

AN8053N

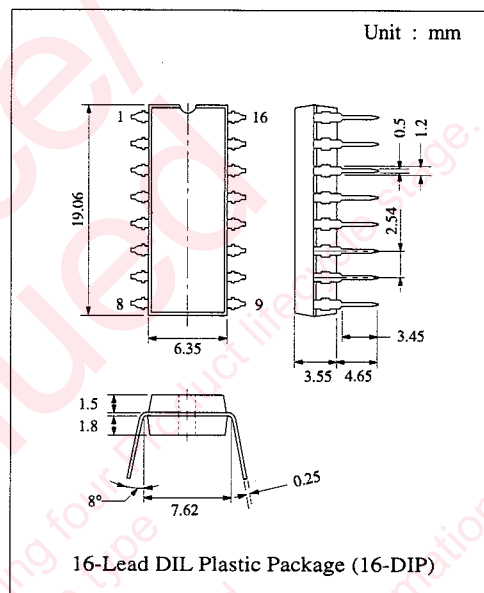
1.0W Power Amplifier

■ Description

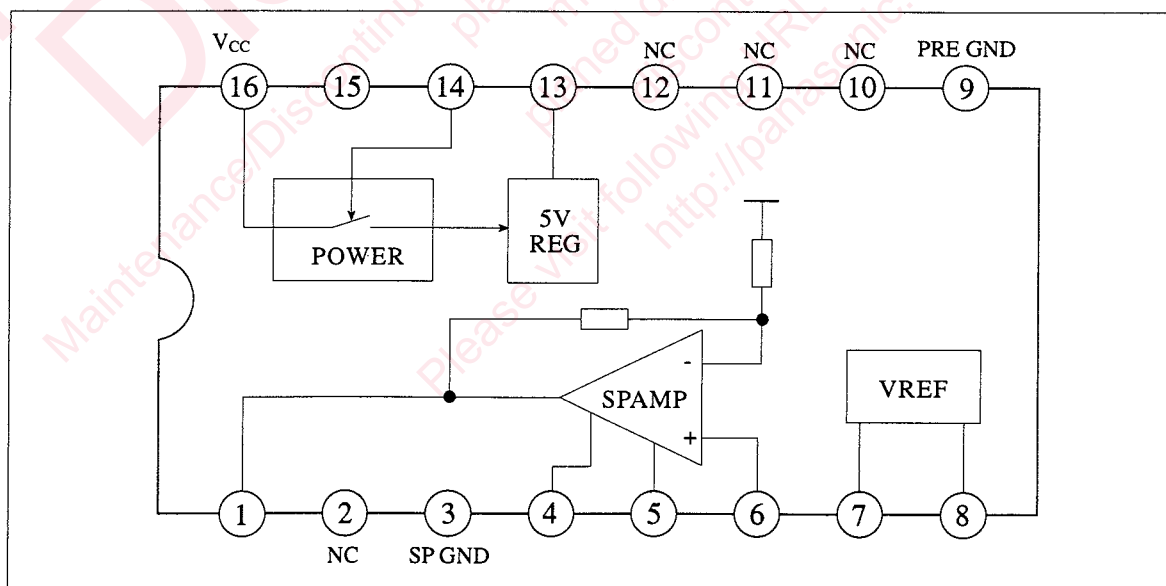
The AN8053N is a monolithic integrated circuit designed for single channel 1W output power amplifier. It is suitable for electronic musical instruments.

■ 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

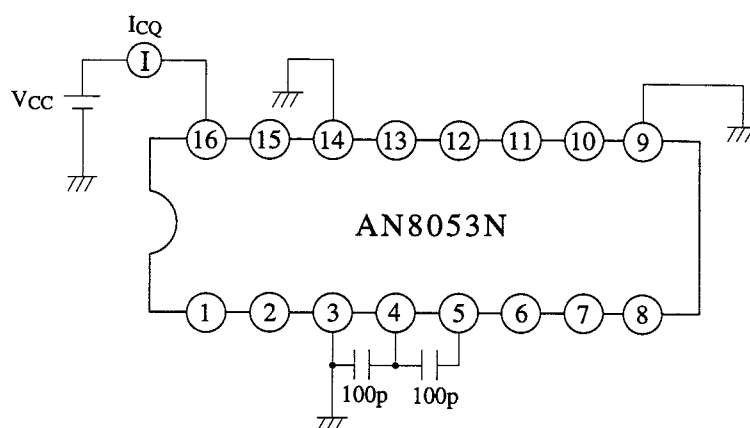
■ Electrical Characteristics (V_{CC}=7.5V, f=1kHz, Ta=25°C)

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 Output	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

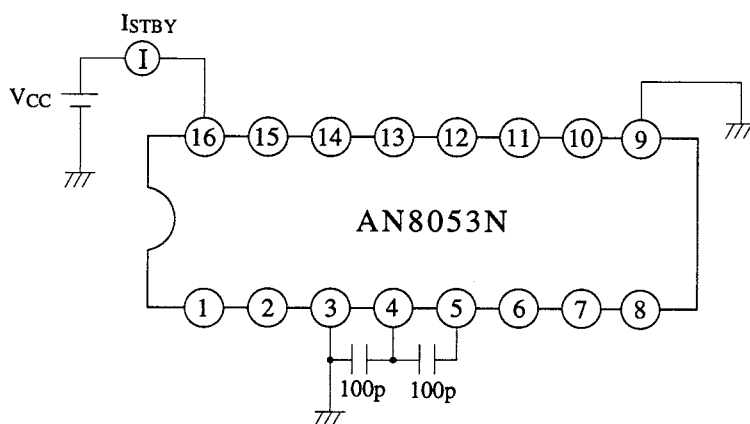
■ Pin

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}

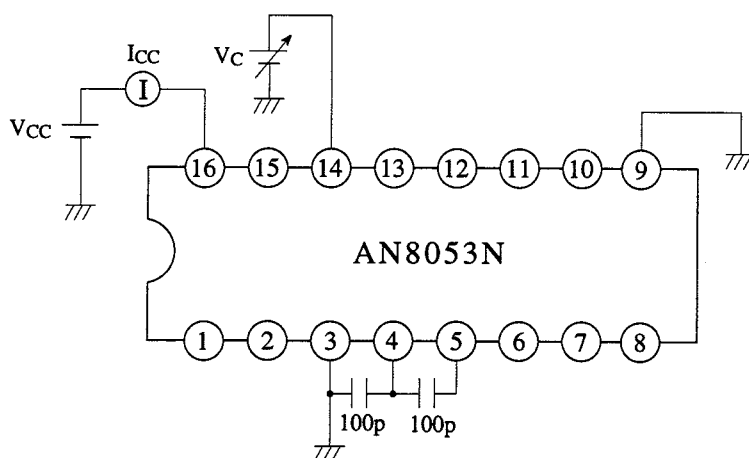
Test Circuit 1



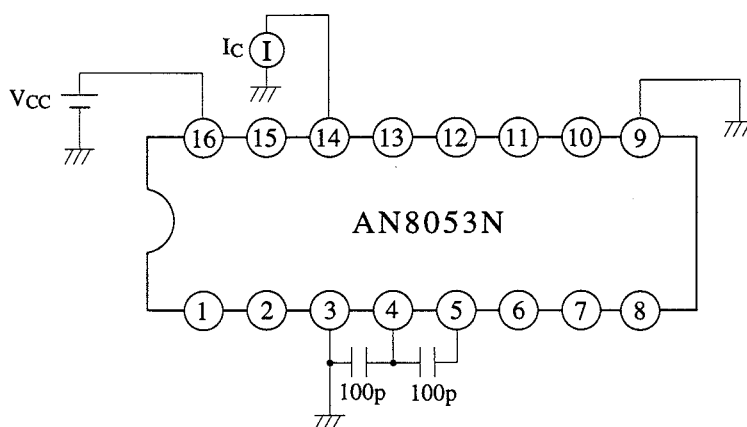
Test Circuit 2



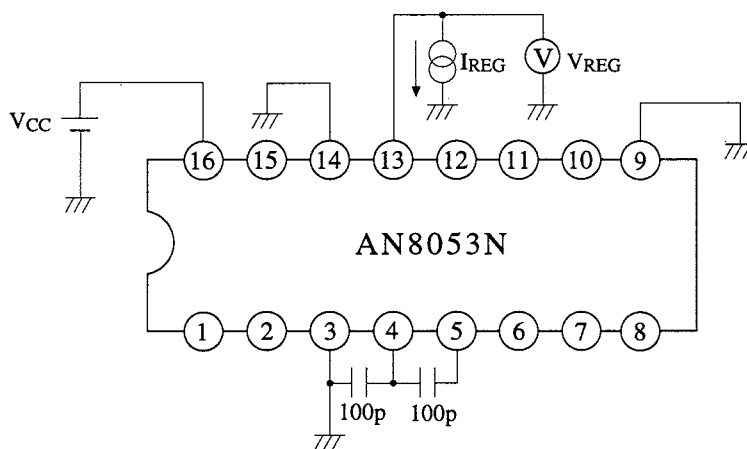
Test Circuit 3



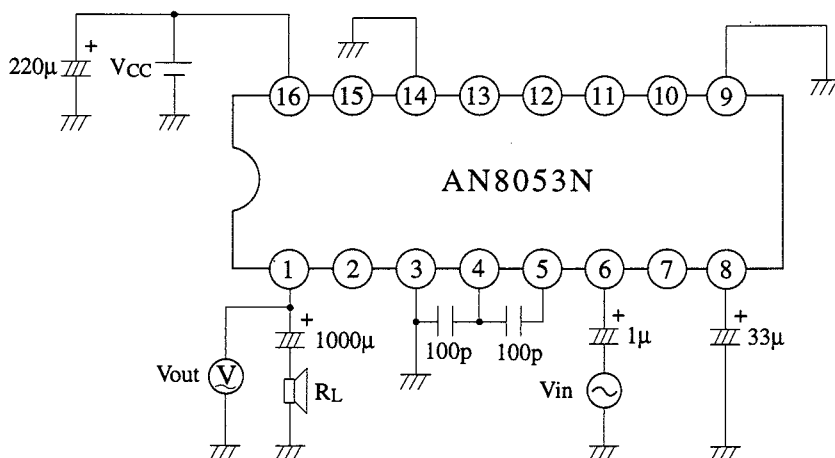
Test Circuit 4



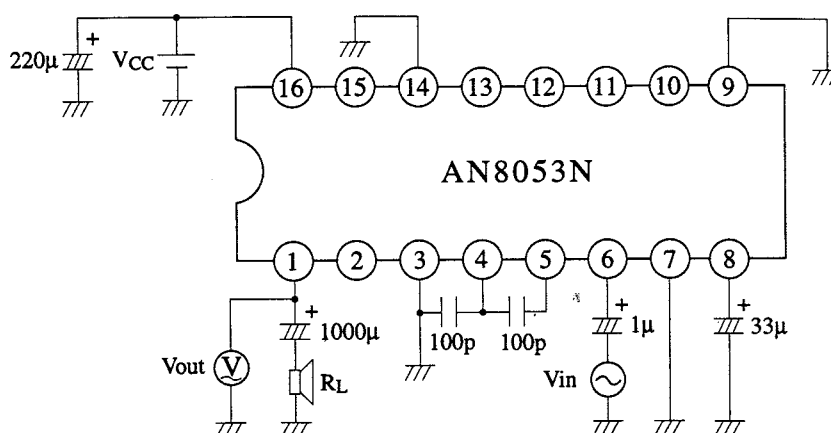
Test Circuit 5



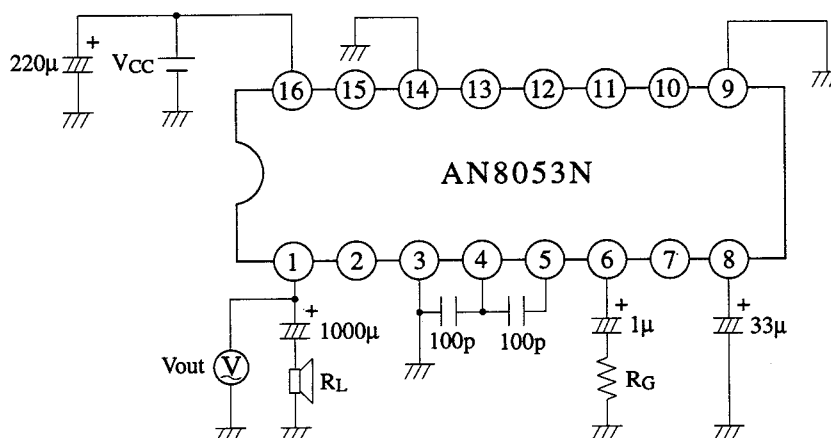
Test Circuit 6



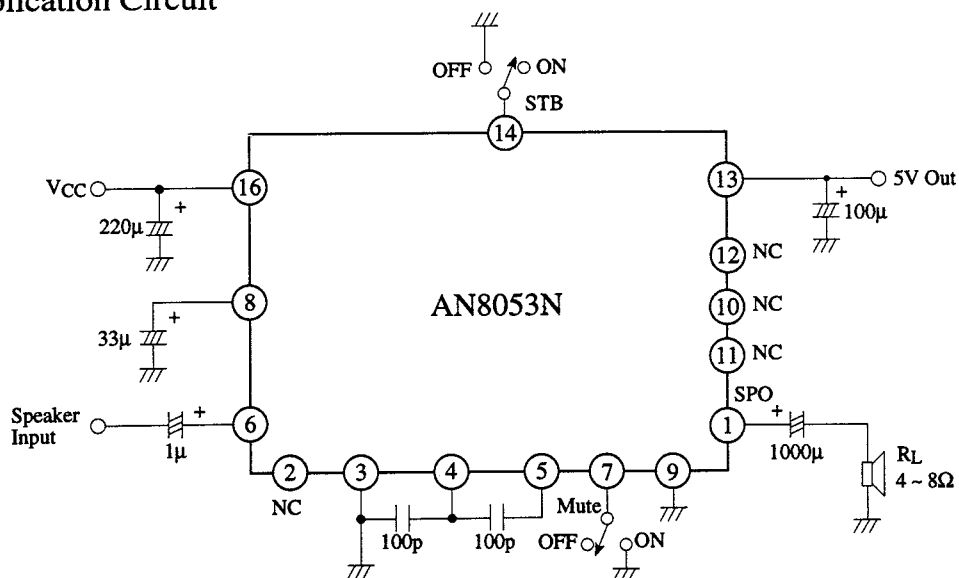
Test Circuit 7



Test Circuit 8



■ Application Circuit



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