

DUAL SINGLE-SUPPLY OPERATIONAL AMPLIFIER

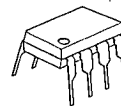
■ GENERAL DESCRIPTION

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

■ PACKAGE OUTLINE

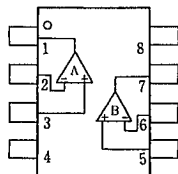


NJM2119D



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
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

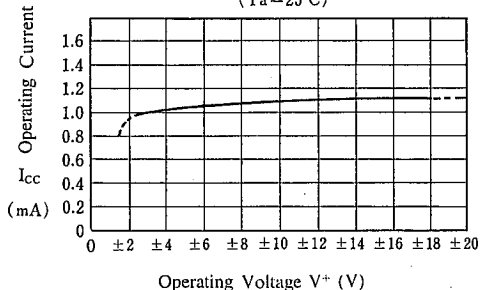
($V^+=5.0V$, $T_a=25\pm2^\circ C$)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	$R_S \leq 50\Omega$	—	90	450	μV
V_{IO} Drift	$\Delta V_{IO}/\Delta T$	$T_a = -30\sim+85^\circ C$	—	4.0	—	$\mu V/^\circ C$
Input Offset Current	I_{IO}		—	0.3	7.0	nA
Input Bias Current	I_{IB}		—	18	50	nA
Operating Current	I_{CC}	$R_L = \infty$	—	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	$R_L = 600\Omega$	90	105	—	dB
Maximum Output Voltage Swing 1	$+V_{OM1}$	$R_L = 600\Omega$	3.4	4.0	—	V
Maximum Output Voltage Swing 1	$-V_{OM1}$	$R_L = 600\Omega$	—	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

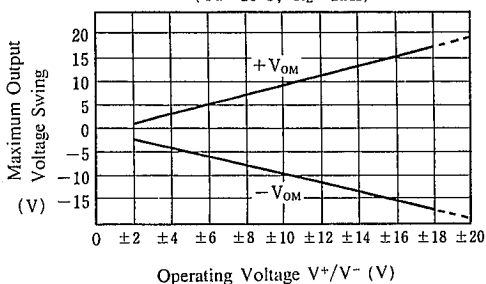
Operating Current vs. Operating Voltage

($T_a = 25^\circ\text{C}$)



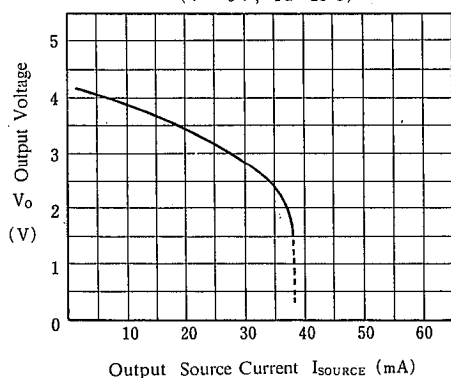
Maximum Output Voltage Swing vs. Operating Voltage

($T_a = 25^\circ\text{C}$, $R_L = 2\text{k}\Omega$)



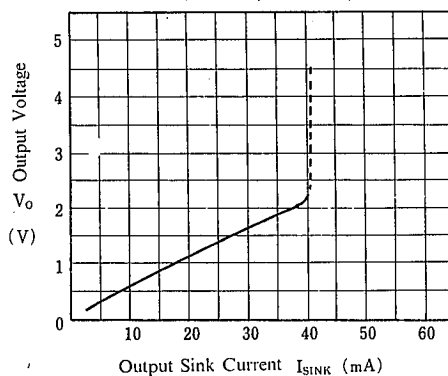
Output Source Current

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



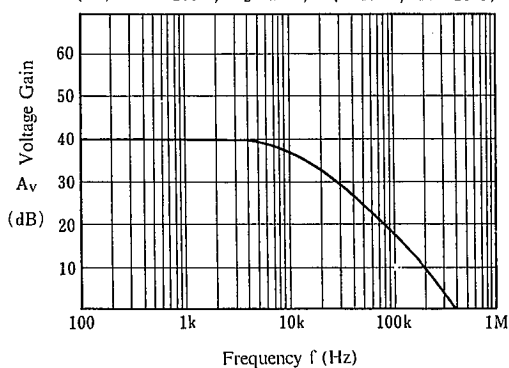
Output Sink Current

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



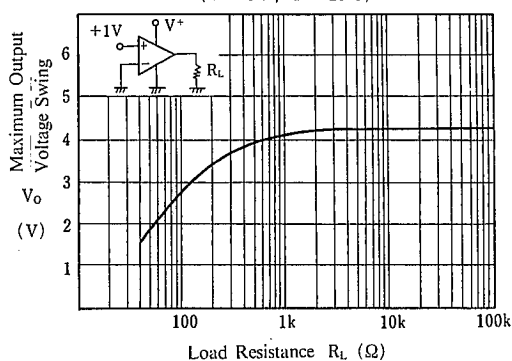
Voltage Gain vs. Frequency

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

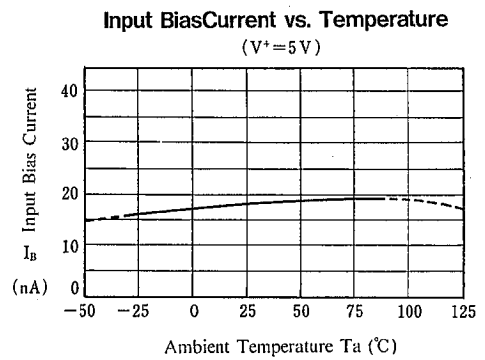
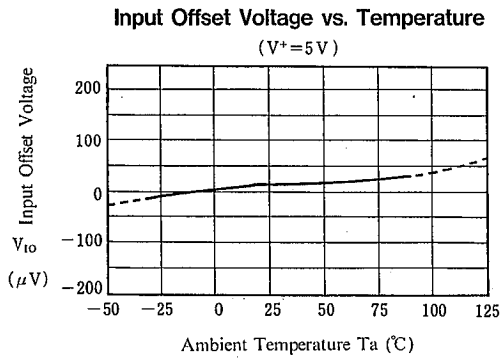
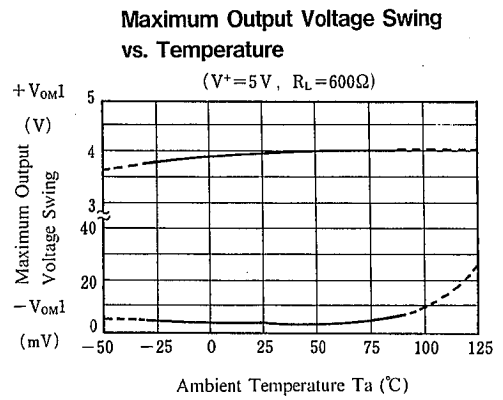
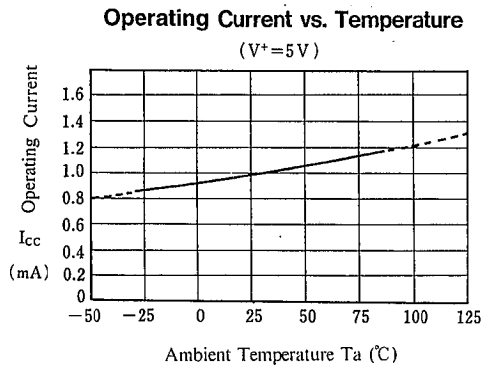


Maximum Output Voltage Swing vs. Load Resistance

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



■ TYPICAL CHARACTERISTICS



MEMO

[CAUTION]

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