

SINGLE GENERAL PURPOSE OPERATIONAL AMPLIFIER

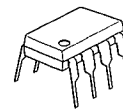
■ GENERAL DESCRIPTION

The NJM741 is a high performance Monolithic Operational Amplifier constructed using the New JRC Planar epitaxial process. It is intended for a wide range of analog applications. High common mode voltage range and absence of latch-up tendencies make the NJM741 ideal for use as a voltage follower. The high gain and wide range of operating voltage provides superior performance in integrator, summing amplifier, and general feedback applications.

■ FEATURES

- Operating Voltage (+3V ~ +18V)
- Single Supply
- With V_{IO} Trim Terminal
- Package Outline DIP8, DMP8, (SSOP8)
- Bipolar Technology

■ PACKAGE OUTLINE



NJM741D

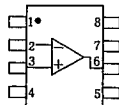


NJM741M



NJM741V

■ PIN CONFIGURATION

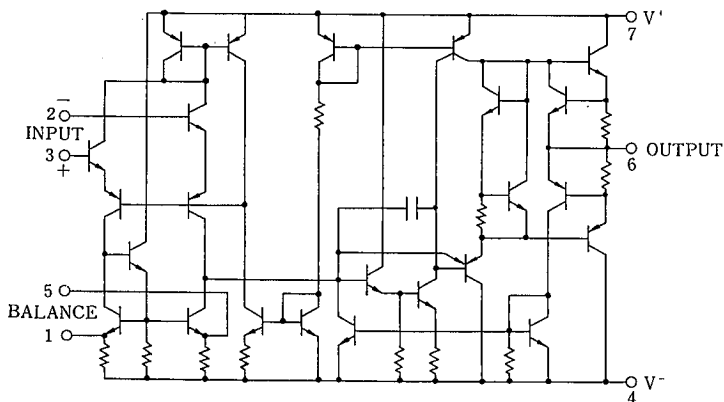


NJM741D
NJM741M
NJM741V

PIN FUNCTION

1. V_{OS} Trim
2. - Input
3. + Input
4. V^-
5. V_{OS} Trim
6. Output
7. V^+
8. NC

■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺ /V ⁻	±18	V
Input Voltage	V _{IC}	±15 (note)	V
Differential Input Voltage	V _{ID}	±30	V
Power Dissipation	P _D	(DIP8) 500	mW
		(DMP8) 300	mW
		(SSOP8) 300	mW
Operating Temperature Range	T _{opr}	-40~+85	°C
Storage Temperature Range	T _{stg}	-40~+125	°C

(note) For supply voltage less than ±15V, the absolute maximum input voltage is equal to the supply voltage.

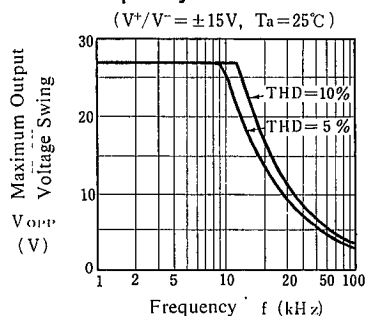
■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, V⁺/V⁻=±15V)

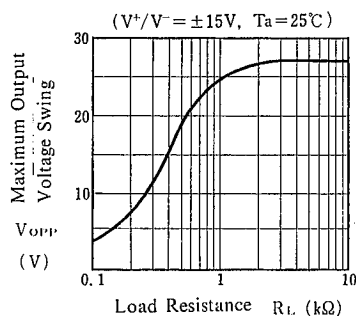
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V _{IO}	R _S ≤ 10kΩ	—	2.0	6.0	mV
Input Offset Current	I _{IO}		—	5	200	nA
Input Bias Current	I _{IB}		—	30	500	nA
Input Resistance	R _{IN}		0.3	2.0	—	MΩ
Large-signal Voltage Gain	A _V	R _L ≥ 2kΩ, V _O = ±10V	86	110	—	dB
Maximum Output Voltage Swing 1	V _{OM1}	R _L ≥ 10kΩ	±12	±14	—	V
Maximum Output Voltage Swing 2	V _{OM2}	R _L ≥ 2kΩ	±10	±13	—	V
Input Common Mode Voltage Range	V _{ICM}		±12	±13	—	V
Common Mode Rejection Ratio	CMR	R _S ≤ 10kΩ	70	100	—	dB
Supply Voltage Rejection Ratio	SVR	R _S ≤ 10kΩ	76.5	100	—	dB ⁻¹
Operating Current	I _{CC}		—	1.7	2.8	mA
Slew Rate	SR	R _L ≥ 2kΩ	—	0.5	—	V/μs
Transient Response (Unity Gain) (Rise Time)	t _r	V _{IN} = 20mV, R _L = 2kΩ, C _L = 100pF	—	0.3	—	μs
Transient Response (Unity Gain) (Overshoot)	t _d	V _{IN} = 20mV, R _L = 2kΩ, C _L = 100pF	—	5.0	—	%

■ TYPICAL CHARACTERISTICS

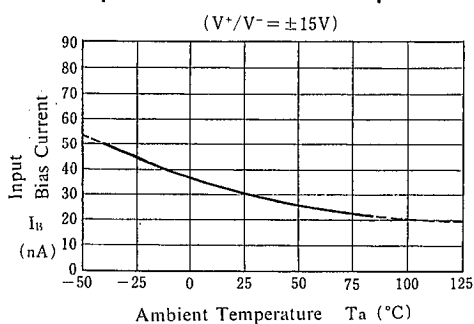
Maximum Output Voltage Swing
vs. Frequency



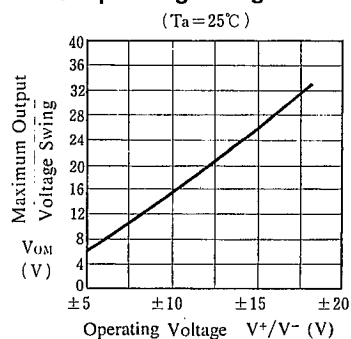
Maximum Output Voltage Swing
vs. Load Resistance



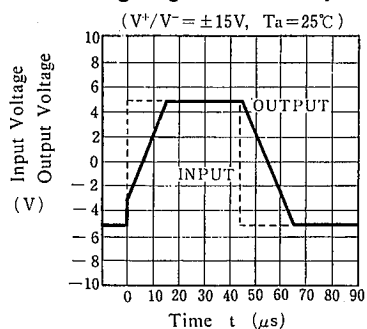
Input Bias Current vs. Temperature



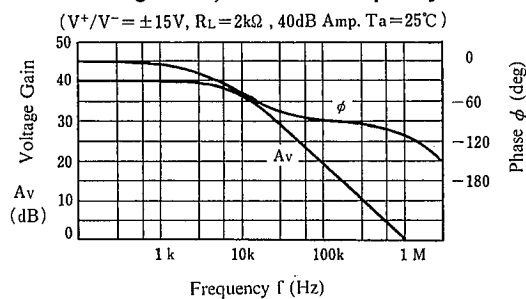
Maximum Output Voltage Swing
vs. Operating Voltage



Voltage-follower
Large-signal Pulse Response



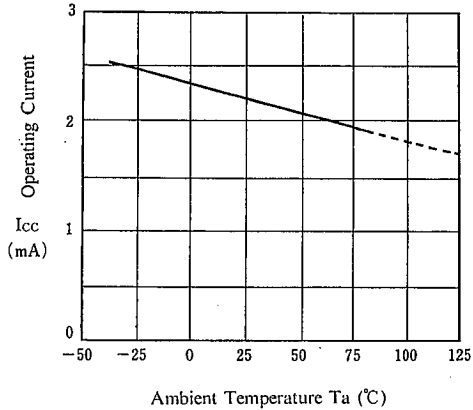
Voltage Gain, Phase vs. Frequency



■ TYPICAL CHARACTERISTICS

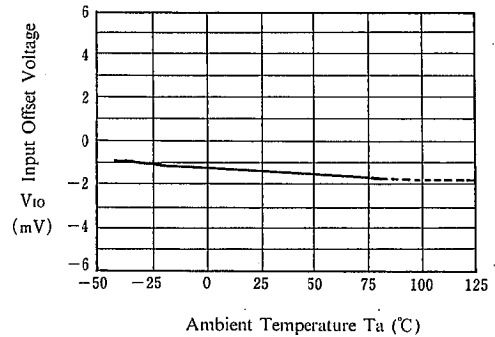
Operating Current vs. Temperature

($V^+/V^- = \pm 15\text{ V}$)



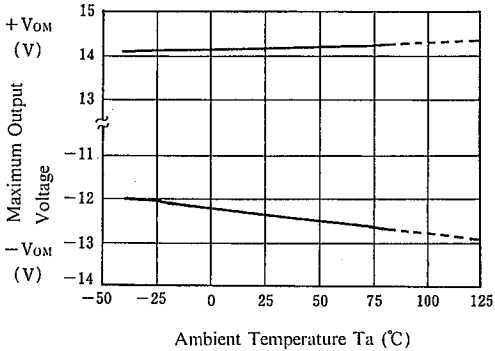
Input Offset Voltage vs. Temperature

($V^+/V^- = \pm 15\text{ V}$)

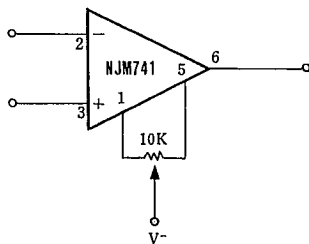


Maximum Output Voltage vs. Temperature

($V^+/V^- = \pm 15\text{ V}$, $R_L = 10\text{ k}\Omega$)



■ OFFSET ADJUSTMENT CIRCUIT



MEMO

[CAUTION]

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