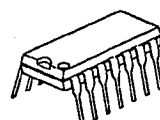


SINGLE SUPPLY QUAD AMPLIFIER

■ GENERAL DESCRIPTION

The NJM12902 is single-supply quad operational amplifier, which can operate from 3V supply. The features are low offset voltage, low bias current, and drive TTL or DTL circuit directly. The package lineup is DIP, DMP and others compact, which is SON, so that the NJM12902 is suitable for audio for low voltage operation and any other kind of signal amplifier.

■ PACKAGE OUTLINE



NJM12902D1



NJM12902M



NJM12902E



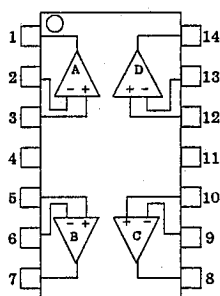
NJM12902V

■ FEATURES

- Operating Voltage (+2V~+14V)
- Input Offset Voltage (5mV max.)
- Slew Rate (0.7V/μs typ.)
- Operating Current (1.0mA typ.)
- Bipolar Technology
- Package Outline

DIP14,DMP14,EMP14,SSOP14,SON14(PRELIMINARY)

■ PIN CONFIGURATION

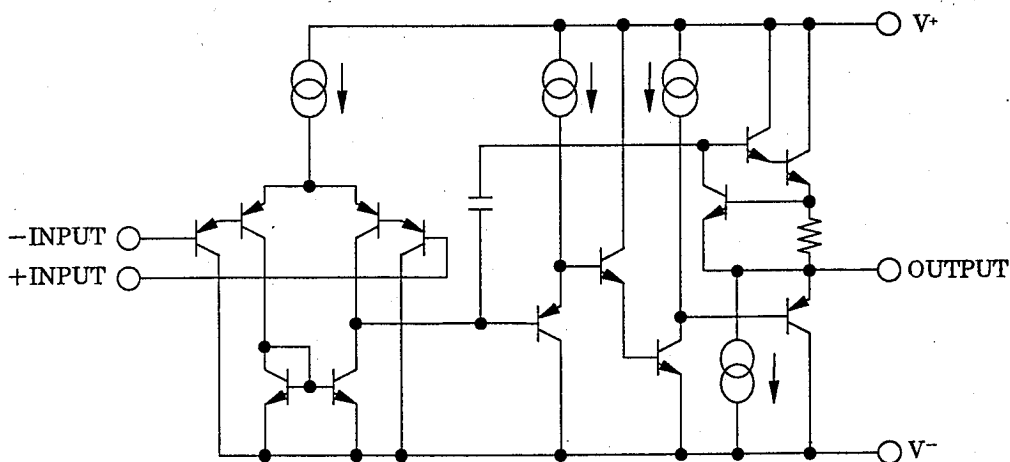


NJM12902D1/12902M
NJM12902E/12902V
NJM12902x(PRELIMINARY)

PIN FUNCTION

- | | |
|-------------------|--------------|
| 1. A OUTPUT | 8. C OUTPUT |
| 2. A -INPUT | 9. C -INPUT |
| 3. A +INPUT | 10. C +INPUT |
| 4. V ⁺ | 11. GND |
| 5. B +INPUT | 12. D +INPUT |
| 6. B -INPUT | 13. D -INPUT |
| 7. B OUTPUT | 14. D OUTPUT |

■ EQUIVALENT CIRCUIT (1/4 Shown)



■ ABSOLUTE MAXIMUM RATING

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	15	V
Differential Input Voltage	V _{ID}	14	V
Input Voltage	V _{IC}	-0.3~+14	V
Power Dissipation	P _D	(DIP14) 700 (DMP14) 300 (EMP14) 300 (SSOP14) 300 (SON14) U.D.	mW
Operating Temperature Range	Topr	-40~+85	°C
Storage Temperature	Tstg	-50~+125	°C

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	Vopr		2	—	14	V
Input Offset Voltage	V _{IO}	R _S =0Ω	—	1	5	mV
Input Offset Current	I _{IO}		—	5	50	nA
Input Bias Current	I _B		—	20	150	nA
Large Signal Voltage Gain	A _V	R _L ≥2kΩ	—	100	—	dB
Maximum Output Voltage Swing	V _{OM}	R _L =2kΩ	3.5	—	—	V
Input Common Mode Voltage Range	V _{ICM}		0~3.5	—	—	V
Common Mode Rejection Ratio	CMR		—	85	—	dB
Supply Voltage Rejection Ratio	SVR		—	100	—	dB
Output Source Current	I _{SOURCE}	V _{IN} ⁺ =1V, V _{IN} ⁻ =0V	20	40	—	mA
Output Sink Current	I _{SINK}	V _{IN} ⁺ =0V, V _{IN} ⁻ =1V	8	30	—	mA
Channel Separation	CS	f=1k~20kHz	—	120	—	dB
Operating Current	I _{CC}	R _L =∞	—	1.0	2.0	mA
Slew Rate	SR	V ⁺ /V ⁻ =±2.5V, R _L =2kΩ, A _V =0dB, f=1kHz	—	0.7	—	V/μs
Gain Bandwidth Product	GB		—	1.5	—	MHz

MEMO

[CAUTION]

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