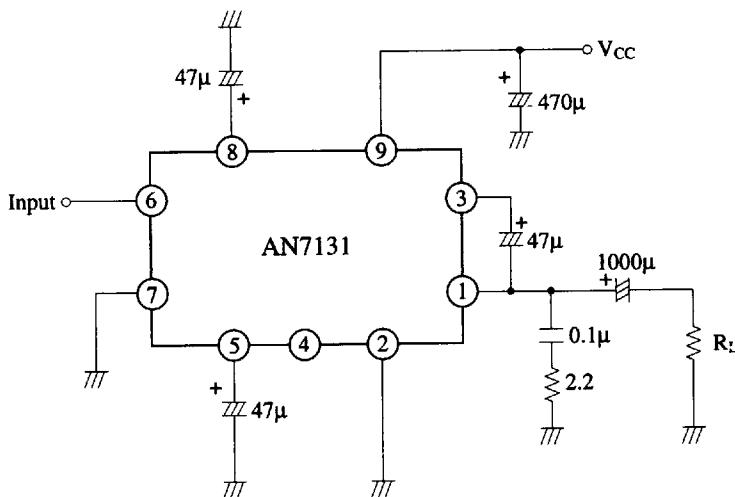
Operating Supply Voltage Range: V<sub>CC</sub> = 5.0V ~ 22.0V

\*1 Without input signal V<sub>CC</sub> = 24V

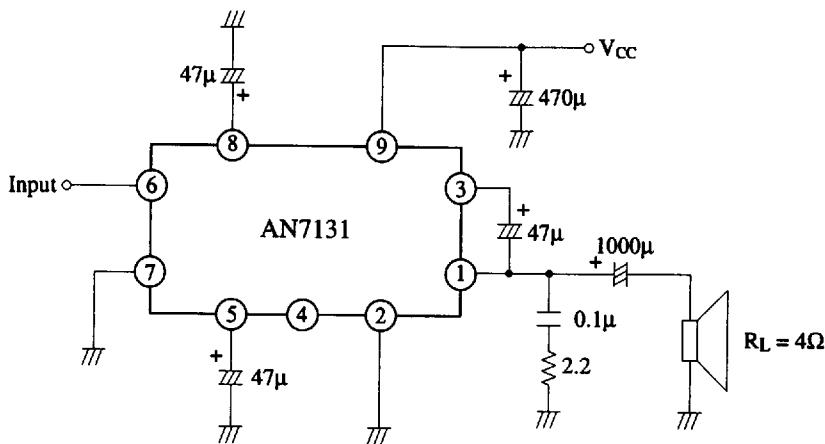
## ■ Electrical Characteristics (V<sub>CC</sub>=13.2V, R<sub>L</sub>=4Ω, f=1kHz, Ta=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Current	I <sub>Q</sub>	V <sub>in</sub> = 0mV	7	20	45	mA
Voltage Gain	G <sub>V</sub>	V <sub>in</sub> = 3mV	51.5	53.5	55.5	dB
Output Power	P <sub>O</sub>	THD = 10%	4.5	5		W
Total Harmonic Distortion	THD	V <sub>in</sub> = 3mV		0.3	1	%
Output Noise Voltage	V <sub>no</sub>	R <sub>g</sub> = 10kΩ		1.5	3	mV
Input Impedance	Z <sub>in</sub>			30		kΩ

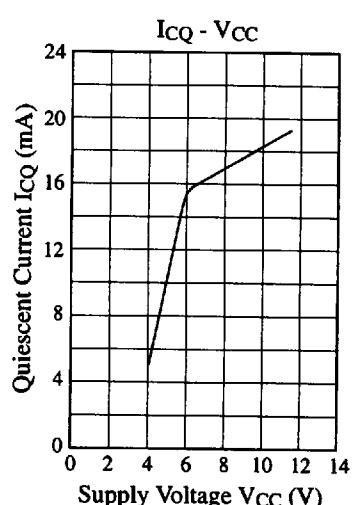
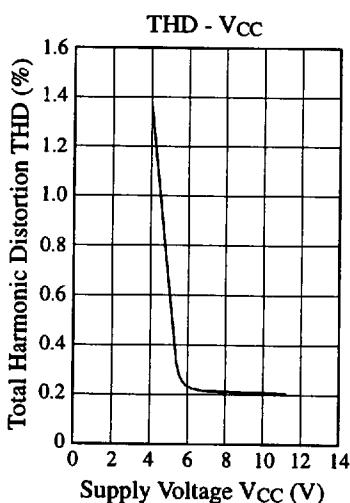
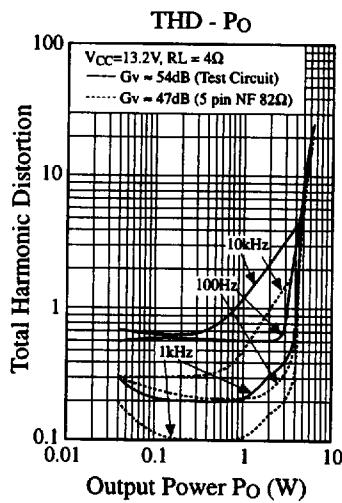
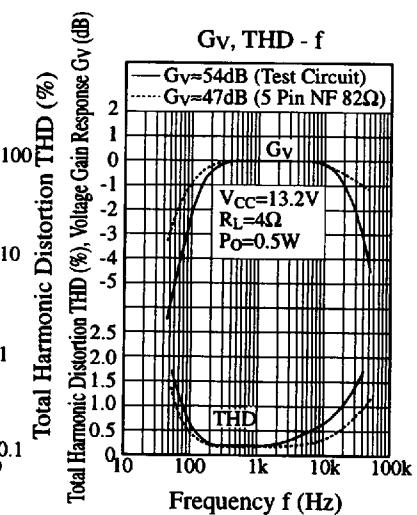
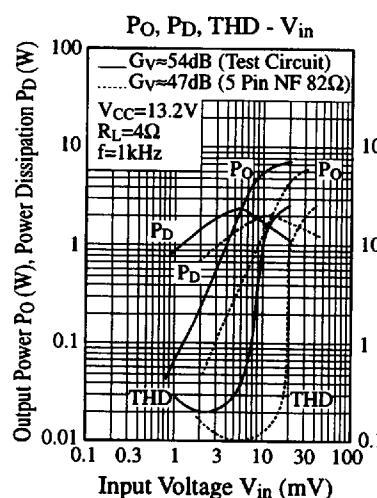
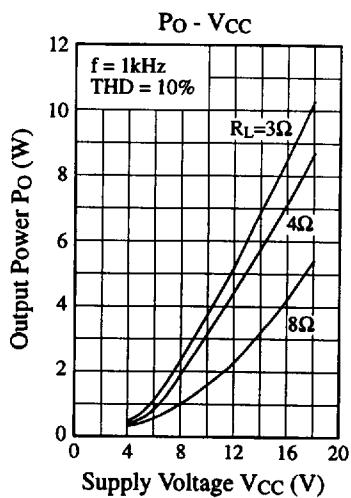
## Test Circuit



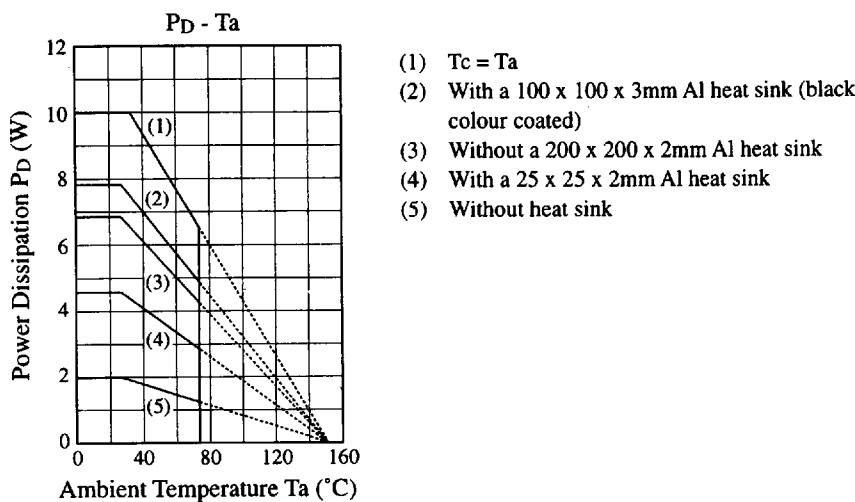
## ■ Application Circuit



## ■ Characteristics Curve



## ■ Characteristics Curve (Continue)



## ■ Printed Circuit Board Layout (Scale: 1:1)

