LOW-NOISE DUAL OPERATIONAL AMPLIFIER

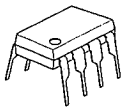
■ GENERAL DESCRIPTION

The NJM2041 is a bipolar operational amplifier which is designed as low noise version of the NJM4558 with high output current and fast slew rate (3V/ μs) and wide unity gain bandwidth (7MHz) constructed using New JRC Planar epitaxial process.

■ FEATURES

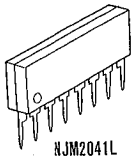
- Operating Voltage (±4V～±22V)
- High Onput Current (25mA.)
- Slew Rate (3V/ μs typ.)
- Unity Gain Bandwidth (7MHz typ.)
- Package Outline DIP8, DMP8, SIP8
- Bipolar Technology

■ PACKAGE OUTLINE



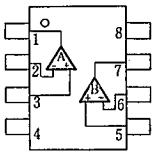
NJM2041D

NJM2041M

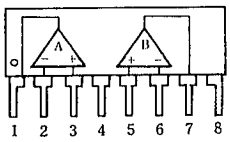


NJM2041L

■ PIN CONFIGURATION



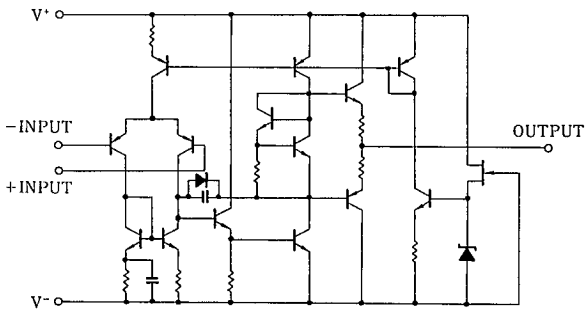
NJM2041D
NJM2041M



NJM2041L

PIN FUNCITON
1. A OUTPUT
2. A−INPUT
3. A+INPUT
4. V⁻
5. B+INPUT
6. B−INPUT
7. B OUTPUT
8. V⁺

■ EQUIVALENT CIRCUIT (1/2 Shown)



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+/V^-	±22	V
Differential Input Voltage	V_{ID}	±30	V
Input Voltage	V_{IC}	±15 (note)	V
Power Dissipation	P_D	(DIP8) 500	mW
		(DIM8) 300	mW
		(SIP8) 800	mW
Operating Temperature Range	T_{opr}	−20～+75	℃
Storage Temperature Range	T_{stg}	−40～+125	℃

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

■ ELECTRICAL CHARACTERISTICS

(Ta =25℃, V^+/V^-=±15V)

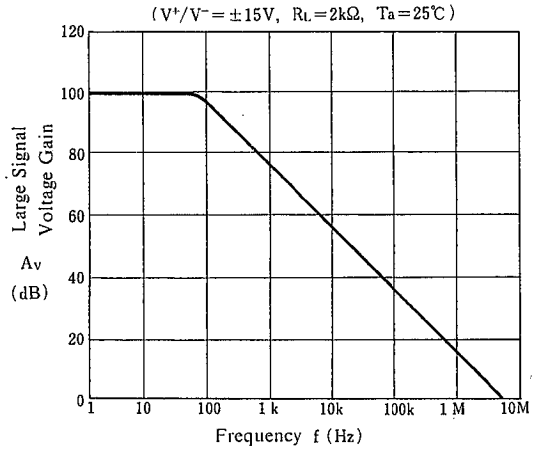
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	R_S≦10kΩ	—	0.3	3	mV
Input Offset Current	I_{IO}		—	10	200	nA
Input Bias Current	I_B		—	200	500	nA
Input Resistance	R_{IN}		50	200	—	kΩ
Large signal Voltage Gain	A_V	R_L≧2kΩ, V_O=±10V	86	110	—	dB
Maximum Output Voltage Swing 1	V_{OM1}	R_L≧10kΩ	±12	±14	—	V
Maximum Output Voltage Swing 2	V_{OM2}	I_O=25mA	±10	±11.5	—	V
Input Common Mode Voltage Range	V_{ICM}		±12	±14	—	V
Common Mode Rejection Ratio	CMR	R_S≦10kΩ	70	100	—	dB
Supply Voltage Rejection Ratio	SVR	R_S≦10kΩ	76	100	—	dB
Operating Current	I_{CC}		—	6	8	mA
Slew Rate	SR		—	3	—	V/μs
Gain Bandwidth Product	GB		—	7	—	MHz
Equivalent Input Noise Voltage	V_{NI}	FLAT+JISA R_S=300Ω	—	0.48	0.61	μVrms

(note) : New JRC's general selected products D-rank are also prepared for the noise standard (R_S=2.2kΩ,RIAA, V_{NI}=1.4μV Max.)

■ TYPICAL CHARACTERISTICS

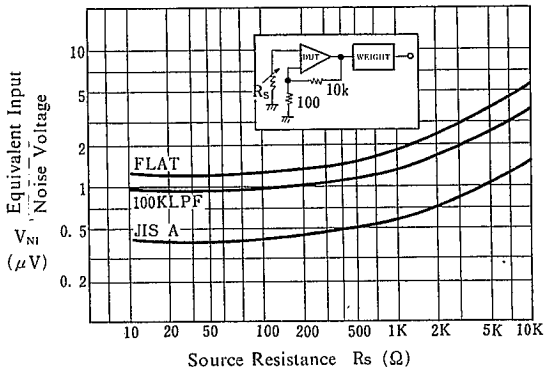
Lange Signal Voltage Gain vs. Frequency

(V⁺/V⁻=±15V, RL=2kΩ, Ta=25℃)



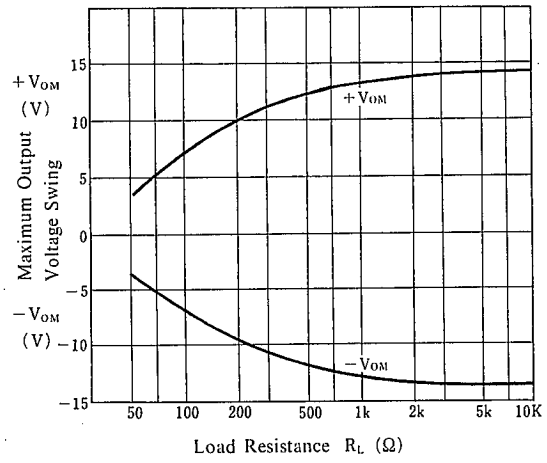
Equivalent Input Noise Voltage

(V⁺/V⁻=±15V, Ta=25℃)



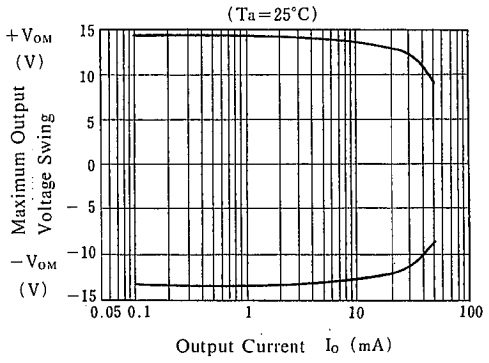
Maximum Output Voltage Swing vs. Load Resistance

(V⁺/V⁻=±15V, Ta=25℃)



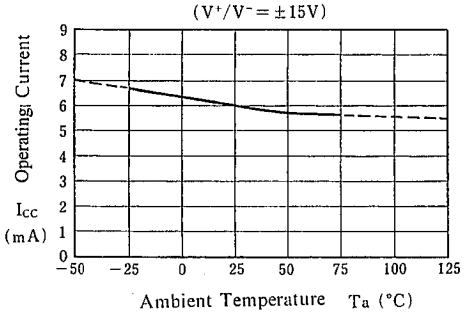
Maximum Output Voltage Swing vs. Output Current

(Ta=25°C)



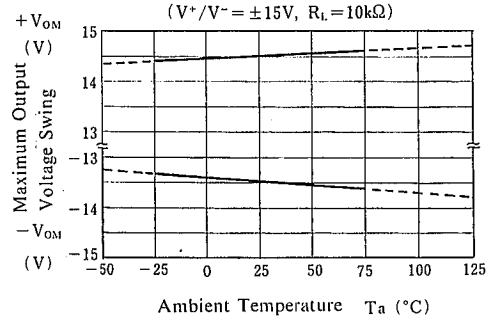
Operating Current vs. Temperature

(V⁺/V⁻=±15V)



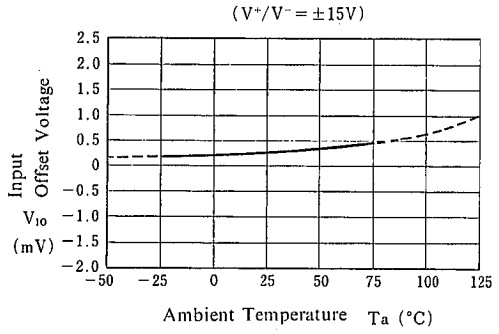
Maximum Output Voltage Swing vs. Temperature

(V⁺/V⁻=±15V, RL=10kΩ)

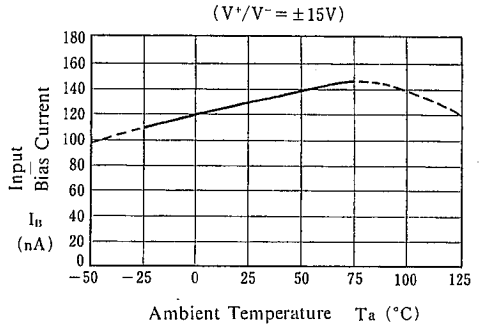


■ TYPICAL CHARACTERISTICS

Input Offset Voltage vs. Temperature

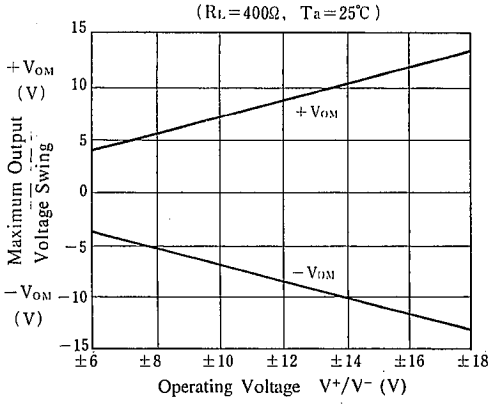


Input Bias Current vs. Temperature

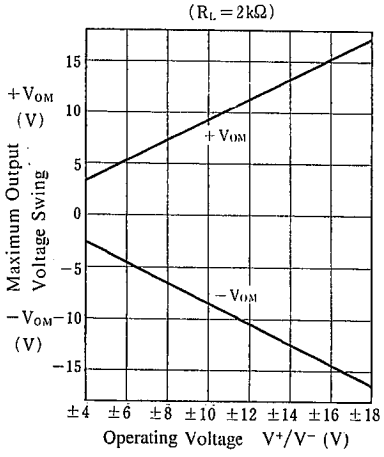


4

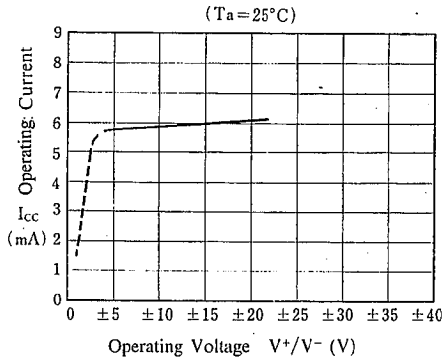
Mixiumum Output Voltage Swing vs. Operating Voltage



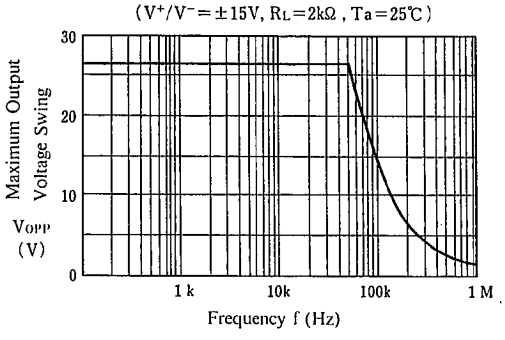
Mixiumum Output Voltage Swing vs. Operating Voltage



Operating Current vs. Operating Voltage



Maximum Output Voltage Swing vs. Frequency



MEMO