

DUAL SINGLE-SUPPLY OPERATIONAL AMPLIFIER

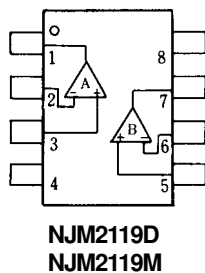
■ GENERAL DESCRIPTION

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

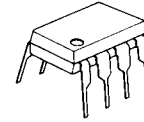
■ FEATURES

- 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



■ PACKAGE OUTLINE



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⁺

NJM2119

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

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

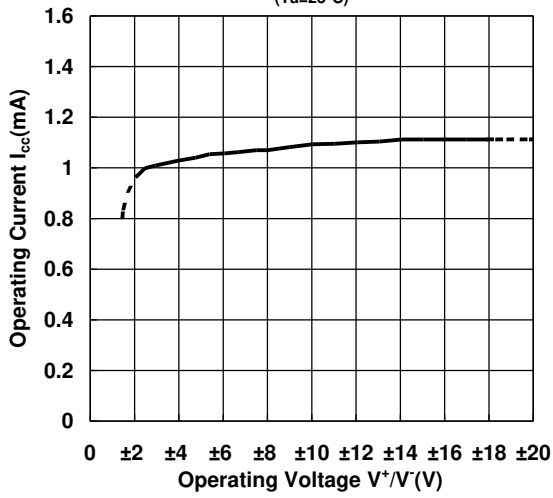
■ ELECTRICAL CHARACTERISTICS

(V⁺=5.0V, Ta=25±2°C)

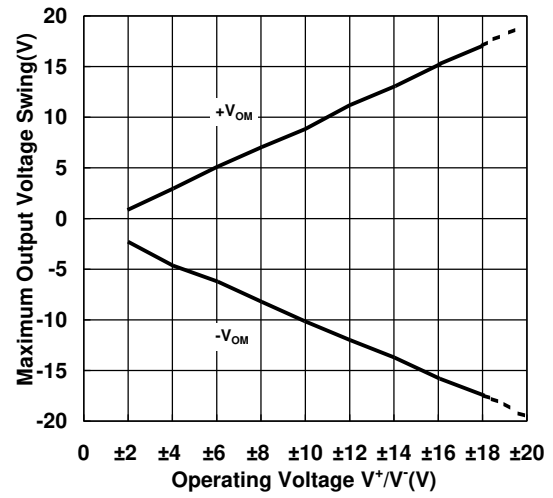
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V _{IO}	R _S ≤50Ω	-	90	450	μV
V _{IO} Drift	ΔV _{IO} /ΔT	Ta=-30~+85°C	-	4.0	-	μV/°C
Input Offset Current	I _{IO}		-	0.3	7.0	nA
Input Bias Current	I _B		-	18	50	nA
Operating Current	I _{CC}	R _L =∞	-	1.0	1.5	mA
Input Common Mode 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

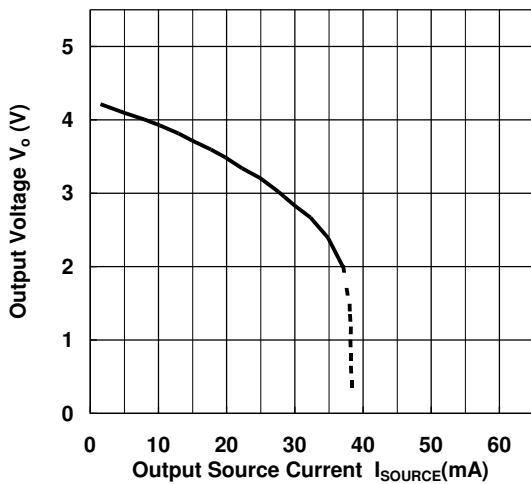
Operating Current vs. Operating Voltage
($T_a=25^\circ\text{C}$)



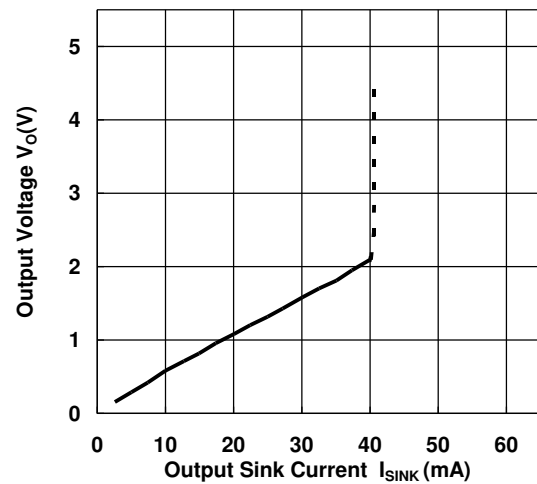
Maximum Output Voltage Swing vs. Operating Voltage
($T_a=25^\circ\text{C}$, $R_L=2\text{k}\Omega$)



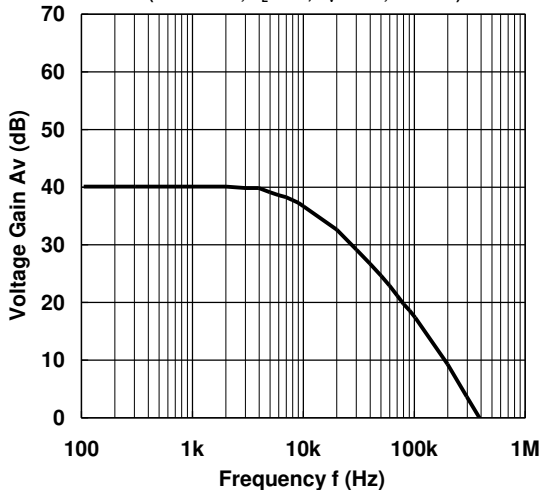
Output Source Current
($V^+=5\text{V}$, $T_a=25^\circ\text{C}$)



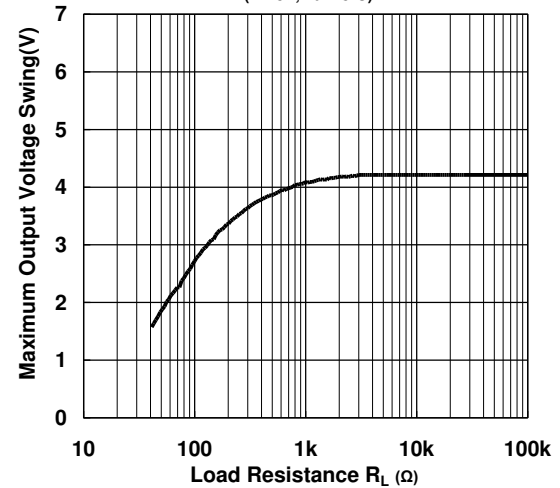
Output Sink Current
($V^+=5\text{V}$, $T_a=25^\circ\text{C}$)



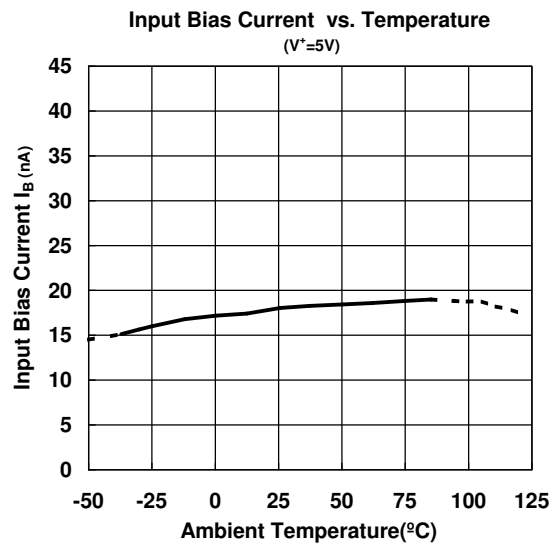
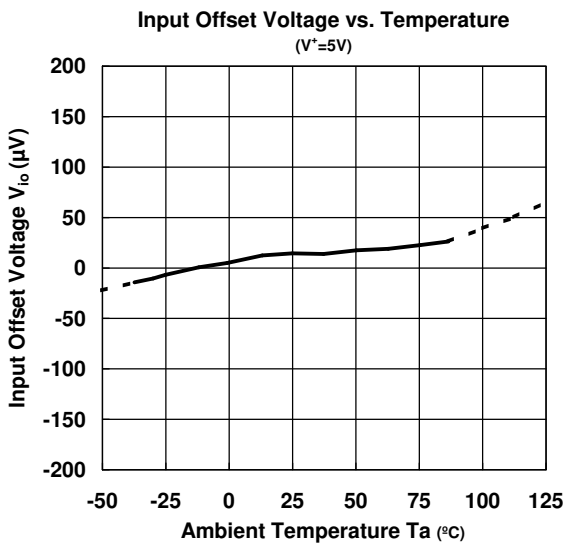
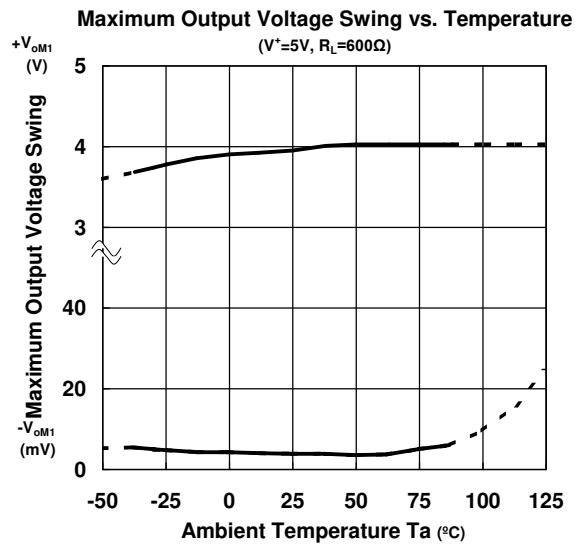
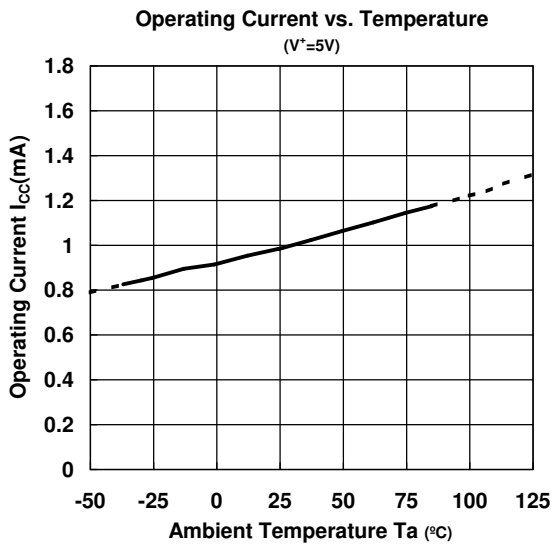
Voltage Gain vs. Frequency
($V^+/V^-=\pm 2.5\text{V}$, $R_L=2\text{k}\Omega$, $A_v=40\text{dB}$, $T_a=25^\circ\text{C}$)



Maximum Output Voltage Swing vs. Load Resistance
($V^+=5\text{V}$, $T_a=25^\circ\text{C}$)



■ TYPICAL CHARACTERISTICS



[CAUTION]
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