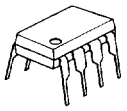
SINGLE GENERAL PURPOSE OPERATIONAL AMPLIFIER

■ 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.

■ PACKAGE OUTLINE



NJM741D

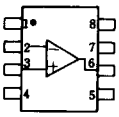
NJM741M

NJM741V

■ FEATURES

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

■ PIN CONFIGURATION

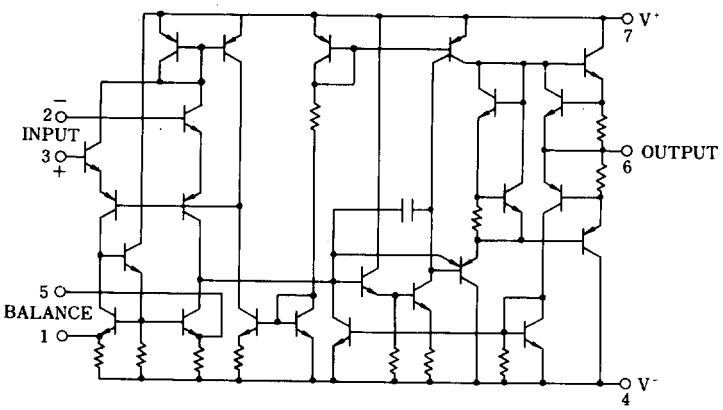


NJM741D
NJM741M
NJM741V

PIN FUNCITON

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℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+/V^-	±18	V
Input Voltage	V_I	±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}	−20~+75	℃
Storage Temperature Range	T_{stg}	−40~+125	℃

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

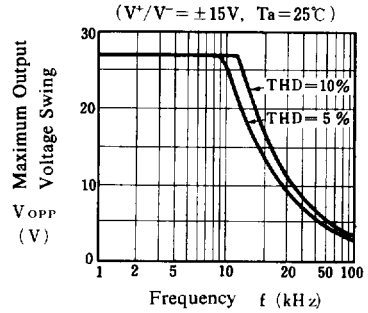
■ ELECTRICAL CHARACTERISTICS

: (Ta =25℃, V^+/V^- =±15V)

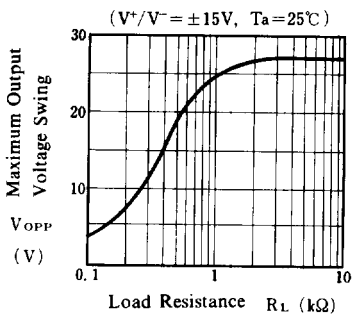
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	$R_S \leq 10k\Omega$	—	2.0	6.0	mV
Input Offset Current	I_{IO}		—	5	200	nA
Input Bias Current	I_{IB}		—	30	500	nA
Input Resistance	R_{IN}		0.3	2.0	—	MΩ
Large-signal Voltage Gain	A_V	$R_L \geq 2k\Omega$, $V_O = \pm 10V$	86	110	—	dB
Maximum Output Voltage Swing I	V_{OM1}	$R_L \geq 10k\Omega$	±12	±14	—	V
Maximum Output Voltage Swing II	V_{OM2}	$R_L \geq 2k\Omega$	±10	±13	—	V
Input Common Mode Voltage Range	V_{ICM}		±12	±13	—	V
Voltage Rejection Ratio	CMR	$R_S \leq 10k\Omega$	70	100	—	dB
Supply Voltage Rejection Ratio	SVR	$R_S \leq 10k\Omega$	76.5	100	—	dB
Operating Current	I_{CC}		—	1.7	2.8	mA
Slew Rate	SR	$R_L \geq 2k\Omega$	—	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_o	V_{IN} =20mV, R_L=2kΩ, C_L=100pF	—	5.0	—	%

■ TYPICAL CHARACTERISTICS

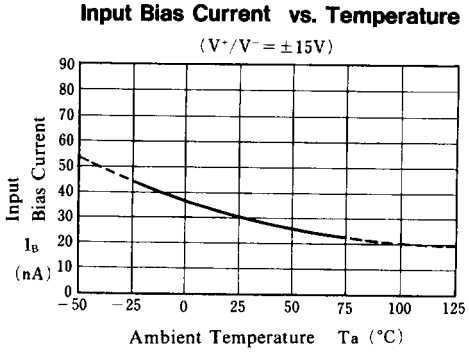
Maximum Output Voltage Swing vs. Frequency



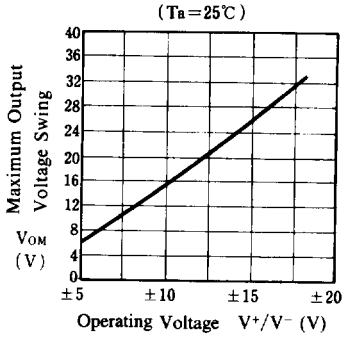
Maximum Output Voltage Swing vs. Load Resistance



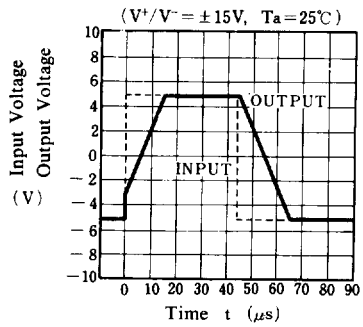
Input Bias Current vs. Temperature



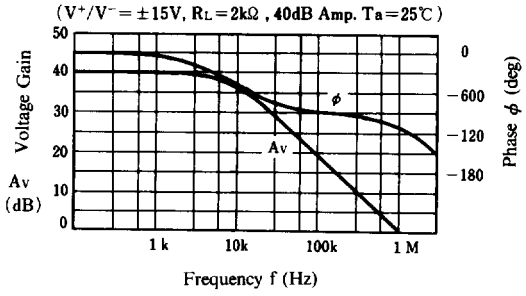
Maximum Output Voltage Swing vs. Operating Voltage



Voltage-follower Large-signal Pulse Response



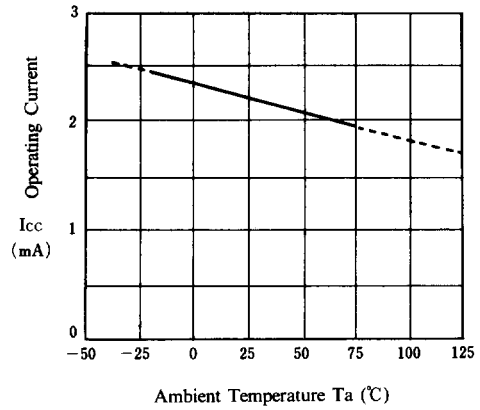
Voltage Gain, Phase vs. Frequency



■ TYPICAL CHARACTERISTICS

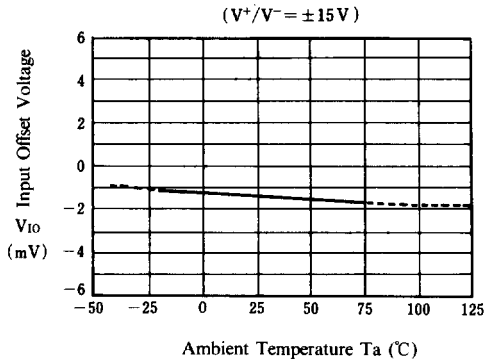
Operating Current vs. Temperature

($V^+/V^-=\pm15V$)



Input Offset Voltage vs. Temperature

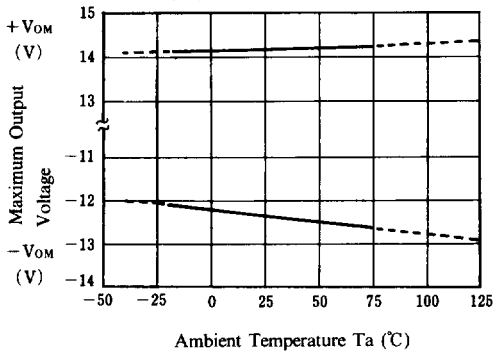
($V^+/V^-=\pm15V$)



4

Maximum Output Voltage vs. Temperature

($V^+/V^-=\pm15V$, $R_L=10k\Omega$)



■ OFFSET ADJUSTMENT CIRCUIT