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New Japan Radio Co.,Ltd.

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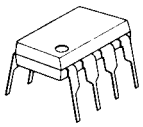
LOW-NOISE DUAL PRE-AMPLIFIER

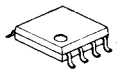
■ GENERAL DESCRIPTION

The NJM2043 is a bipolar operational amplifier which is designed as low noise version of the NJM4558 with high output current and fast slew rate (6V/μs) and wide unity gain bandwidth (14MHz) constructed using New JRC Planar epitaxial process.

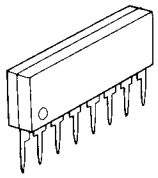
■ PACKAGE OUTLINE



NJM2043D



NJM2043M

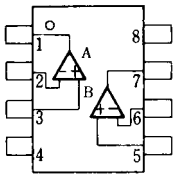


NJM2043L

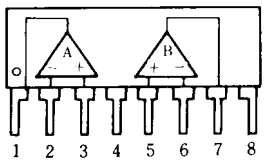
■ FEATURES

- Operating Voltage (±4V~±22V)
- High Output Current (25mA.)
- Slew Rate (6V/μs typ.)
- Unity Gain Bandwidth (14MHz typ.)
- Package Outline DIP8,DMP8,SIP8
- Bipolar Technology

■ PIN CONFIGURATION



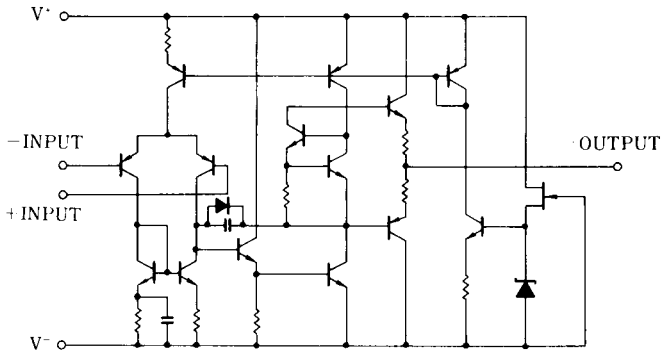
NJM2043D
NJM2043M



NJM2043L

PIN FUNCTION
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˚C)

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 (DMP8) 300 (SIP8) 800	mW
Operating Temperature Range	T_{opr}	-20~+75	˚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

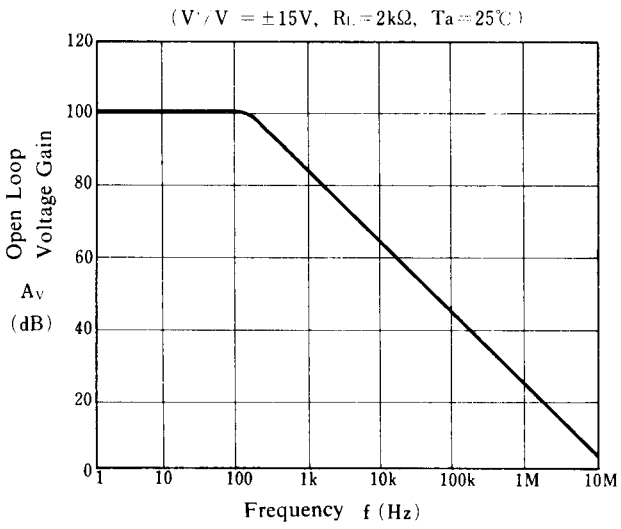
(Ta=25˚C,V^+/V^-=±15V)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	R_S≦10kΩ	-	0.3	3	mV
Input Offset Current	I_{IO}		-	10	200	nA
Input Bias Current	I_B		-	400	1000	nA
Input Resistance	R_{IN}		30	100	-	kΩ
Large signal Voltage Gain	A_V	R_L≥2kΩ,V_O=±10V	86	100	-	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		-	6	-	V/μs
Gain Bandwidth Product	GB		-	14	-	MHz
Equivalent Input Noise Voltage	V_{NI}	FLAT+JISA R_S=300Ω	-	0.4	0.51	μVrms

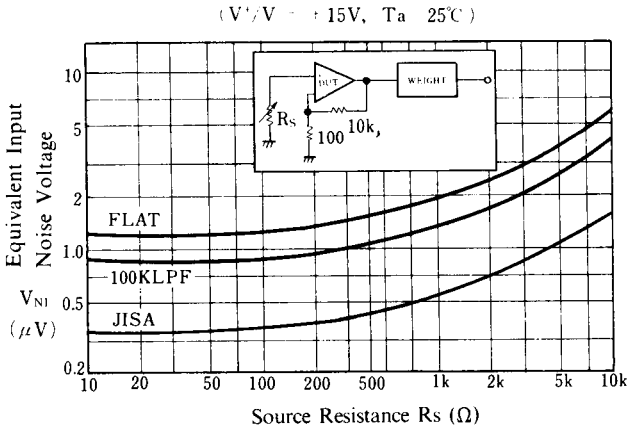
(note1) Closed loop gain should be more than 20dB at use.
(note2) New JRC's general selected products D rank are also prepared for the noise standard (R_S=2.2kΩ,RIAA,V_{NI}=1.4μV Max.)

■ TYPICAL CHARACTERISTICS

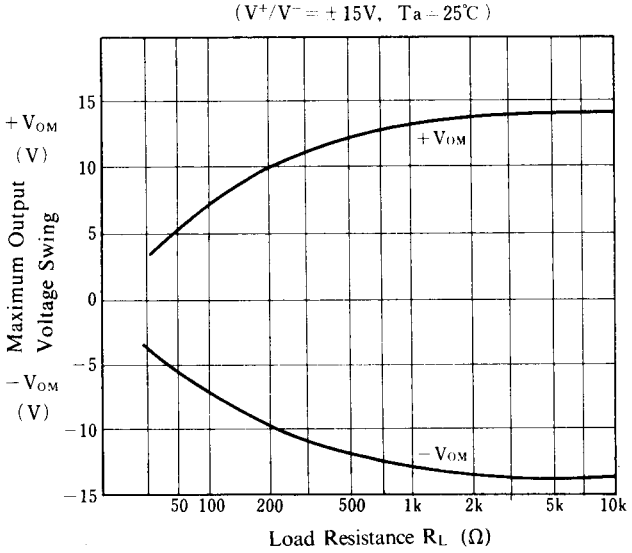
Open Loop Voltage Gain vs. Frequency



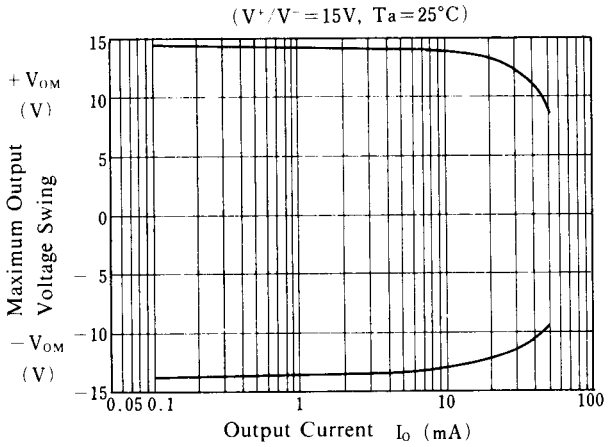
Equivalent Input Noise Voltage



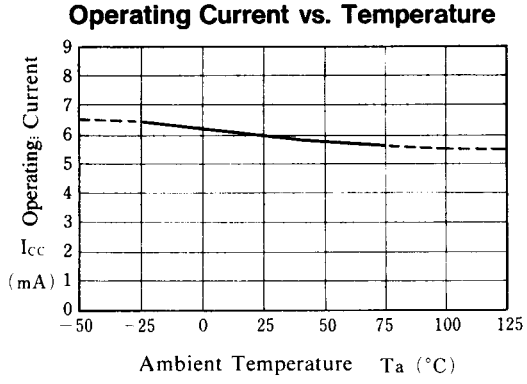
Maximum Output Voltage Swing vs. Load Resistance



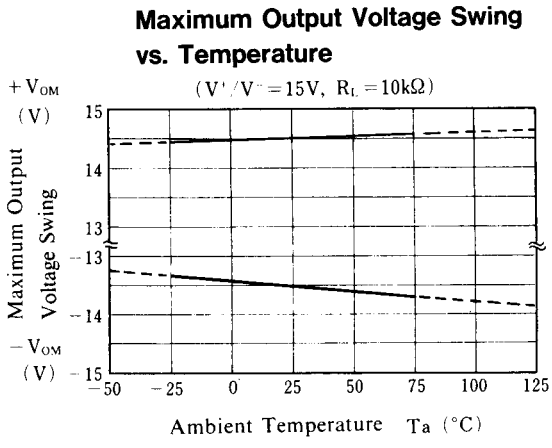
Maximum Output Voltage Swing vs. Output Current



Operating Current vs. Temperature

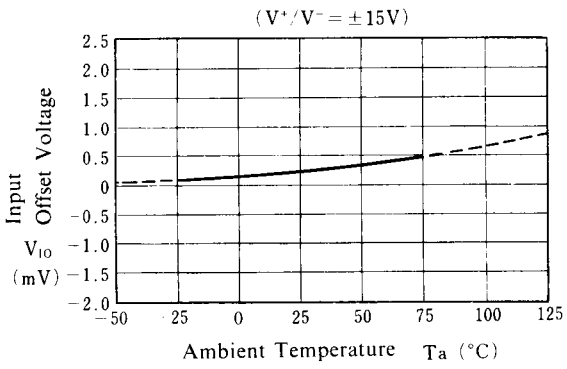


Maximum Output Voltage Swing vs. Temperature

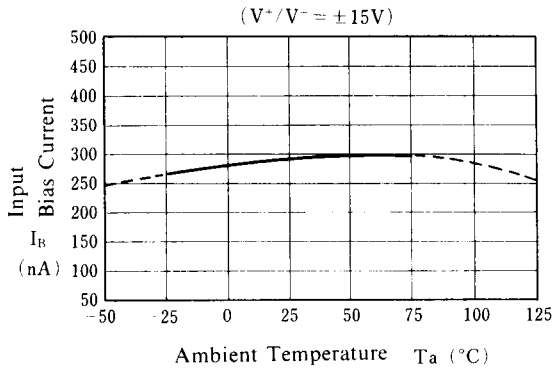


■ TYPICAL CHARACTERISTICS

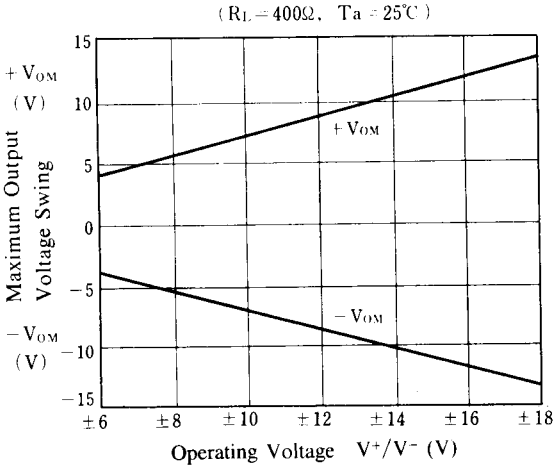
Input Offset Voltage vs. Temperature



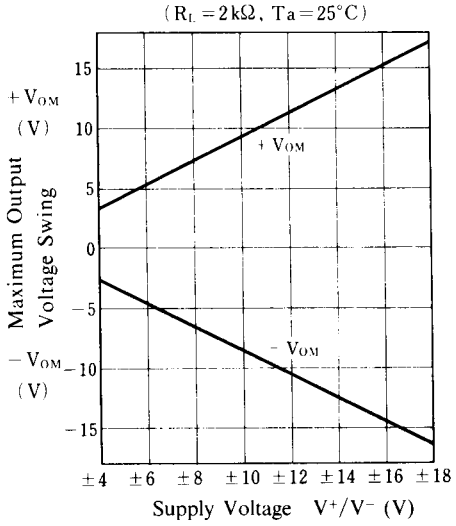
Input Bias Current vs. Temperature



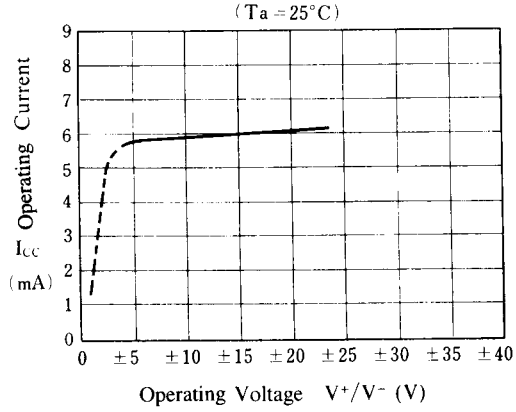
Maximum Output Voltage Swing vs. Operating Voltage



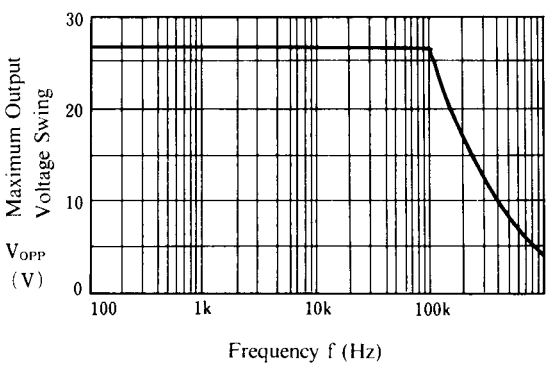
Maximum Output Voltage Swing vs. Supply Voltage



Operating Current vs. Operating Voltage



Maximum Output Voltage Swing vs. Frequency



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