



DUAL SINGLE-SUPPLY OPERATIONAL AMPLIFIER

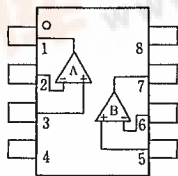
■ GENERAL DESCRIPTION

NJM 2119 is a ultra-low input offset voltage and bias current, low drift and single supply dual operational amplifier. NJM2119 is suitable for a high accurated instrumental amplifier and sensor amplifier.

■ FEATURES

- Single Supply
- Operating Voltage (+4V ~ +36V)
- Low Input Offset Voltage (90 μ V Typ.)
- Low Input Bias Current (18nA Typ.)
- Low Input Offset Voltage Drift (4.0 μ V/ $^{\circ}$ C Typ.)
- Package Outline DIP8, DMP8
- Bipolar Technology

■ PIN CONFIGURATION

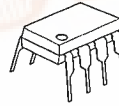


NJM2119D
NJM2119M

PIN FUNCTION

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

■ PACKAGE OUTLINE



NJM2119D



NJM2119M

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V*(V+/V-)	36(±18)	V
Differential Input Voltage	V _{ID}	-0.3~+36	V
Input Voltage	V _{IC}	+36 (note)	V
Power Dissipation	P _D	(DIP8) 700	mW
		(DMP8) 300	mW
Operating Temperature Range	T _{opr}	-30~+85	°C
Storage Temperature Range	T _{stg}	-40~+125	°C

(note) For supply voltage less than ±18V, the absolute maximum input voltage is equal to the supply voltage.

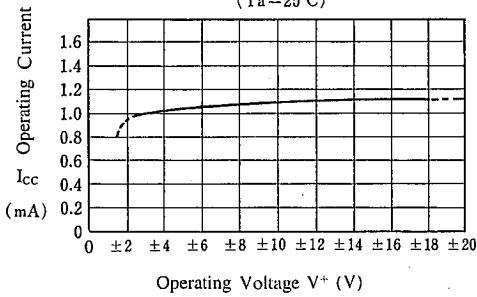
■ ELECTRICAL CHARACTERISTICS

(V+=5.0V, Ta=25±2°C)

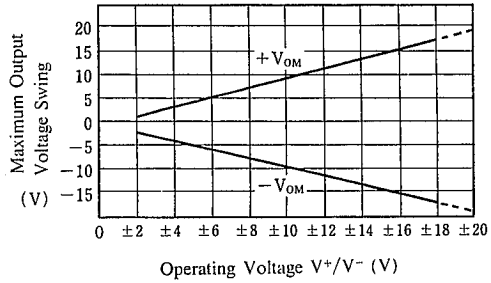
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V _{IO}	R _S ≤ 50Ω	—	90	450	μV
V _{IO} Drift	ΔV _{IO} /ΔT	T _a = -30~+85°C	—	4.0	—	μV/°C
Input Offset Current	I _{IO}		—	0.3	7.0	nA
Input Bias Current	I _B		—	18	50	nA
Operating Current	I _{CC}	R _L = ∞	—	1.0	1.5	mA
Input Common Mode Voltage Range	V _{ICM}		0~3.5	—	—	V
Common Mode Rejection Ratio	CMR		85	100	—	dB
Supply Voltage Rejection Ratio	SVR		85	100	—	dB
Large Signal Voltage Gain	A _V	R _L = 600Ω	90	105	—	dB
Maximum Output Voltage Swing 1	+V _{OM1}	R _L = 600Ω	3.4	4.0	—	V
Maximum Output Voltage Swing 1	-V _{OM1}	R _L = 600Ω	—	5.0	10.0	mV
Maximum Output Voltage Swing 2	-V _{OM2}	I _{SINK} = 1mA	—	220	350	mV
Slew Rate	SR	A _V = 1	—	0.3	—	V/μs
Gain Bandwidth Product	GB		—	1.0	—	MHz

TYPICAL CHARACTERISTICS

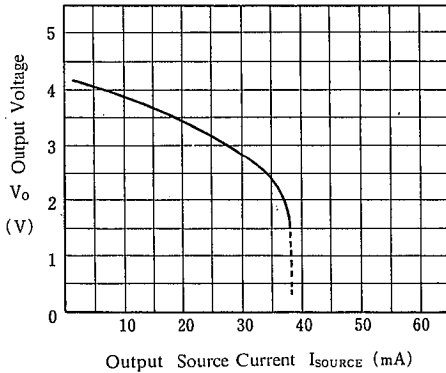
Operating Current vs. Operating Voltage
($T_a=25^\circ\text{C}$)



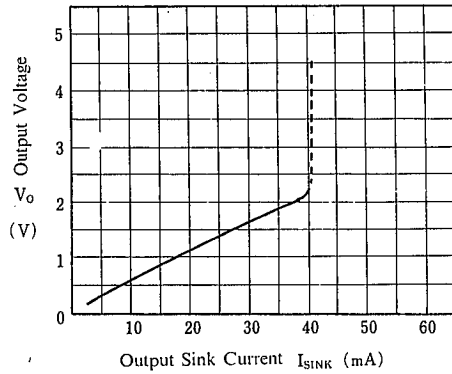
Maximum Output Voltage Swing vs. Operating Voltage
($T_a=25^\circ\text{C}$, $R_L=2\text{k}\Omega$)



Output Source Current
($V^+=5\text{V}$, $T_a=25^\circ\text{C}$)

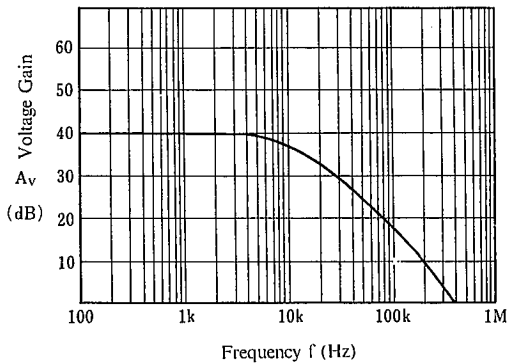


Output Sink Current
($V^+=5\text{V}$, $T_a=25^\circ\text{C}$)



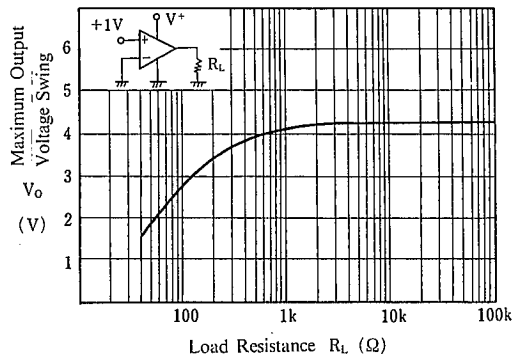
Voltage Gain vs. Frequency

($V^+/V^- = \pm 2.5\text{V}$, $R_L=2\text{k}\Omega$, $A_v=40\text{dB}$, $T_a=25^\circ\text{C}$)

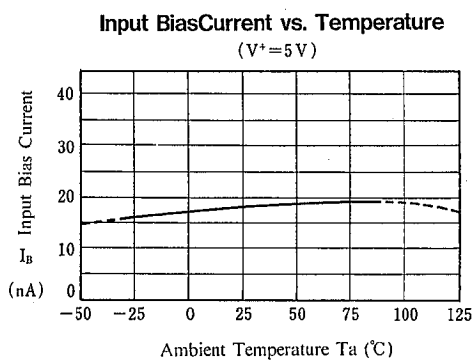
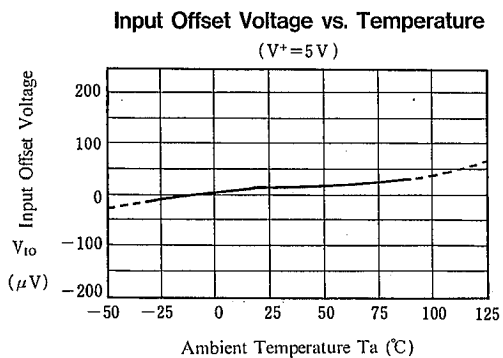
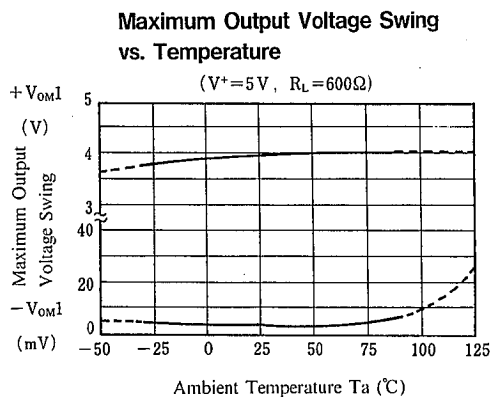
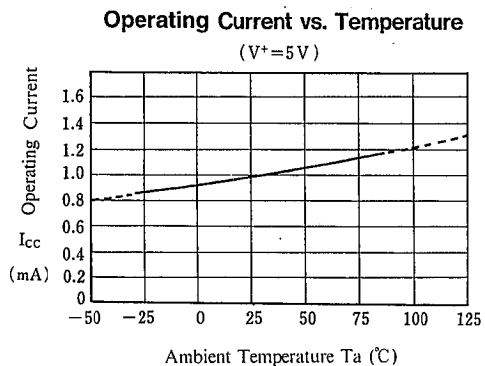


Maximum Output Voltage Swing vs. Load Resistance

($V^+=5\text{V}$, $T_a=25^\circ\text{C}$)



■ TYPICAL CHARACTERISTICS



NJM2119

MEMO

[CAUTION]

The specifications on this databook are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.