AN7140

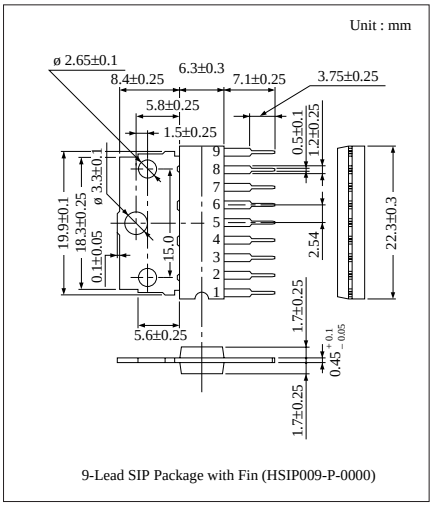
5W Audio Power Amplifier Circuit

■ Overview

The AN7140 is an integrated circuit designed for low power amplifier such as portable radio, radio cassette tape recorder and car radio. Wide supply voltage range (6 ~ 16V) enables stabilized operation. Fewer external components and 9-pin SIL package achieved compact and highly integrated set.

■ Features

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

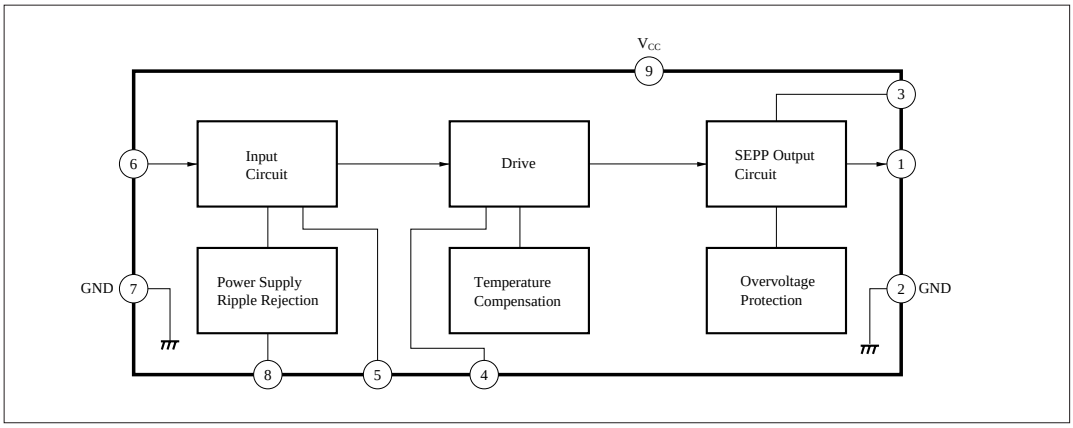


9-Lead SIP Package with Fin (HSIP009-P-0000)

■ Pin Descriptions

Pin No.	Pin Name
1	Output
2	GND
3	Bootstrap
4	Phase Compensation
5	N.F.B
6	Input
7	GND
8	Ripple Filter
9	V_{CC}

■ Block Diagram



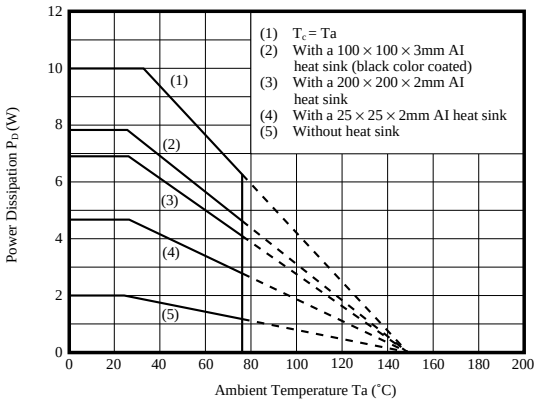
■ Absolute Maximum Ratings (Ta= 25˚C)

Parameter	Symbol	Rating	Unit
Supply Voltage	V_{CC}	20	V
Supply Current	I_{CC}	4	A
Power Dissipation (Ta = 30˚C)	P_D	10	W
Operating Ambient Temperature	T_{opr}	– 30 ~ + 75	˚C
Storage Temperature	T_{stg}	– 40 ~ + 150	˚C

■ Electrical Characteristics (V_{CC} = 13.2V, R_L = 4Ω, f = 1kHz, Ta = 25˚C)

Parameter	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Circuit Current	I_{CQ}	V_i= 0	15	30	55	mA
Voltage Gain	G_V	V_i= 3mV	51.5	53.5	55.5	dB
Output Power	P_O	THD= 10%	4.5	5	—	W
Total Harmonic Distortion	THD	V_i= 3mV	—	0.15	1	%
Output Noise Voltage	V_{no}	R_g= 10kΩ	—	1.5	3	mV
Input Impedance	Z_i		—	30	—	kΩ

P_D – Ta



■ Application Circuit