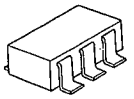
SINGLE OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

NJM 2107F is a single operational amplifier of ultra miniature surface mount package.

NJM 2107F has features of low operating supply voltage and low saturation output voltage. The NJM2107F is suitable for small electronic equipments and hybrid circuits.

■ PACKAGE OUTLINE

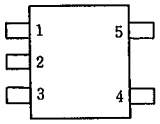


NJM2107F

■ FEATURE

- Operating Voltage (V^+/V^-=±1.0V to ±3.5V)
- Low Output Saturation : $4V_{P-P}$ at single 5V supply
- V⁻ Shield Plate between +Input and -Intput
- Suitable Pin Arrangement for Application
- Mounted in Ultra Miniature 2.9×1.5mm : (1/5 of DMP-8 package)
- Bipolar Technology

■ PIN CONFIGURATION

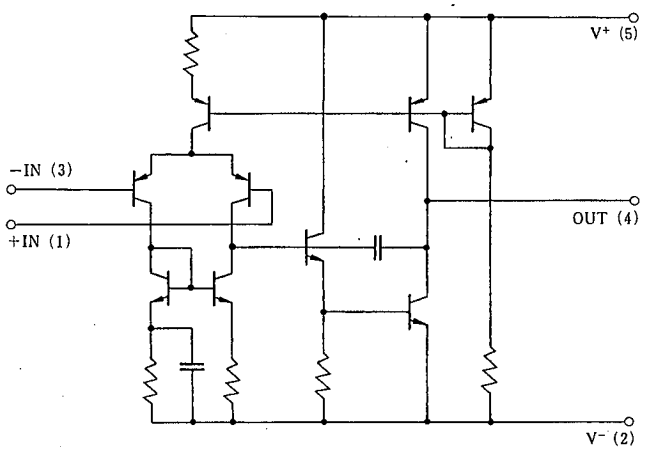


NJM2107F

Pin Function

1. +INPUT
2. V⁻
3. −INPUT
4. OUTPUT
5. V⁺

■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+/V^-	±3.5	V
Differential Input Voltage	V_{ID}	±7	V
Input Voltage	V_{IC}	±3.5	V
Power Dissipation	P_D	200	mW
Operating Temperature Range	T_{opr}	−40～+85	℃
Storage Temperature Range	T_{stg}	−40～+125	℃

■ ELECTRICAL CHARACTERISTICS

(V^+/V^-=±2.5V, Ta=25℃)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	R_S=10kΩ	−	1	6	mV
Input Offset Current	I_{IO}	I^+-I^-	−	5	200	nA
Input Bias Current	I_B		−	100	500	nA
Input Common Mode Voltage Range	V_{ICM}		±1.5	−	−	V
Large Signal Voltage Gain	A_V	R_L=10kΩ, V_O=±2.0V	60	80	−	dB
Output Voltage Swing	V_{OM}	R_L=2.5kΩ	±2.0	±2.2	−	V
Common Mode Rejection Ratio	CMR	R_S≦10kΩ	60	80	−	dB
Supply Voltage Rejection Ratio	SVR	R_S≦10KΩ	60	70	−	dB
Slew Rate	SR	V_{IN}=±1V_{P-P}, A_{CL}=+1	−	3	−	V/μs
Operating Current	I_{CC}		1	2	3	mA

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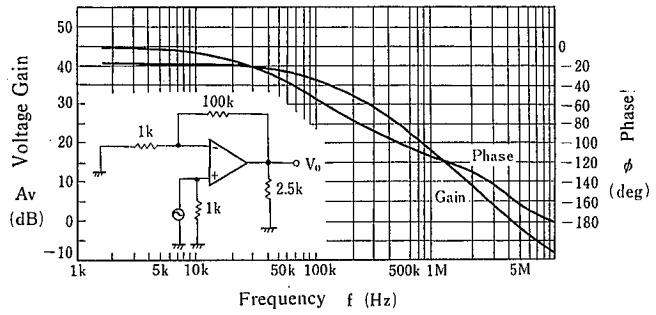
■ TYPICAL CHARACTERISTICS

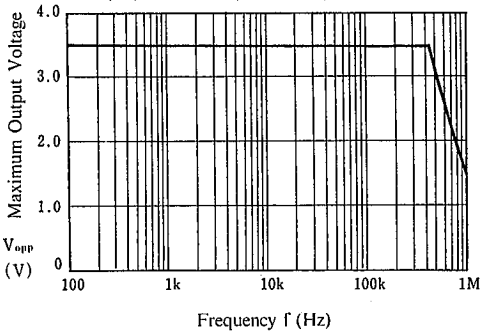
Voltage Gain, Phase vs. Frequency

($V^+/V^-=\pm2.5V$, Ta=25°C)



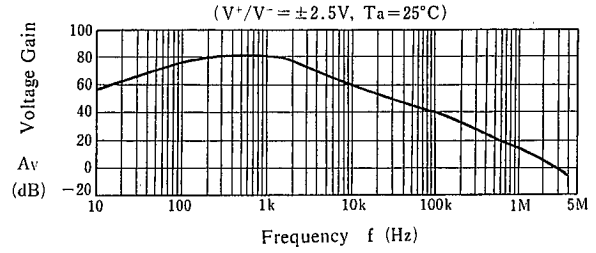
Maximum Output Voltage vs. Frequency

($V^+/V^-=\pm2.5V$, R=2.5kΩ, Ta=25°C)

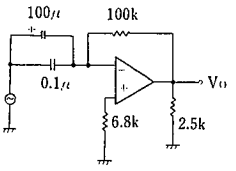


Voltage Gain, vs. Frequency

($V^+/V^-=\pm2.5V$, Ta=25°C)

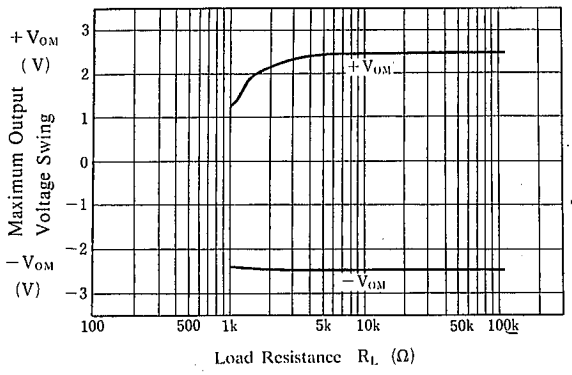


Test Circuit



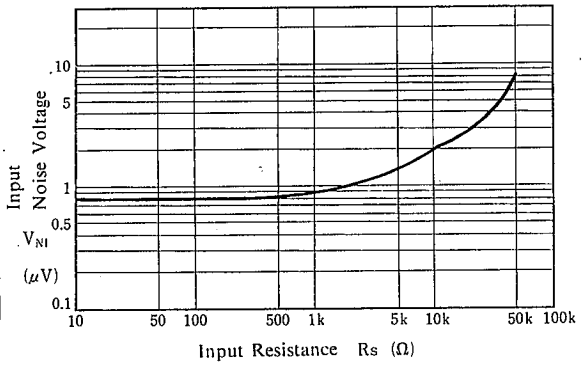
Maximum Output Voltage Swing vs. Load Resistance

($V^+/V^-=\pm2.5V$, Ta=25°C)



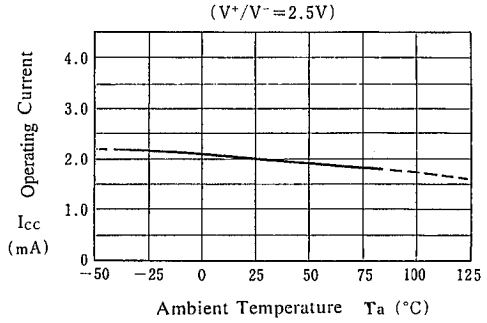
Input Noise Voltage vs. Input Resistance

($V^+/V^-=\pm3.0V$, Ta=25°C)

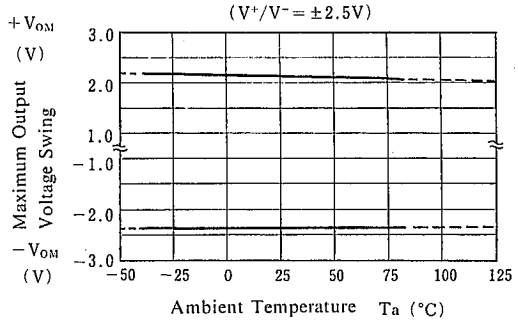


■ TYPICAL CHARACTERISTICS

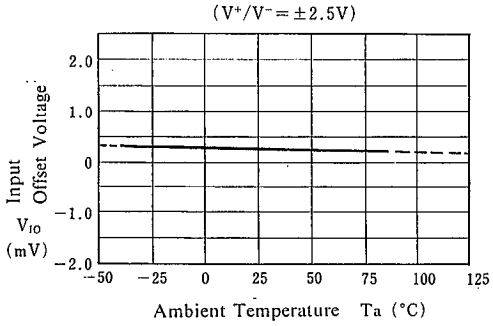
Operating Current vs. Temperature



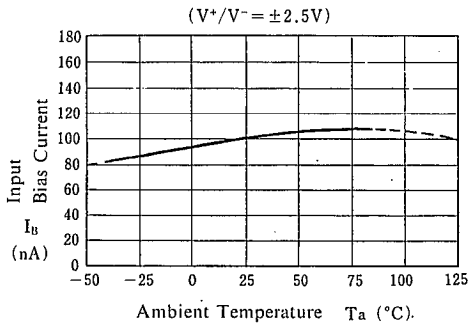
Maximum Output Voltage Swing vs. Temperature



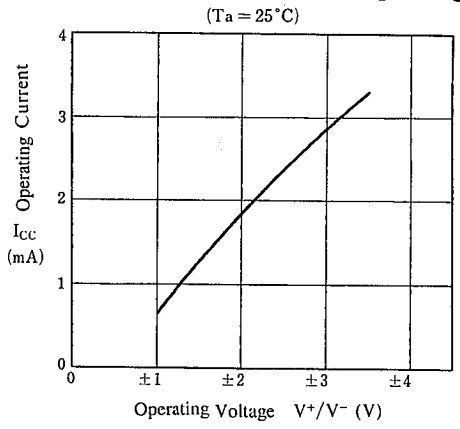
Input Offset Voltage vs. Temperatre



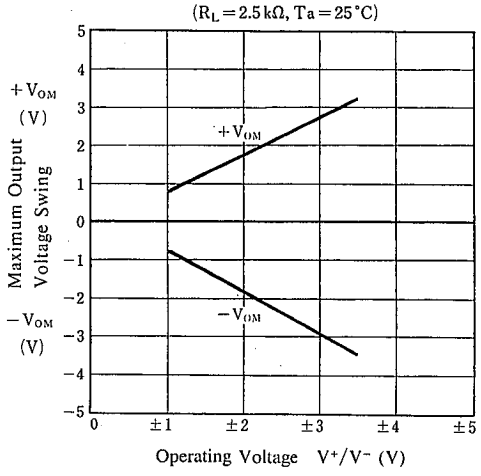
Input Bias Current vs. Temperature



Operating Current vs. Operating Voltage



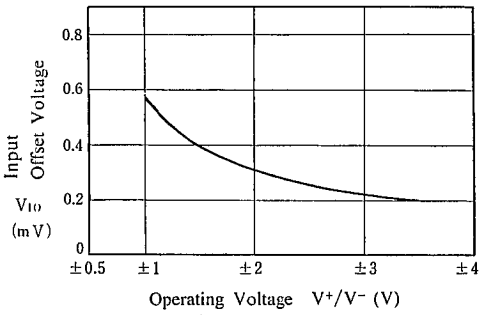
Maximum Output Voltage Swing vs. Operating Voltage



■ TYPICAL CHARACTERISTICS

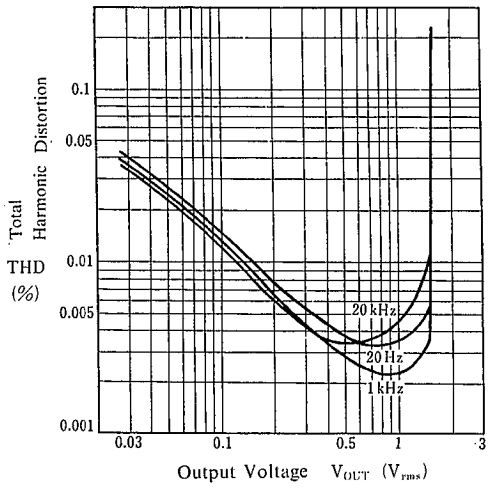
Input Offset Voltage vs. Operating Voltage

(Ta = 25°C)



Total Harmonic Distortion vs. Output Voltage

(V+/V- = ±2.5V, R_L = 2.5kΩ, Gain = 10dB, Ta = 25°C)



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