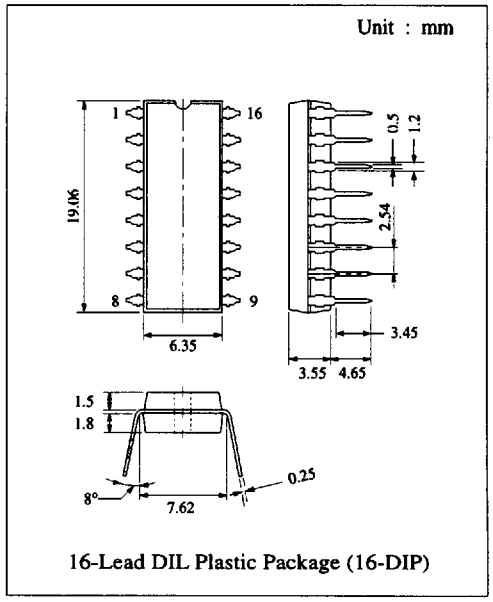
AN8053N

1.0W Power Amplifier

■ Description

The AN8053N is a monolithic integrated circuit designed for single channel 1W output power amplifier. It is suitable for electronic musical instruments.

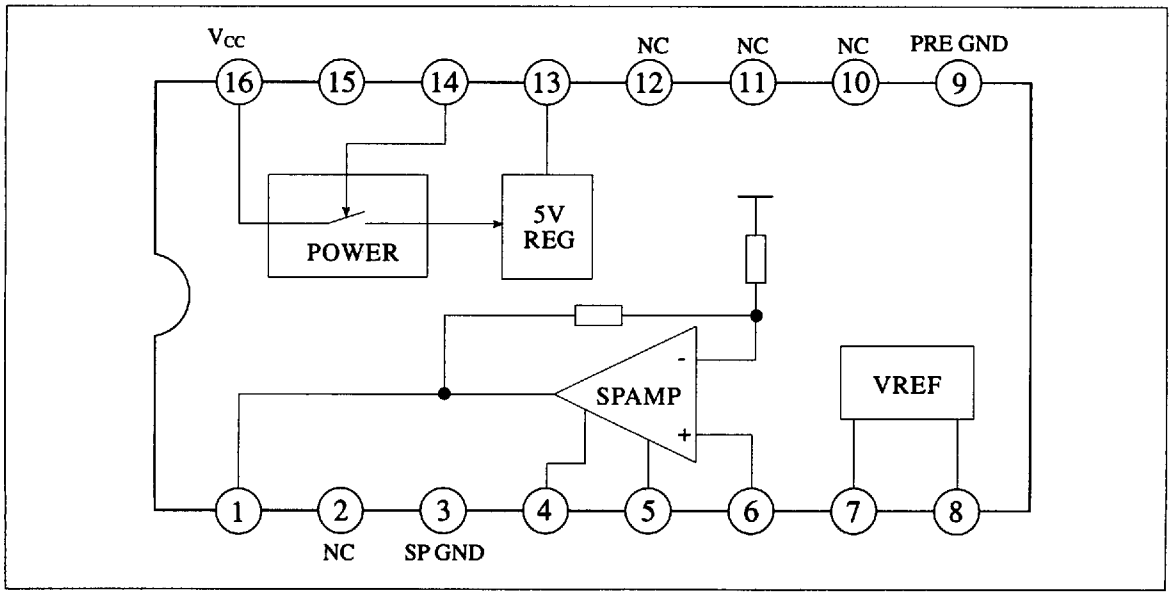


16-Lead DIL Plastic Package (16-DIP)

■ Features

- Built-in 5V(80mA) voltage regulator
- Built-in standby and speaker mute circuit
- Vcc operating range : 4.0V ~ 11.0V

■ Block Diagram



■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V_{CC}	11.5	V
Supply Current	I_{CC}	1.0	A
Power Dissipation	P_D	1100	mW
Operating Ambient Temperature	Topr	-20 ~ +65	°C
Storage Temperature	Tstg	-55 ~ +150	°C

Operating Supply Voltage Range : (when driving 8Ω load) V_{CC} = 4.0V ~ 11.0V
: (when driving 4Ω load) V_{CC} = 4.0V ~ 8.0V

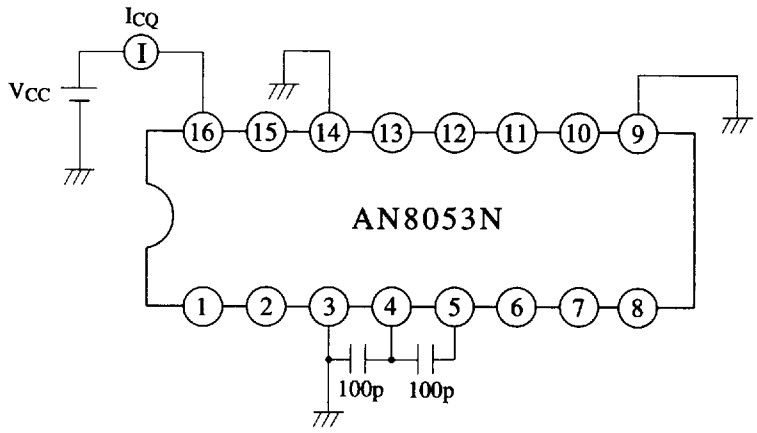
■ Electrical Characteristics (V_{CC}=7.5V, f=1kHz, Ta=25°C)

Item	Symbol	Test Cct.	Condition	min.	typ.	max.	Unit
Quiescent Current	I_{CQ}	1	V_{CC}=7.5V when no input signal	5	12	25	mA
Circuit Current during Standby	I_{STBY}	2	Control pin open			10	μA
Control Pin (H)	$V_{C(H)}$	3	I_{CC} at Standby condition	V_{CC} -1.0		V_{CC} 0.3	V
Control Pin (L)	$V_{C(L)}$	3	I_{CC} at normal operation condition	-0.3		1.0	V
Control Pin Output Current	I_C	4	V_C=0V	-65	-50	-35	μA
Regulator Voltage Ouput	V_{REG}	5	V_{CC}=6.0V, I_{REG}=20mA	4.65	5.0	5.35	V
SP Amp. Voltage Gain	G_{VSP}	6	V_{IN}=-40dBV, R_L=4Ω	22	24	26	dB
SP Amp. Mute	ΔMUTE	7	V_{IN}=-40dBV, R_L=4Ω, V_{SPM}=0V		-25	-22	dB
SP Amp. Output Power (1)	$P_{O(1)}$	6	THD=10%, R_L=4Ω, V_{CC}=8.0V	1.0			W
SP Amp. Output Power (2)	$P_{O(2)}$	6	THD=10%, R_L=8Ω, V_{CC}=11.0V	1.0			W
SP Amp. THD	THD	6	P_O=-0.5W, R_L=4Ω		0.5	2.0	%
SP Amp. Output Noise Voltage	V_{NO}	8	R_G=10kΩ, R_L=4Ω, Din/Audio Filter		0.2	2.0	mV

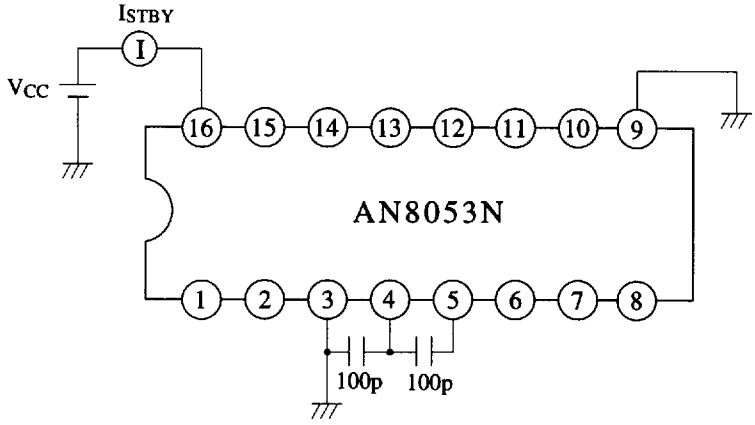
■ Pin

Pin No	Pin Name	Pin No	Pin Name
1	Speaker Output	9	Pre Amp. GND
2	N.C	10	N.C
3	GND (Output)	11	N.C
4	f Characteristics Adjustment 1	12	N.C
5	f Characteristics Adjustment 2	13	Regulator Voltage Output
6	Speaker Input	14	Control
7	Speaker Mute	15	N.C
8	Reference Voltage	16	V_{CC}

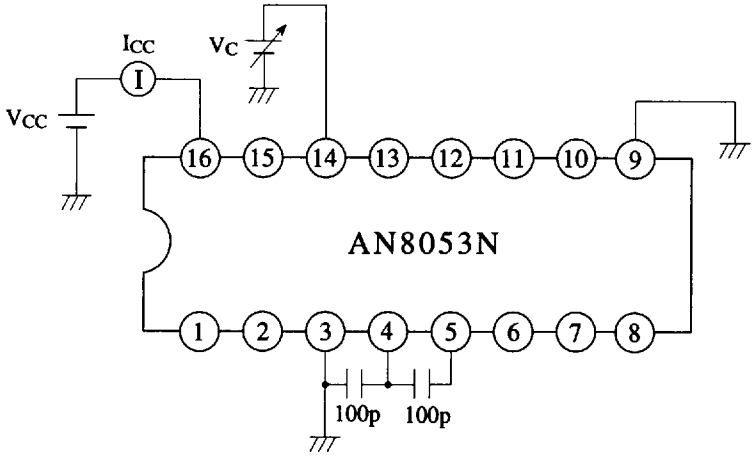
Test Circuit 1



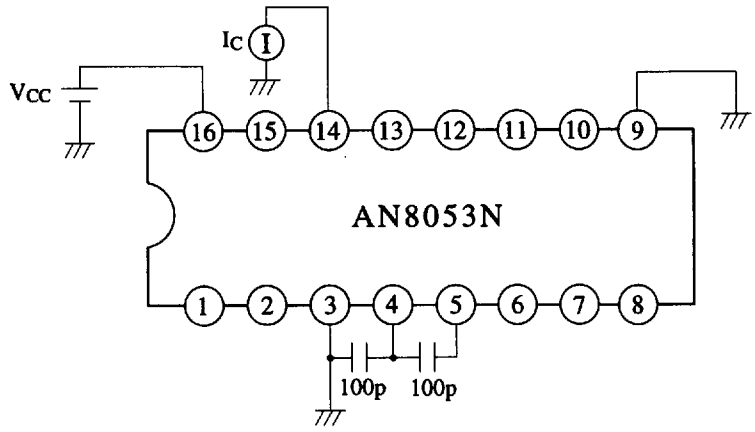
Test Circuit 2



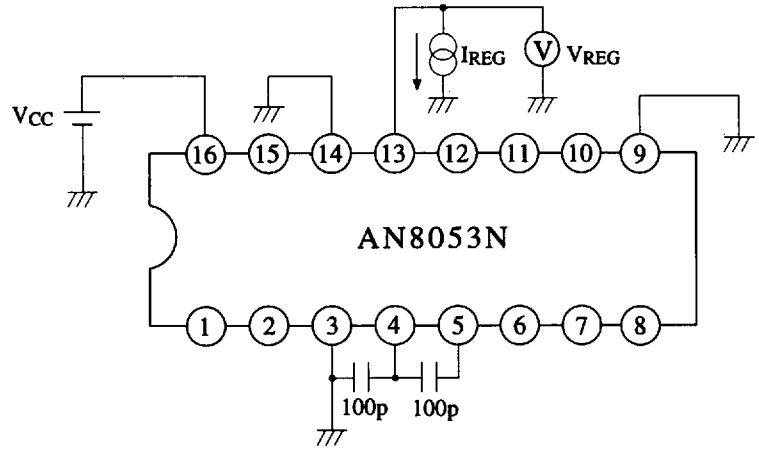
Test Circuit 3



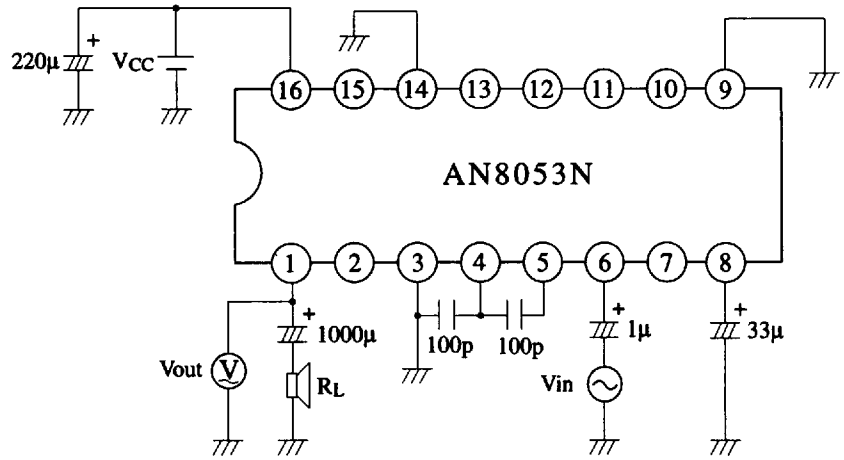
Test Circuit 4



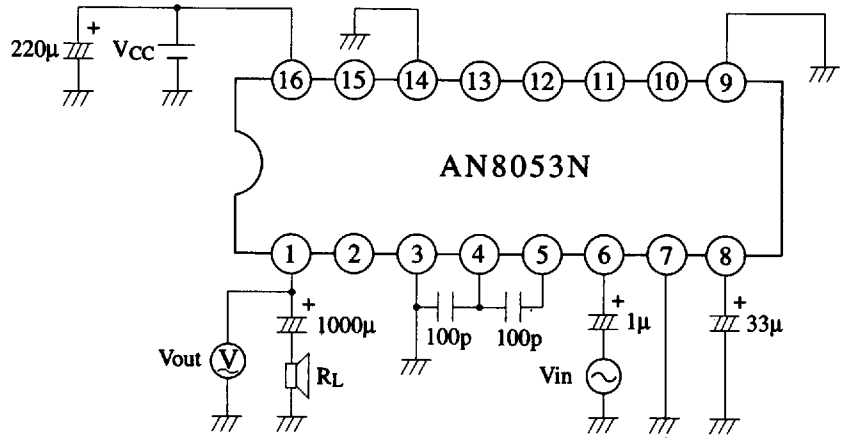
Test Circuit 5



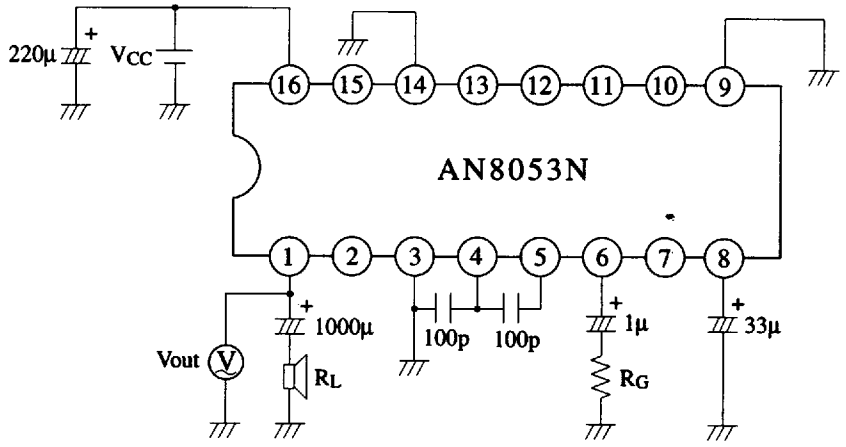
Test Circuit 6



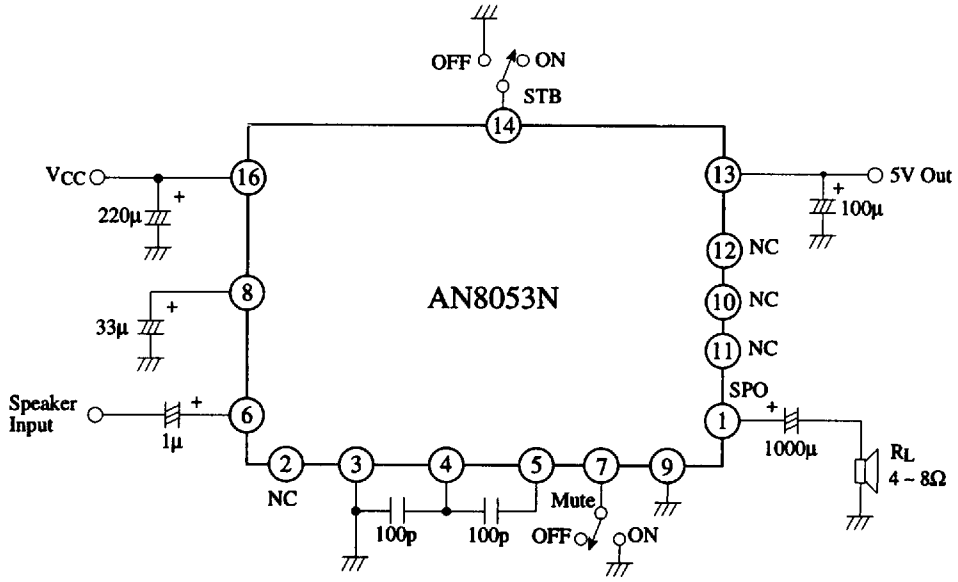
Test Circuit 7



Test Circuit 8



■ Application Circuit



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