

NJM2902

The NJM2902 consists of four independent high-gain operational amplifiers that are designed for single-supply operation. Operation from split power supplies is also possible and the low power supply drain is independent of the magnitude of the power supply voltage.

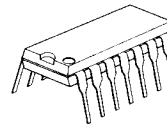
Used with a dual supply the circuit will operate over a wide range of supply voltages. However, a large amount of crossover distortion may occur with loads to ground. An external current-sinking resistor to $-V_S$ will reduce crossover distortion. There is no crossover distortion problem in single-supply operation if the load is direct-coupled to ground.

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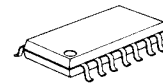
Absolute Maximum Ratings (Ta=25°C)

Supply Voltage	$V^+ (V^+ / V^-)$	32V (or $\pm 16V$)
Differential Input Voltage	V_{ID}	32V
Input Voltage	V_I	-0.3~+32V
Power Dissipation	P_D (N-Type)	570mW
	(M-Type)	300mW
Operating Temperature Range	T_{opr}	-40~+85°C
Storage Temperature Range	T_{sig}	-50~+125°C

Package Outline



NJM2902N

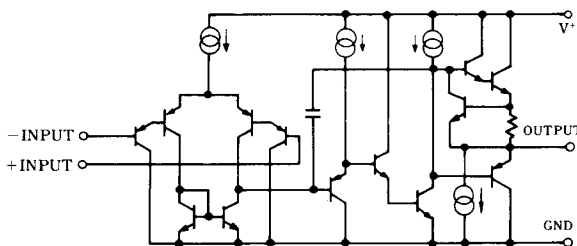


NJM2902M

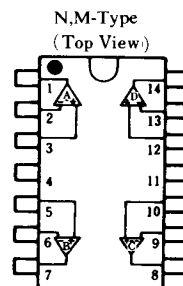
Electrical Characteristics (Ta=25°C, V⁺=5V)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Offset Voltage	V_{IO}	$R_S=0\Omega$	—	2	10	mV
Input Offset Current	I_{IO}	$I_{IN}^+ = I_{IN}^-$	—	5	50	nA
Input Bias Current	I_B	I_{IN}^+ or I_{IN}^-	—	45	500	nA
Large Signal Voltage Gain	A_V	$R_L \geq 2k\Omega$	—	100	—	V/mV
Maximum Output Voltage Swing	V_{OPP}	$R_L=2k\Omega$	3.5	—	—	V _{PP}
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	20	—	mA
Channel Separation	CS	$f=1k\sim 20kHz$, Input Referred	—	120	—	dB
Supply Current	I_{CC}	$R_L = \infty$	—	0.8	2	mA
Slew Rate	SR		—	0.5	—	V/ μs
Gain Bandwidth Product	GB		—	0.5	—	MHz

Equivalent Circuit (1/4 Shown)



Connection Diagram

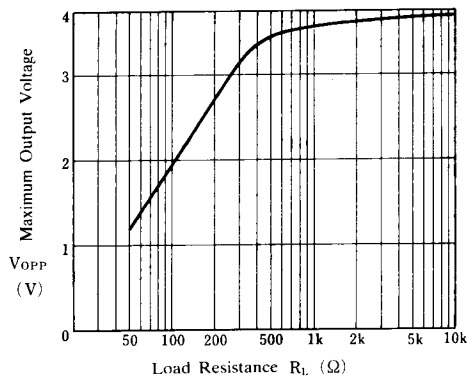


PIN FUNCTION

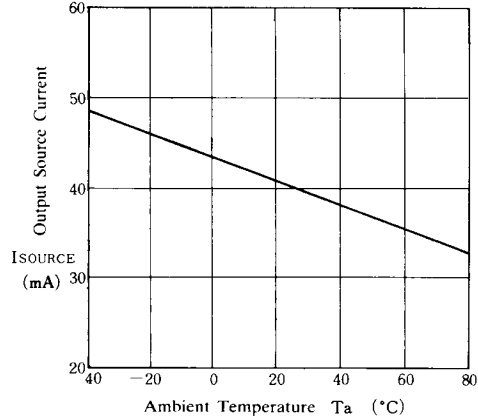
1. A OUTPUT	8. C OUTPUT
2. A -INPUT	9. C -INPUT
3. A +INPUT	10. C +INPUT
4. V ⁺	11. GROUND
5. B +INPUT	12. D +INPUT
6. B -INPUT	13. D -INPUT
7. B OUTPUT	14. D OUTPUT

■ Typical Characteristics

Maximum Output Voltage Swing
($V^+ = 5\text{V}$)

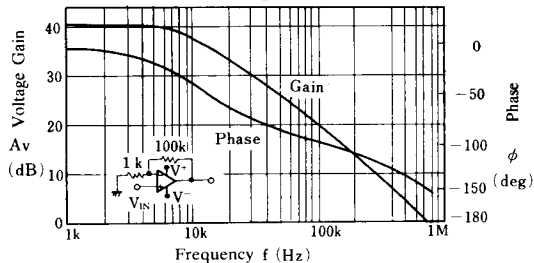


Output Source Current ($V^+ = 5\text{V}$)



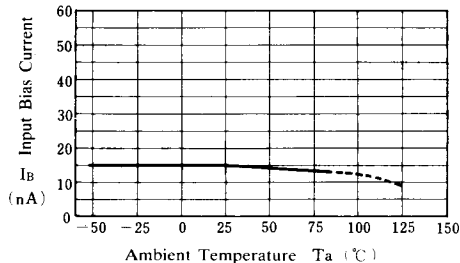
Voltage Gain, Phase vs. Frequency

($V^+/V^- = \pm 15\text{V}$, $R_L = \infty$, $T_a = 25^{\circ}\text{C}$)



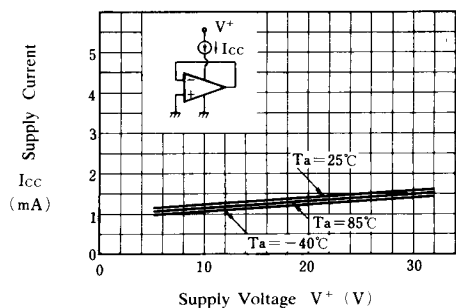
Input Bias Current

($V^+ = 5 \sim 30\text{V}$)

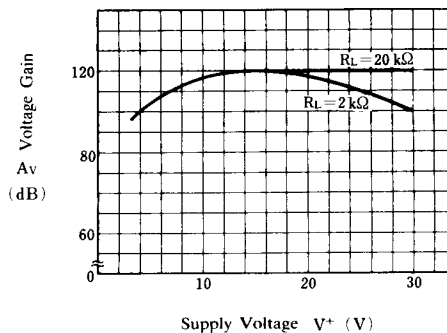


■ Typical Characteristics

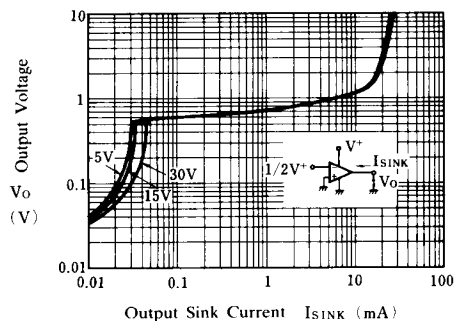
Supply Current vs. Supply Voltage



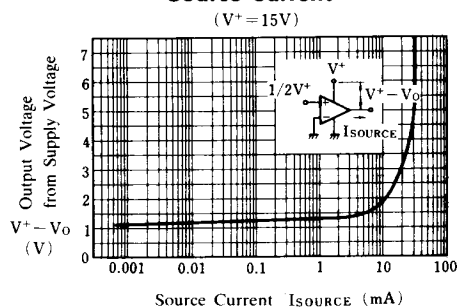
Voltage Gain vs. Supply Voltage



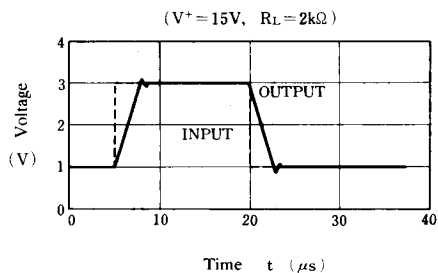
Output Sink Current



Source Current



Pulse Response



Maximum Output Voltage Swing

