SINGLE SUPPLY DUAL OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJM13404 is single-supply dual operational amplifier, which can operate from 2V supply. The features are low offset voltage, low bias current, high slew-rate, free cross-over distortion through the AB class output stage.

The package lineup is DIP, DMP and others compact, which is SON, so that the NJM13404 is suitable for audio for low voltage operation and any other kind of signal amplifier.

PACKAGE OUTLINE









NJM13404E



FEATURES

Operating Voltage

 $(+2V\sim+14V)$ (1.2V/ μ s typ.)

Slew Rate

(3.5mA typ.)

Operating CurrentBipolar TechnologyPackage Outline

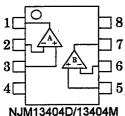
DIP8,DMP8,EMP8,SSOP8,

VSP8.SIP8.SON8(PRELIMINARY)

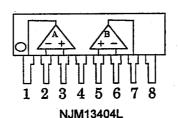




PIN CONFIGURATION



NJM13404D/13404M NJM13404E/13404V/13404R NJM13404x(PPELIMINARY)



PIN FUNCTION

1. A OUTPUT

2. A-INPUT

3. A +INPUT

4. GND

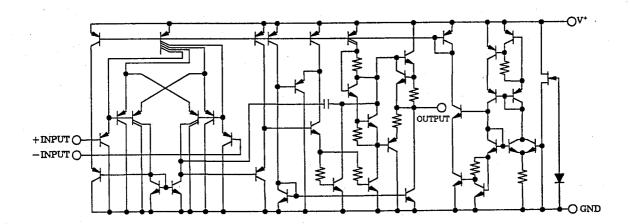
5. B +INPUT

6. B-INPUT

7. B OUTPUT

8. V

■ EQUIVALENT CIRCUIT (1/2 Shown)



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■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT	
Supply Voltage	V*	15	V	
Differential Input Voltage	V _{ID}	14	٧	
Input Voltage	V _{iC}	-0.3~+14	V	
Power Dissipation	Po	(DIP8) 500 (DMP8) 300 (EMP8) 300 (SSOP8) 250 (VSP8) 320 (SIP8) 800 (SON8) U.D	mW	
Operating Temperature Range	Topr	-40~+85	్లి	
Storage Temperature Range	Tstg	−40~+125	ొ	

■ ELECTRICAL CHARACTERISTICS (V+=5V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	Vopr		2	_	14	٧
Input Offset Voltage	V _{IO}	R _s =0Ω		0.5	4	mV
Input Offset Current	110		_	5	50	nA
Input Bias Current	l _B		-	25	150	nA
Large Signal Voltage Gain	Av	R _L ≧2kΩ	88	100		dB
Maximum Output Voltage Swing	Vom	$R_L=2k\Omega$	4.0	4.2		V
Input Common Mode Voltage Range	Vicm		0~3.5	_	_	V
Common Mode Rejection Ratio	CMR		70	90		dB
Supply Voltage Rejection Ratio	SVR		80	94	_	dB
Output Source Current	ISOURCE	V _{IN} ⁺ =1V,V _{IN} ⁻ =0V	20	35		mA
Output Sink Current	ISINK	$V_{1N}^{+}=0V, V_{1N}^{-}=1V$	10	30		mA
Operating Current	Icc	R _L =∞	-	2.0	3.5	mA
Slew Rate	SR	$V^{\prime}/V^{-}=\pm 2.5V$, R _L =2k Ω ,A _V =0dB,f=1kHz	_	1.2	_ ,	V/μs
Unity Gain Bandwidth	f _T	$R_L=2k\Omega$		2.0	_	MHz
Total Harmonic Distortion	THD	R _L =2k Ω ,A _V =40dB, f=20kHz,V _O =1.5Vrms	_	0.2	_	%

NJM13404

MEMO

[CAUTION]
The specifications on this databook are only given for information , without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.