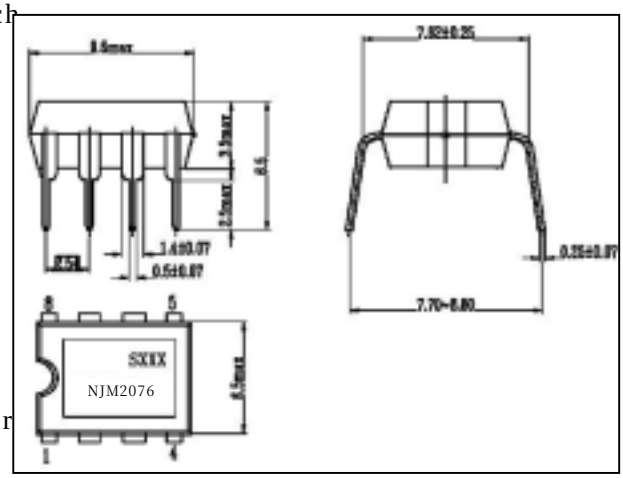
TIGER ELECTRONIC CO.,LTD

DUAL LOW VOLTAGE POWER AMPLIFIER NJM2076

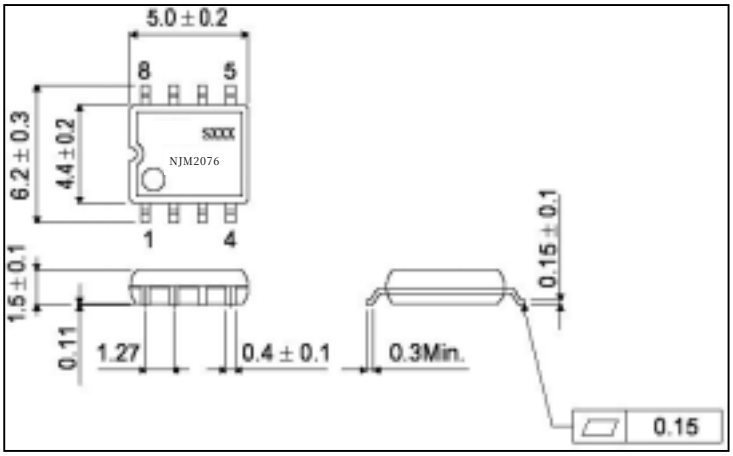
DESCRIPTION

The NJM2076 is a dual power amplifier, which operates with 1.0V minimum supply voltage. The NJM2076 is suitable radio and head-phone of stereo and single BTL application.

Outline Drawing



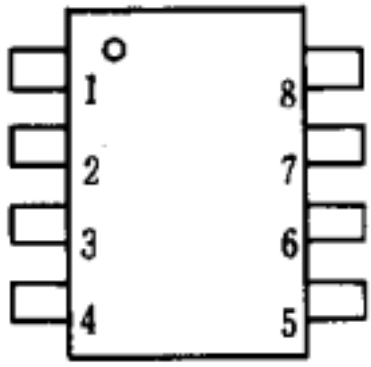
DIP—8



FEATURE

- BTL operation Po=90mW type.
- Minimum external components.
- Headphone stereo Amp. with external transistor
- Low operation voltage (1.0V min)
- Low operating current (4.7mA Typ.)

PIN CONNECTION



PIN FUNCTION SOP-8

1. Inverting Amp. Input (A)
2. Non-Inverting Amp. Input (B)
3. V^+
4. Base (B)
5. (B) Output
6. GND
7. (A) Output
8. Base (A)

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	Vcc	4.5	V
Maximum input signal	V_{IN}	200	mVrms
Power dissipation	P_D	500	mW
Operating temperature range	Topr	-20~75	°C
Storage Temperature range	Tstg	-40~125	°C

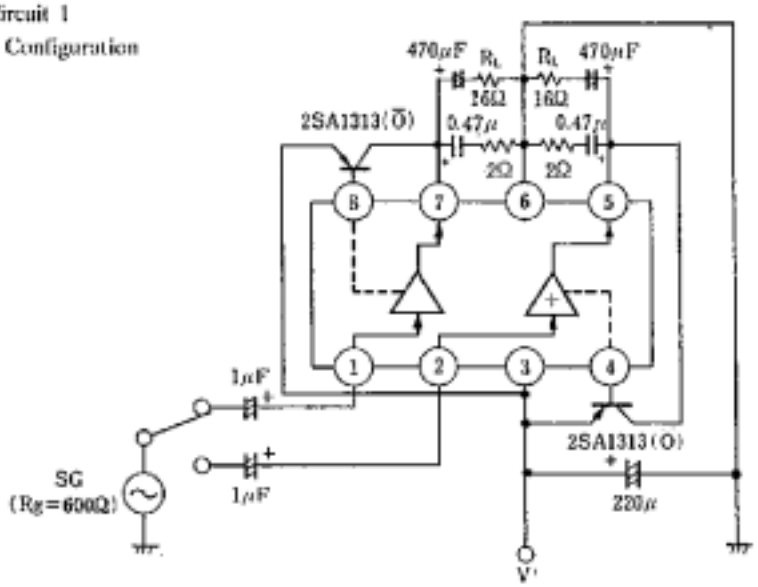
ELECTRICAL CHARACTERISTICS

(Unless otherwise specified: Ta=25°C, V^+=1.5V)

Characteristics	Symbol	Test conditions	Min	Typ	Max	Unit
Operating Current	Icc	Input: Open		4.7	7.0	mA
(Ⅰ)Stereo Configuration (Test Circuit 1: R_L=16Ω)						
Voltage Gain	Av	V_{IN}=10mVrms	26.5	28	29.5	dB
Max. Output Power	P_{O1}	THD=10%(D, M-Type)	15	17.5		mW
	P_{O2}	THD=10%, V^+=1.0V		3		mW
Total Harmonic Distortion	THD_1	Po=1mW(126mVrms/16Ω)		0.4	0.8	%
Output Noise Voltage	V_{NO1}	Rg=0, A curve		50	150	μV
Ripple Rejection Ratio	RR_1	Rg=0, f_R=1kHz, V_R=30mVrms	25	35		dB
Input Resistance	R_{IN}		25	33	43	kΩ
Output Pin Voltage	$V_{O(DC)}$		0.62	0.7	0.77	V
(Ⅱ) BTL Configuration (Test Circuit 2: R_L=8Ω)						
Max. Output Power	P_{O3}	THD=10%(D, M-Type)	75	90		mW
	P_{O4}	THD=10%, V^+=1.0V(D, M-Type)		20		mW
Total Harmonic Distortion	THD_2	Po=10mW(283mVrms/8Ω)		1.5	4.5	%
Output Noise Voltage	V_{NO2}	Rg=0, A curve		85	250	μV
Ripple Rejection Ratio	RR_2	Rg=0, f_R=1kHz, V_R=30mVrms	20	25		dB
Voltage Difference Between Two Output Pins	$\Delta V_{O(DC)}$				50	mV

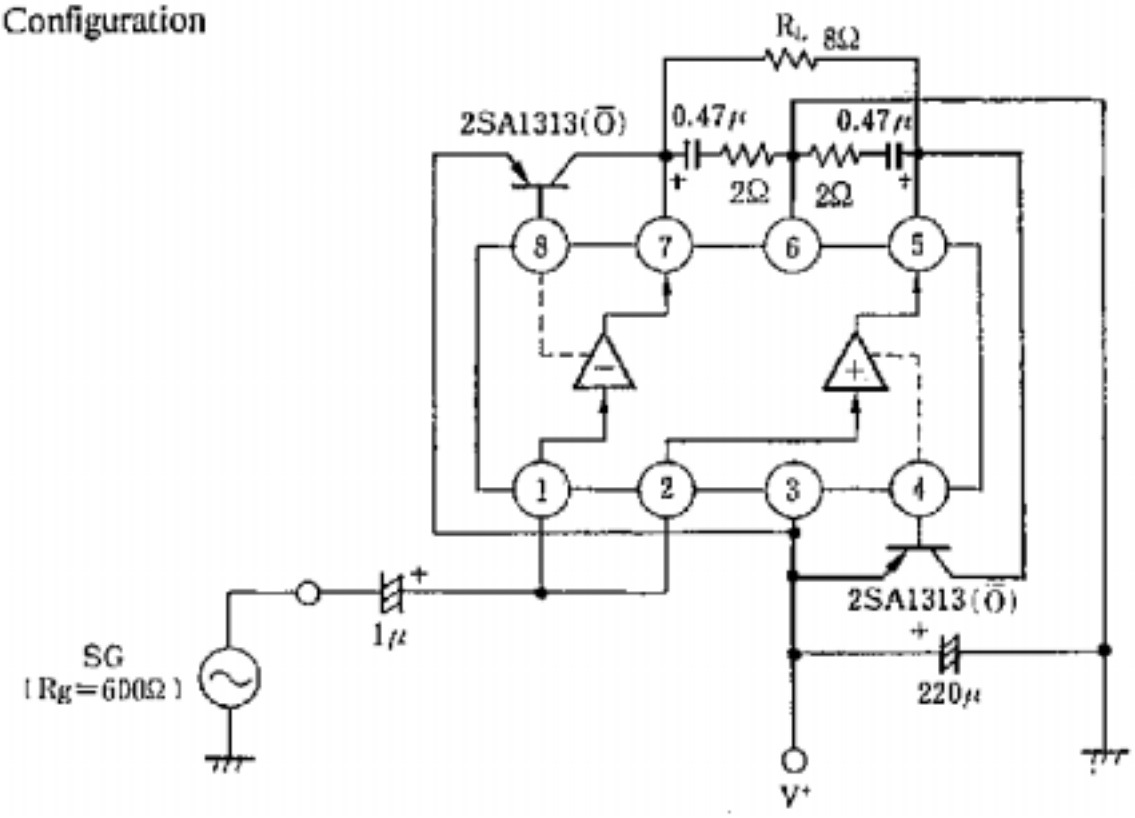
TEST CIRCUIT

· Test Circuit 1
Stereo Configuration



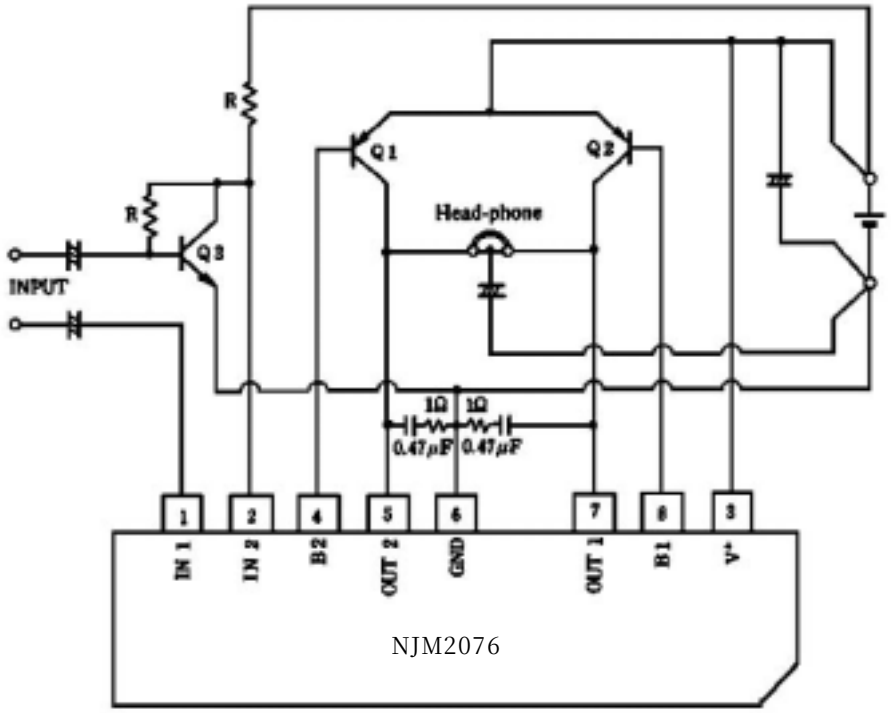
2SA1313(Ō): h_{FE}=115~125
(I_C=10mA)

· Test Circuit 2
BTL Configuration

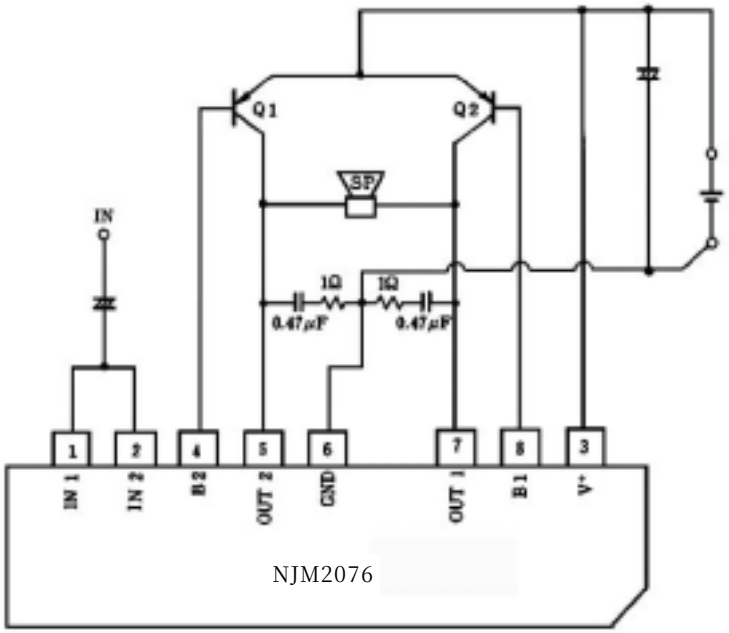


APPLICATION CIRCUIT

1. For Stereo Head-Phone

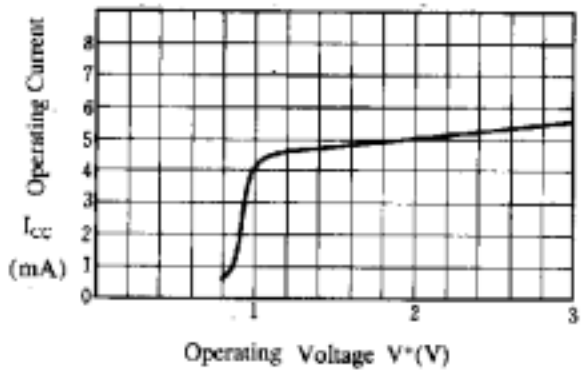


2. BTL Amp. for Speaker

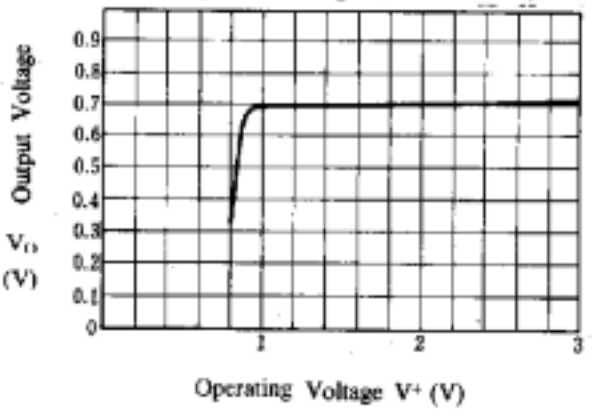


CHARACTERISTIC CURVES

Operating Current (Test Circuit 1)

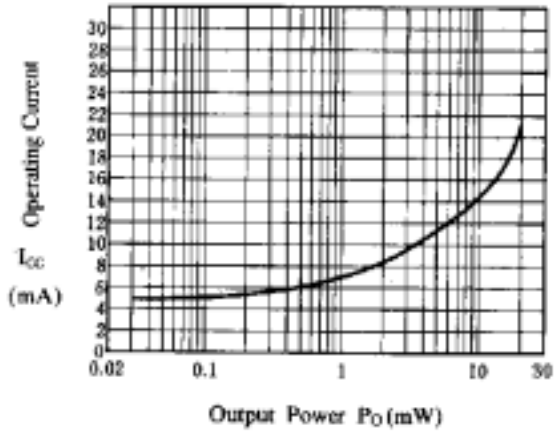


Output Voltage (Test Circuit 1)



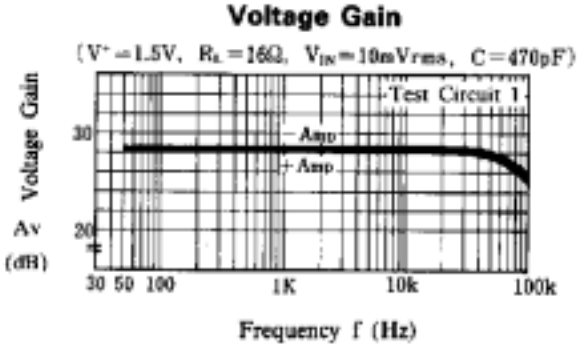
Operating Current (Stereo)

(V^+=1.5V, f=1kHz)



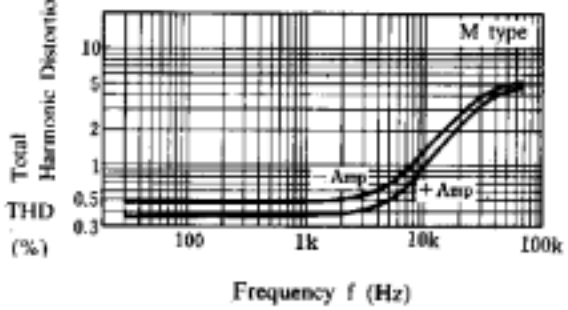
Voltage Gain

(V^+=1.5V, R_L=16Ω, V_{IN}=10mVrms, C=470pF)



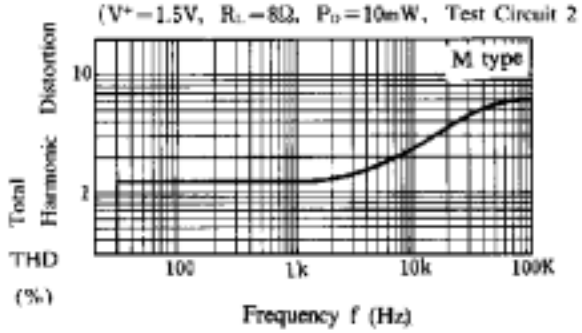
Total Harmonic Distortion (Stereo)

(V^+=1.5V, R_L=16Ω, P_O=1mW, Test Circuit 1



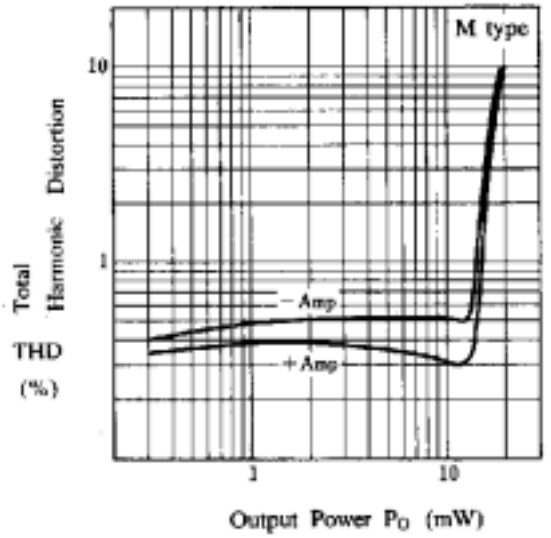
Total Harmonic Distortion (BTL)

(V^+=1.5V, R_L=8Ω, P_O=10mW, Test Circuit 2



Total Harmonic Distortion (Stereo)

(V^+ =1.5V, R_L =16Ω, f=1kHz, Test Circuit 1)



Total Harmonic Distortion (BTL)

(V^+ =1.5V, R_L =8Ω, f=1kHz, Test Circuit 2)