DUAL OPERATIONAL AMPLIFIER

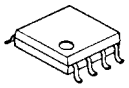
■ GENERAL DESCRIPTION

The **NJM2740** is a dual low supply voltage operational amplifier with low saturation output voltage.

It can operate with single supply when proper input bias has given.

It is suitable for audio section of portable sets and PCs.

■ PACKAGR OUTLINE



NJM2740M

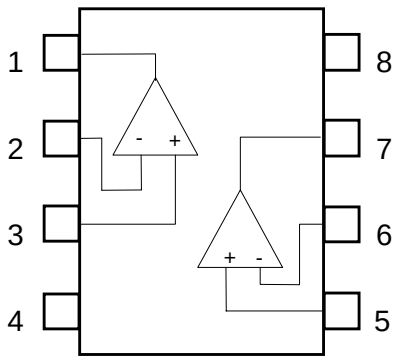
NJM2740V

■ FEATURES

- Operating Voltage (±1.1 to ±3.5V)
- Low Saturation Output Voltage (±2.2V typ. at R_L=2.5kΩ)
- High Slew Rate (4V/μs typ.)
- Bipolar Technology
- Package Outline DMP8,SSOP8

■ PIN CONFIGURATION

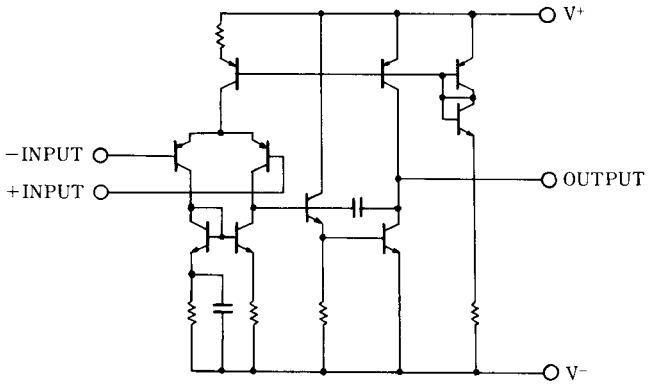
(Top View)



PIN FUNCTION

1.OUTPUT1
2.-INPUT1
3.+INPUT1
4.V^-
5.+INPUT2
6.-INPUT2
7.OUTPUT2
8.V^+

■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+/V^-	±4	V
Differential Input Voltage	V_{ID}	±7	V
Common Mode Input Voltage	V_{IC}	±3.5	V
Power Dissipation	P_D	300 (DMP8) 250 (SSOP8)	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +125	°C

■ RECOMMENDED OPERATING CONDITION (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Operating Voltage Range	V^+/V^-		±1.1	-	±3.5	V

■ DC CHARACTERISTICS (V^+/V^-=±2.5V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Operating Current	I_{CC}	No Signal, R_L=infinite	-	3.5	5	mA
Input Offset Voltage	V_{IO}	R_S≤10kΩ	-	1.0	6.0	mV
Input Bias Current	I_B		-	100	300	nA
Input Offset Current	I_{IO}		-	5	100	nA
Open Loop Voltage Gain	Av	R_L>10kΩ	60	80	-	dB
Common Mode Rejection	CMR		60	74	-	dB
Supply Voltage Rejection	SVR	V^+/V^-=±1.2 to 3.5V	60	80	-	dB
Maximum Output Voltage	V_{OM}	R_L>2.5kΩ	±2	±2.2	-	V
Input Common Mode Voltage Range	V_{ICM}		-1.4/ +1.5	-	-	V

■ AC CHARACTERISTICS (V^+/V^-=±2.5V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Gain Bandwidth product	GB	f=10kHz	-	12	-	MHz

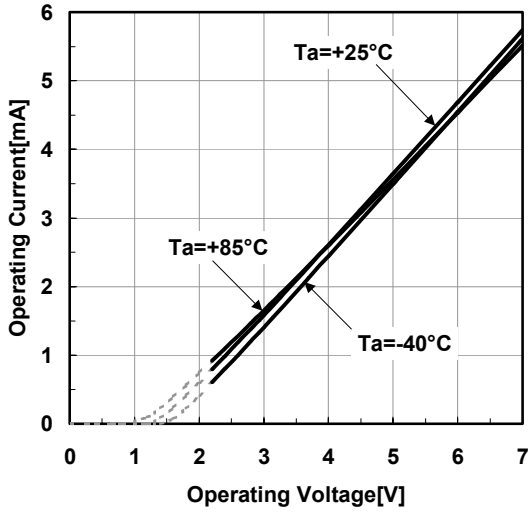
■ TRANSIENT CHARACTERISTICS (V^+/V^-=±2.5V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Slew Rate	SR	Av=1,V_{IN}=±1V	-	4	-	V/µs

■ TYPICAL CHARACTERISTICS

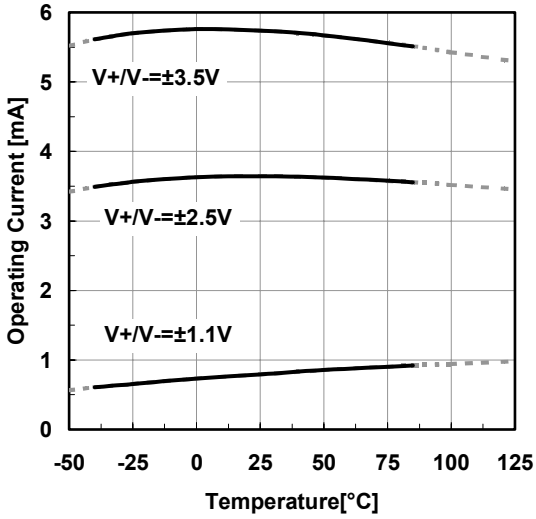
Operating Current vs. Operating Voltage

V_{IN}=0V,no load



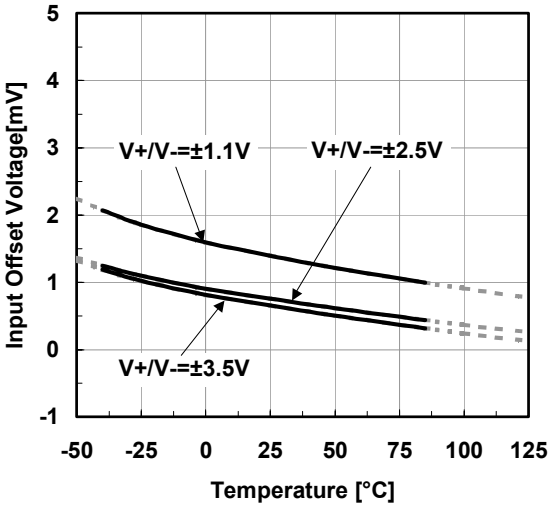
Operating Current vs. Temperature

VIN=0V,no load



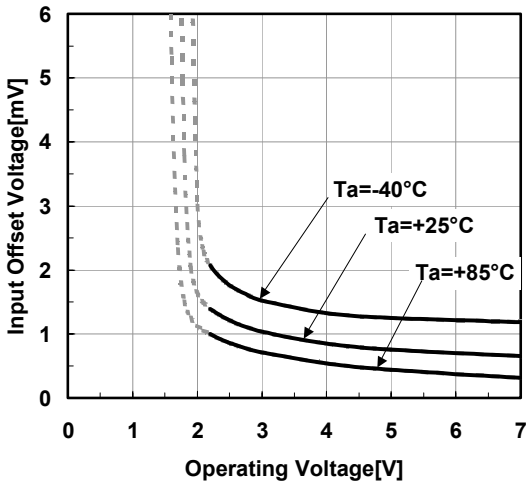
Input Offset Voltage vs. Temperature

R_S=10kΩ



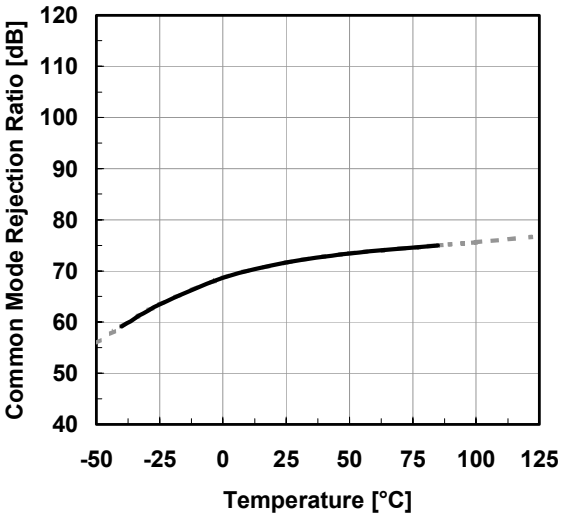
Input Offset Voltage vs. Operating Voltage

R_S=10kΩ



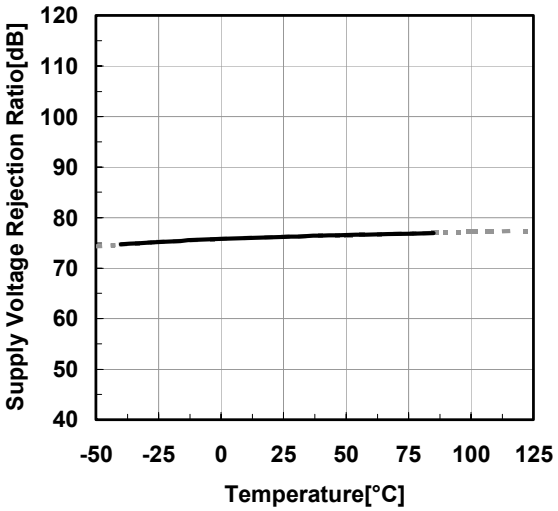
Common Mode Rejection Ratio vs. Temperature

V+/V-=±2.5V,VIN=±1.5V

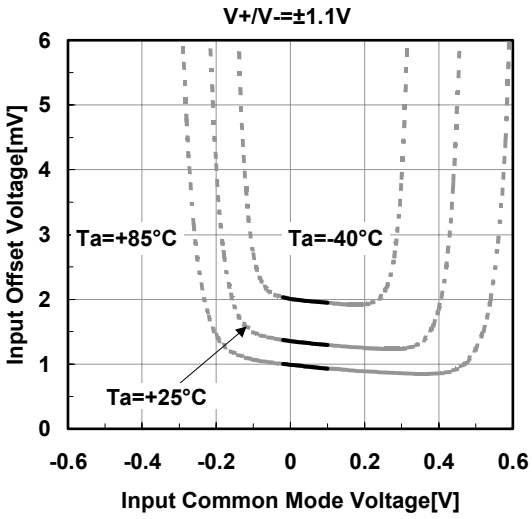


Supply Voltage Rejection Ratio vs. Temperature

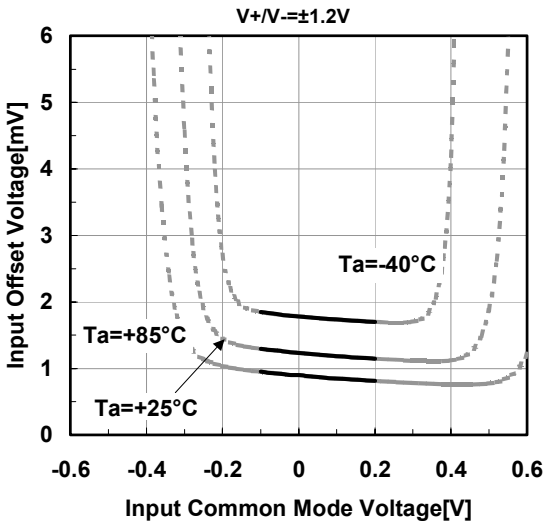
V+/V-=±1.1V to ±3.5V



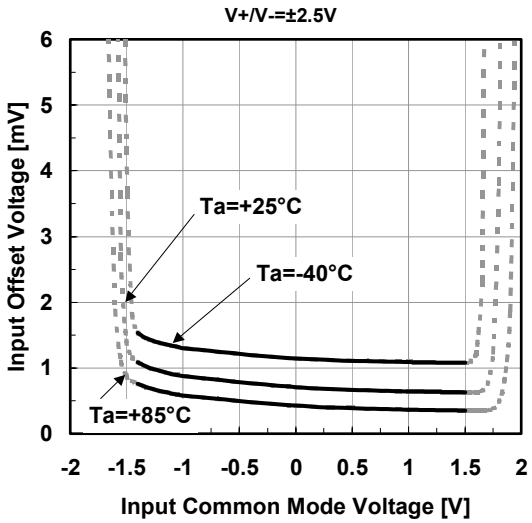
Input Offset Voltage
vs. Input Common Mode Voltage



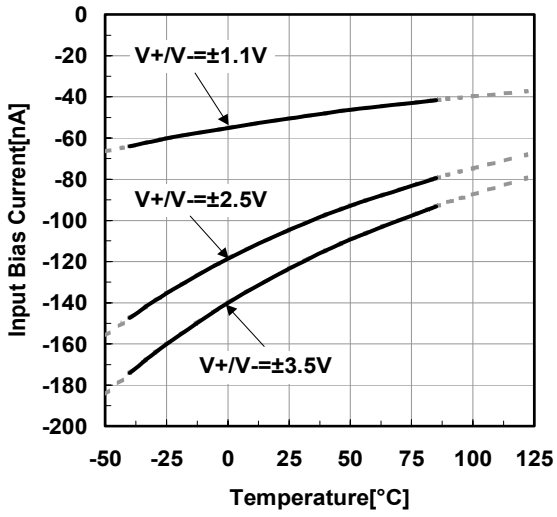
Input Offset Voltage
vs. Input Common Mode Voltage



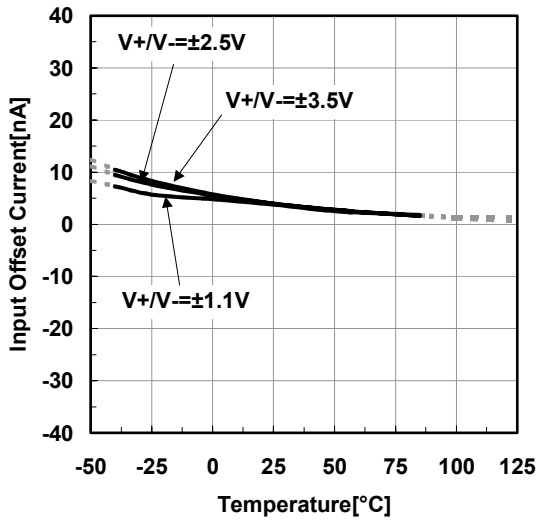
Input Offset Voltage
vs. Input Common Mode Voltage



Input Bias Current vs. Temperature

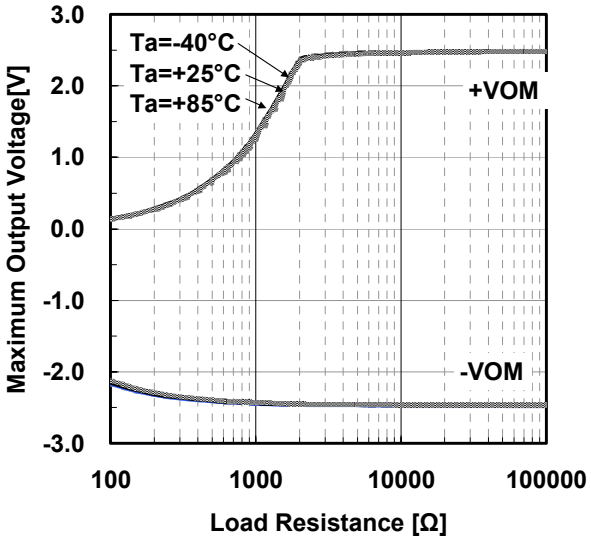


Input Offset Current vs. Temperature



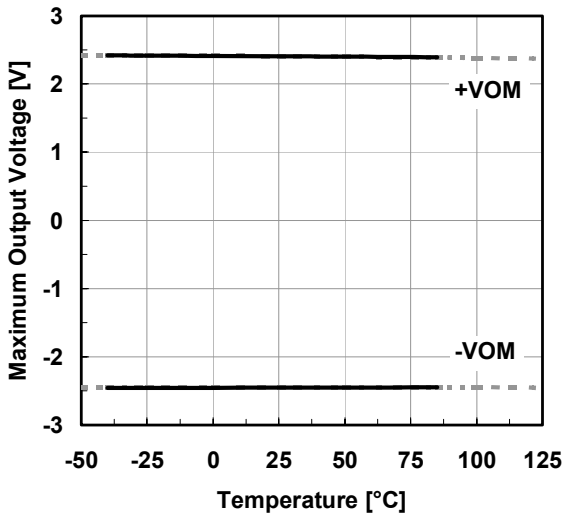
Maximum Output Voltage vs. Load Resistans

V+/V-=2.5V, open loop



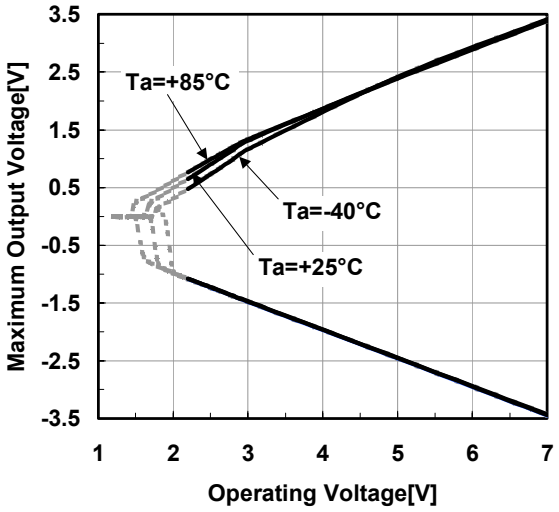
Maximum Output Voltage vs. Temperture

V+/V-=±2.5V,RL=2.5kΩ



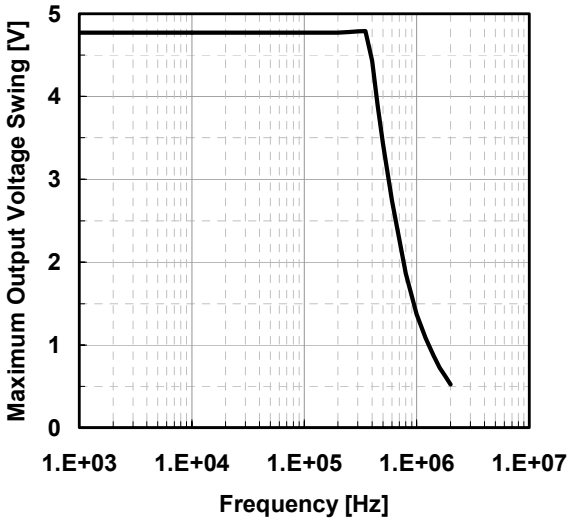
Maximum Output Voltage vs. Operating Voltage

RL=2.5kΩ



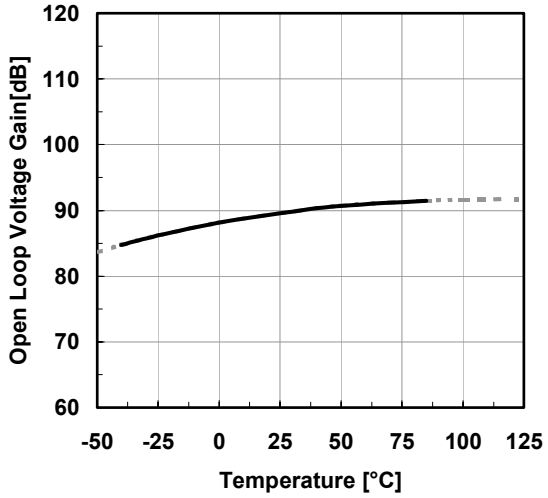
Maximum Output Voltage Swing vs. Frequency

V+/V-=±2.5V ,RL=2.5kΩ,Ta=25°C



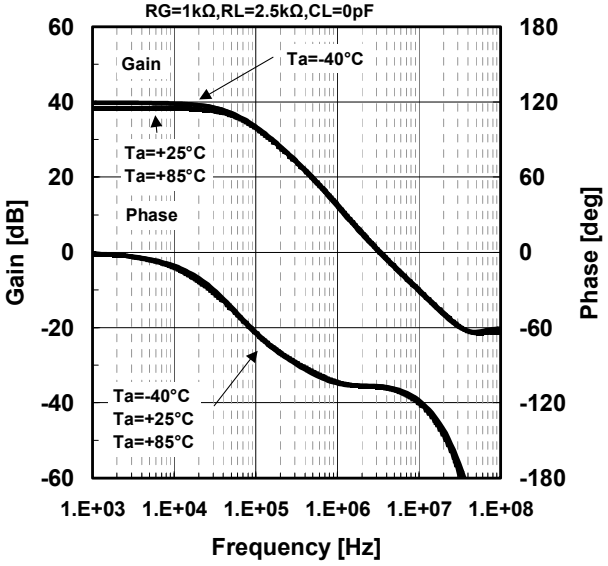
Open Loop Voltage Gain vs. Temperature

V+/V-=±2.5V,RL=10kΩ



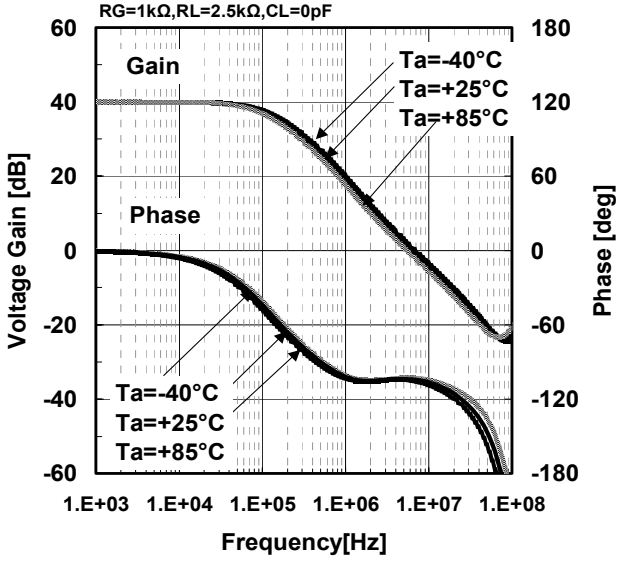
Voltege Gain & Phase vs. Frequency

V+/V-=±1.1V ,GV=40dB,RF=100KΩ,
RG=1kΩ,RL=2.5kΩ,CL=0pF



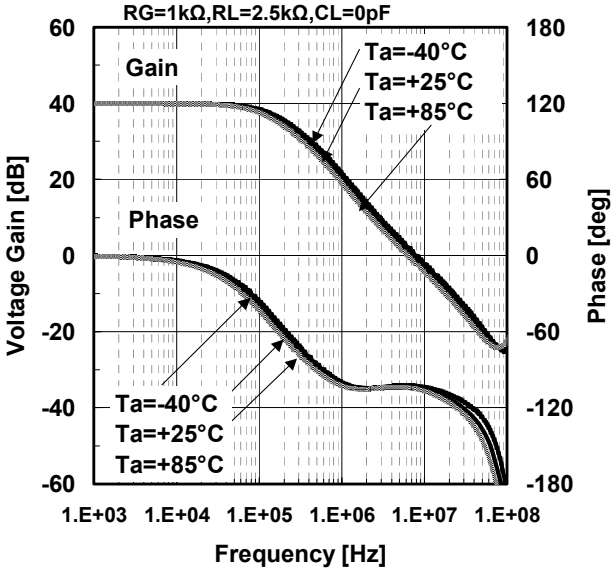
Voltage Gain & Phase vs. Frequency

V+/V-=±2.5V ,GV=40dB,RF=100KΩ,
RG=1kΩ,RL=2.5kΩ,CL=0pF



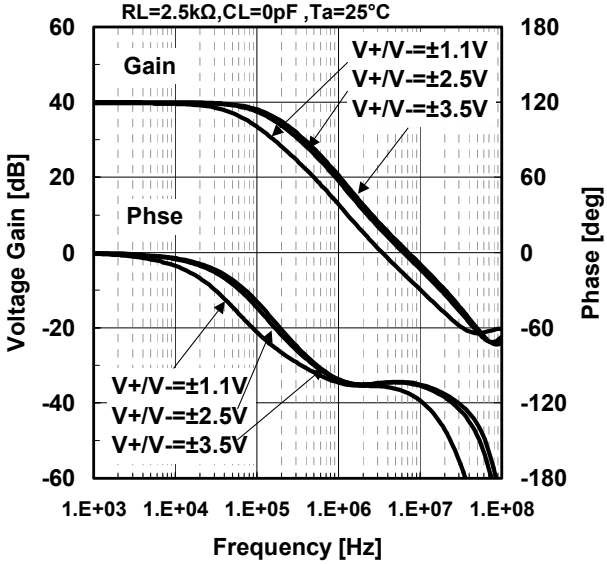
Voltage Gain & Phase vs. Frequency

V+/V-=±3.5V ,GV=40dB,RF=100KΩ,
RG=1kΩ,RL=2.5kΩ,CL=0pF



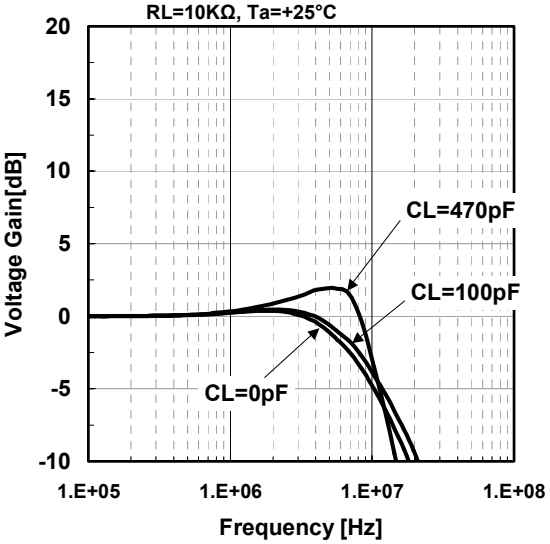
Voltage Gain & Phase vs. Frequency

GV=40dB,RF=100KΩ,RG=1kΩ,
RL=2.5kΩ,CL=0pF ,Ta=25°C



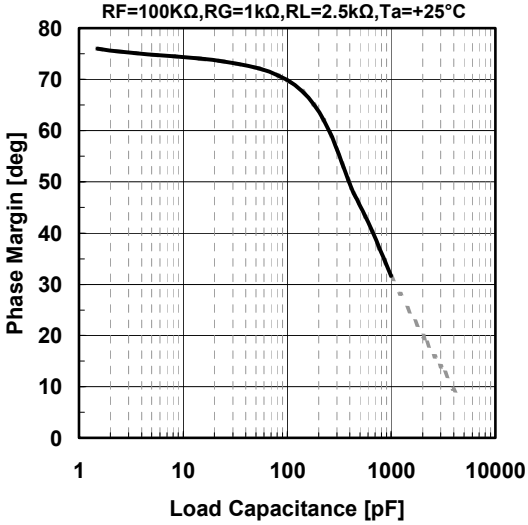
Peak Gain of Voltege Follower

V+/V-=2.5V, GV=0dB,RS=50Ω,
RL=10KΩ, Ta=+25°C



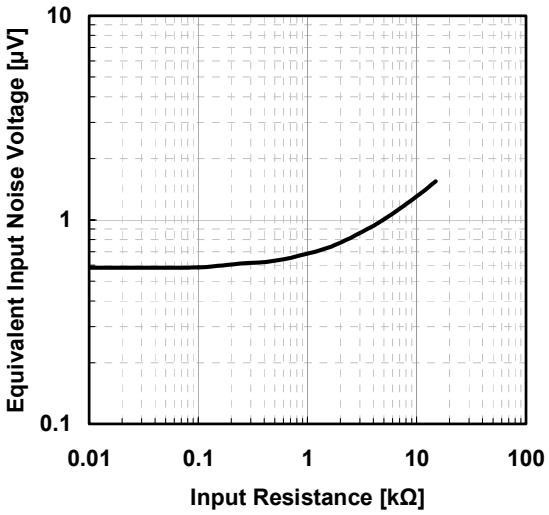
Phase Margin vs. Load Capacitance

V+/V-=±2.5V ,GV=40dB,
RF=100KΩ,RG=1kΩ,RL=2.5kΩ,Ta=+25°C



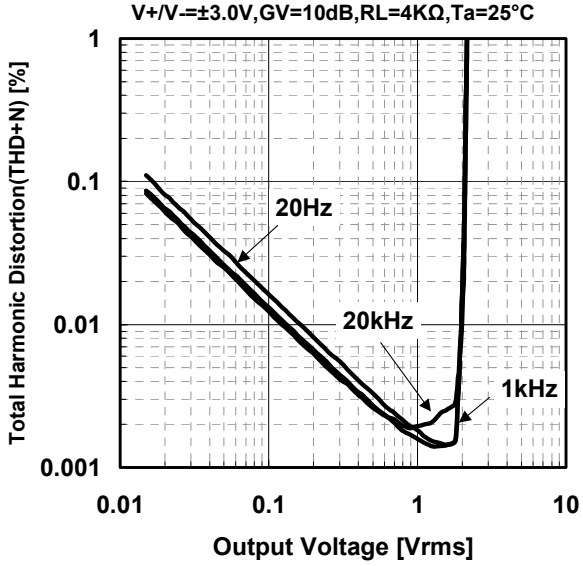
Equivalent Input Noise Voltage vs. Input Resistance

V+/V-=±3.0V ,RF=100kΩ,RG=100Ω,JIS A,Ta=25°C



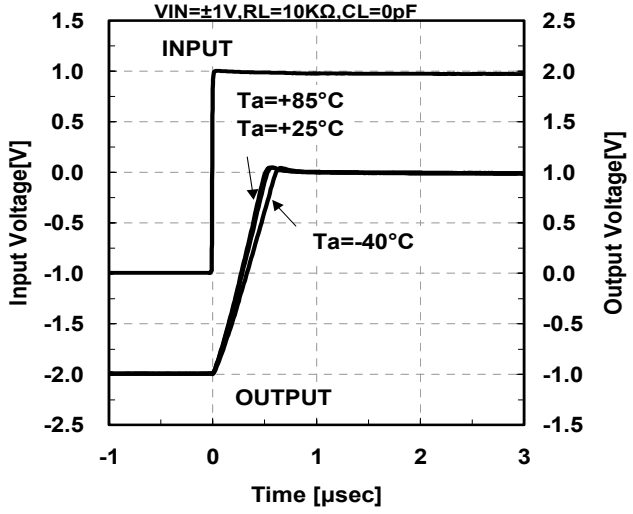
Total Harmonic Distortion vs. Output Voltage

V+/V-=±3.0V,GV=10dB,RL=4KΩ,Ta=25°C



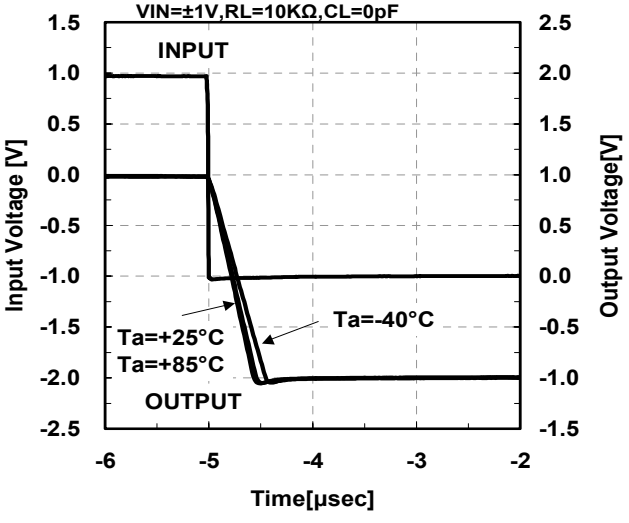
Pulse Response (Rise)

V+/V-=±2.5V,AV=0dB,f=100kHz,
VIN=±1V,RL=10KΩ,CL=0pF



Pulse Response (Fall)

V+/V-=±2.5V,AV=0dB,f=100kHz,
VIN=±1V,RL=10KΩ,CL=0pF



■ MEMO

Mouser Electronics

Authorized Distributor

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NJR:

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