DUAL SINGLE-SUPPLY OPERATIONAL AMPLIFIER

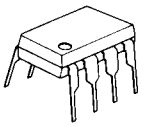
■ GENERAL DESCRIPTION

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.

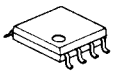
■ FEATURES

- Single Supply
- Operating Voltage (+4V~+36V)
- Low Input Offset Voltage (90μV typ.)
- Low Input Bias Current (18nA typ.)
- Low Input Offset Voltage Drift (4.0μV/˚C typ.)
- Package Outline DIP8,DMP8
- Bipolar Technology

■ PACKAGE OUTLINE

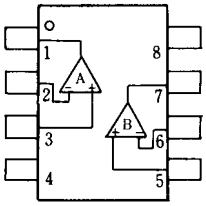


NJM2119D



NJM2119M

■ 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^+

■ 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.

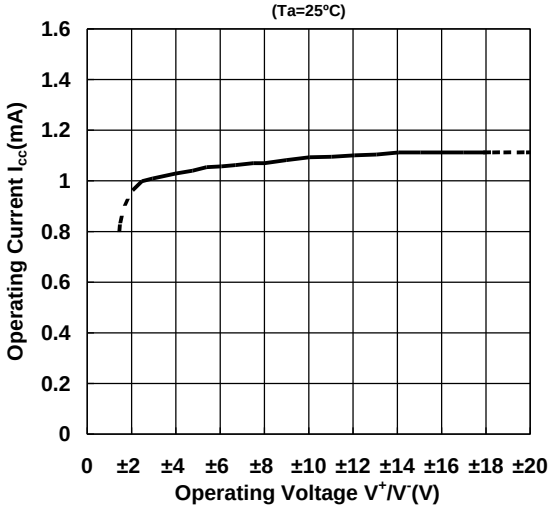
■ ELECTRICAL CHARACTERISTICS

(V^+=5.0V,Ta=25±2˚C)

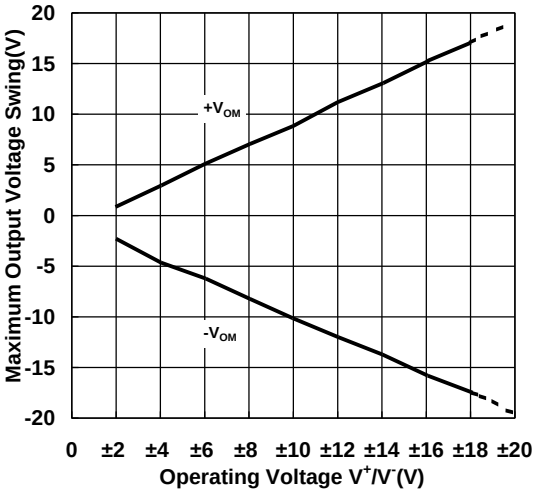
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	R_S≦50Ω	-	90	450	μV
V_{IO} Drift	$\Delta V_{IO}/\Delta T$	Ta=-30~+85˚C	-	4.0	-	μV/˚C
Input Offset Current	I_{IO}		-	0.3	7.0	nA
Input Bias Current	I_B		-	18	50	nA
Operating Current	I_{CC}	R_L=∞	-	1.0	1.5	mA
Input Common Mode 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

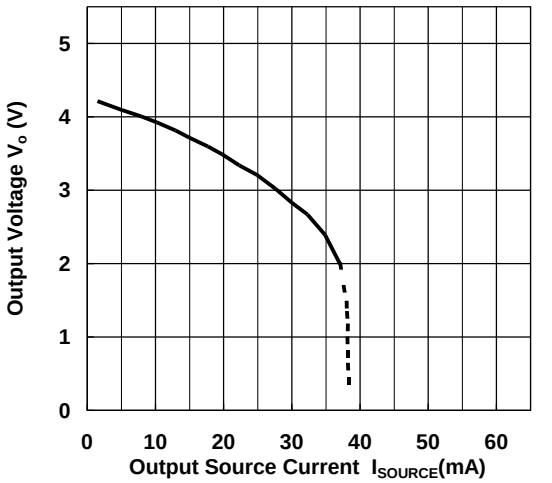
Operating Current vs. Operating Voltage
(Ta=25ºC)



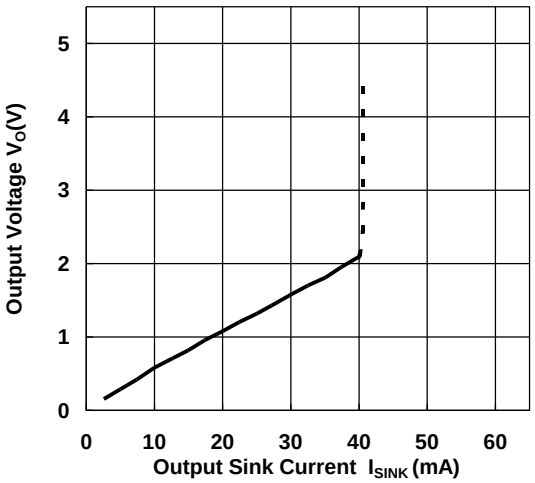
Maximum Output Voltage Swing vs. Operating Voltage
(Ta=25ºC, R_L=2KΩ)



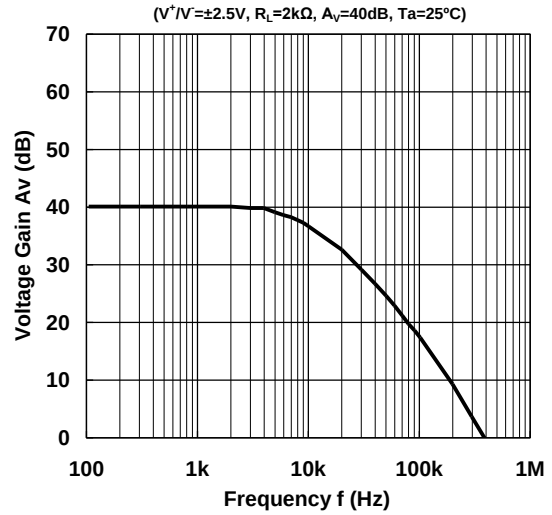
Output Source Current
(V^+=5V, Ta=25ºC)



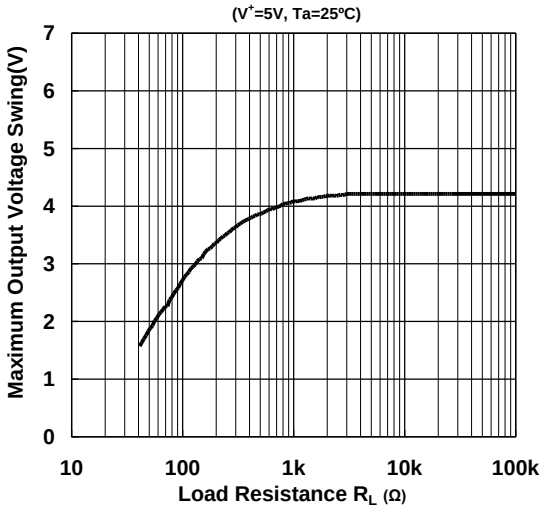
Output Sink Current
(V^+=5V, Ta=25ºC)



Voltage Gain vs. Frequency
(V^+/V^-=±2.5V, R_L=2kΩ, A_V=40dB, Ta=25ºC)



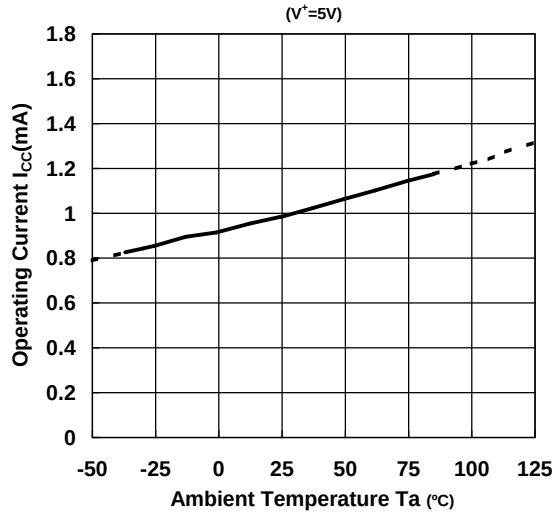
Maximum Output Voltage Swing vs. Load Resistance
(V^+=5V, Ta=25ºC)



■ TYPICAL CHARACTERISTICS

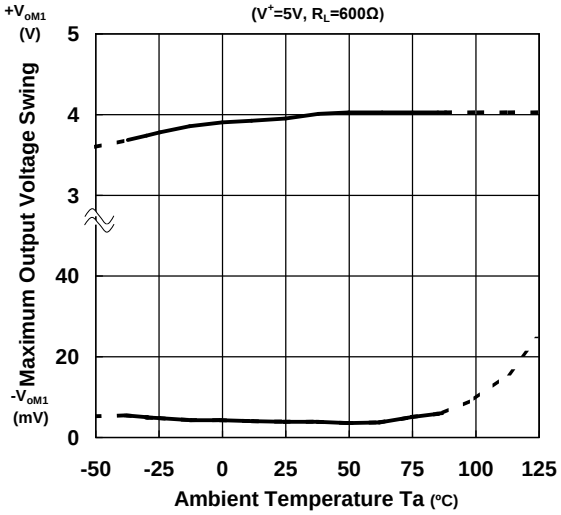
Operating Current vs. Temperature

(V^+=5V)



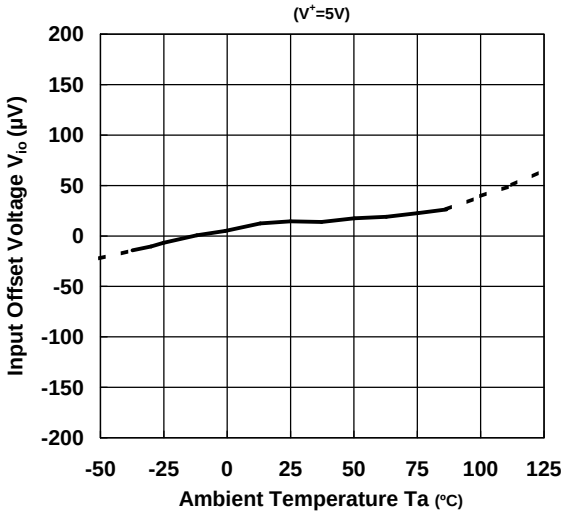
Maximum Output Voltage Swing vs. Temperature

(V^+=5V, R_L=600Ω)



Input Offset Voltage vs. Temperature

(V^+=5V)



Input Bias Current vs. Temperature

(V^+=5V)