

DUAL OPERATIONAL AMPLIFIER

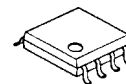
■ GENERAL DESCRIPTION

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

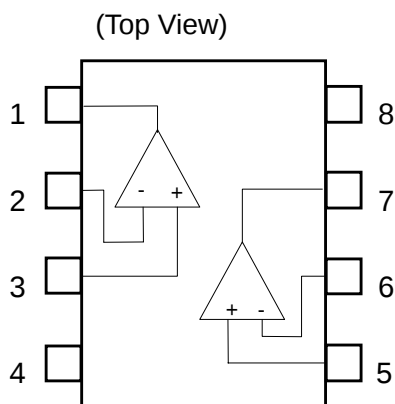


NJM2740V

■ FEATURES

- Operating Voltage $(\pm 1.1$ to $\pm 3.5V)$
- Low Saturation Output Voltage $(\pm 2.2V$ typ. at $R_L = 2.5k\Omega)$
- High Slew Rate $(4V/\mu s$ typ.)
- Bipolar Technology
- Package Outline DMP8, SSOP8

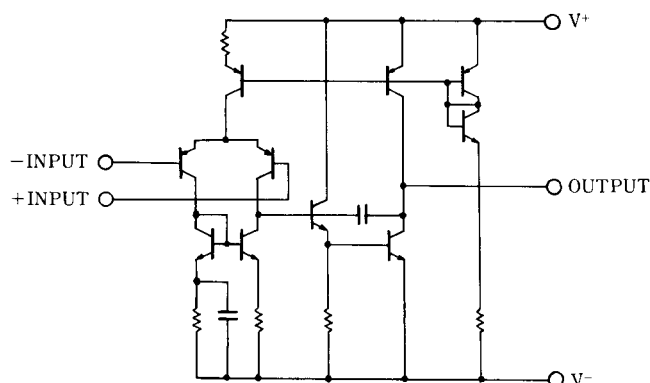
■ PIN CONFIGURATION



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 ($V^+/V^- = \pm 2.5V$, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Operating Current	I_{CC}	No Signal, $R_L = \text{infinite}$	-	3.5	5	mA
Input Offset Voltage	V_{IO}	$R_S \leq 10k\Omega$	-	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	A_v	$R_L > 10k\Omega$	60	80	-	dB
Common Mode Rejection	CMR		60	74	-	dB
Supply Voltage Rejection	SVR	$V^+/V^- = \pm 1.2$ to 3.5V	60	80	-	dB
Maximum Output Voltage	V_{OM}	$R_L > 2.5k\Omega$	± 2	± 2.2	-	V
Input Common Mode Voltage Range	V_{ICM}		-1.4/ +1.5	-	-	V

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

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

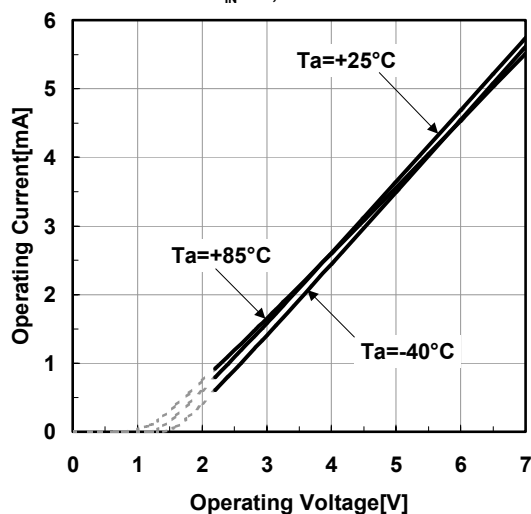
■ TRANSIENT CHARACTERISTICS ($V^+/V^- = \pm 2.5V$, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Slew Rate	SR	$A_v = 1, V_{IN} = \pm 1V$	-	4	-	V/ μs

■ TYPICAL CHARACTERISTICS

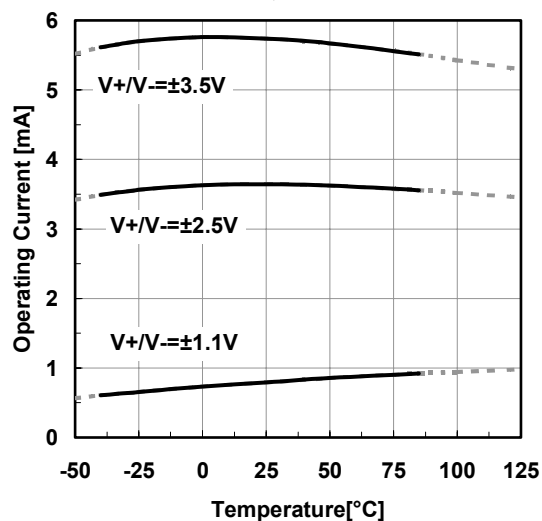
Operating Current vs. Operating Voltage

$V_{IN}=0V$, no load



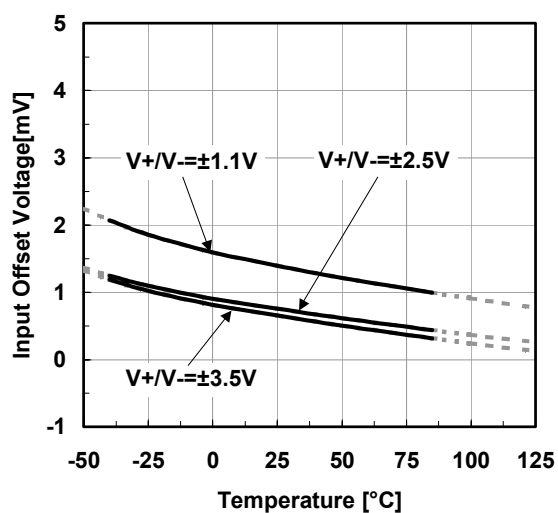
Operating Current vs. Temperature

$V_{IN}=0V$, no load



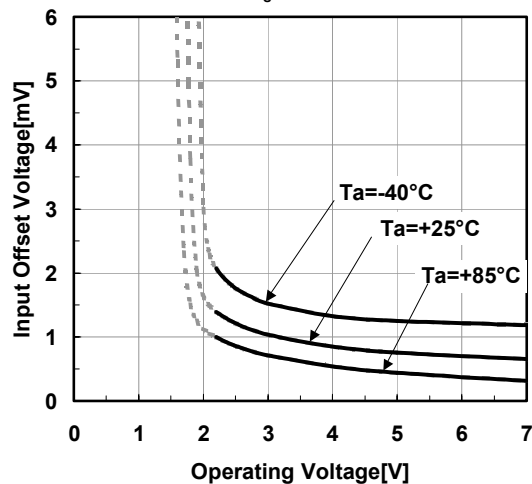
Input Offset Voltage vs. Temperature

$R_S=10k\Omega$



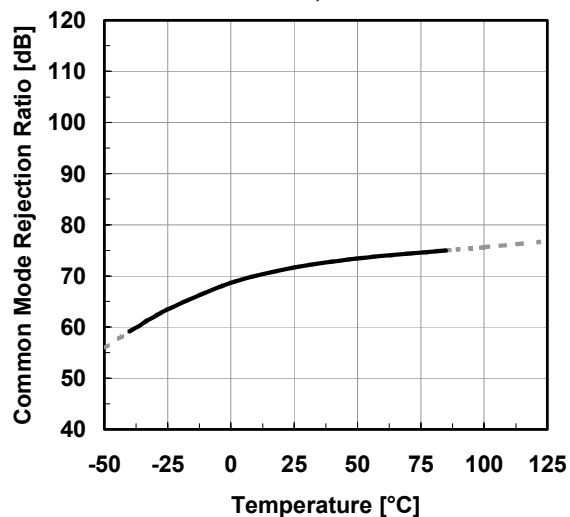
Input Offset Voltage vs. Operating Voltage

$R_S=10k\Omega$



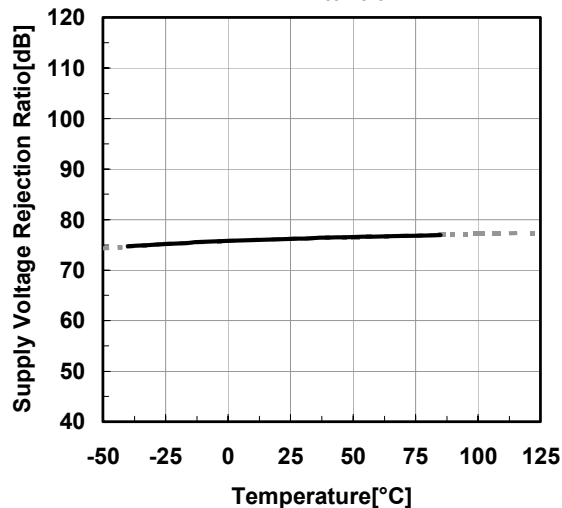
Common Mode Rejection Ratio vs. Temperature

$V+/V-=\pm 2.5V$, $V_{IN}=\pm 1.5V$

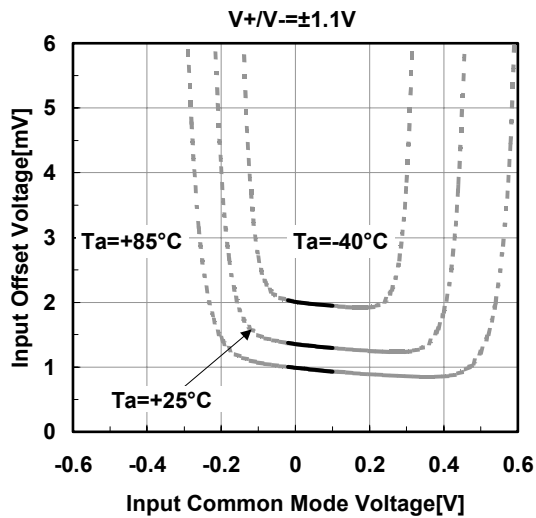


Supply Voltage Rejection Ratio vs. Temperature

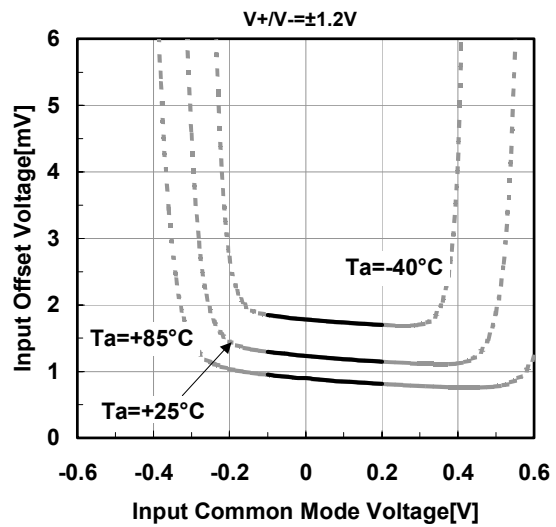
$V+/V-=\pm 1.1V$ to $\pm 3.5V$



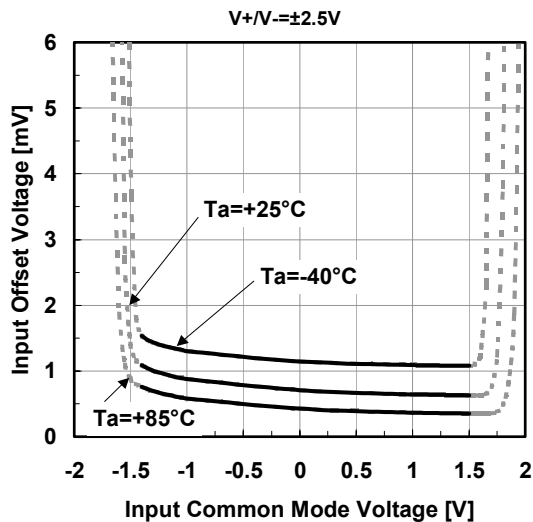
Input Offset Voltage
vs. Input Common Mode Voltage



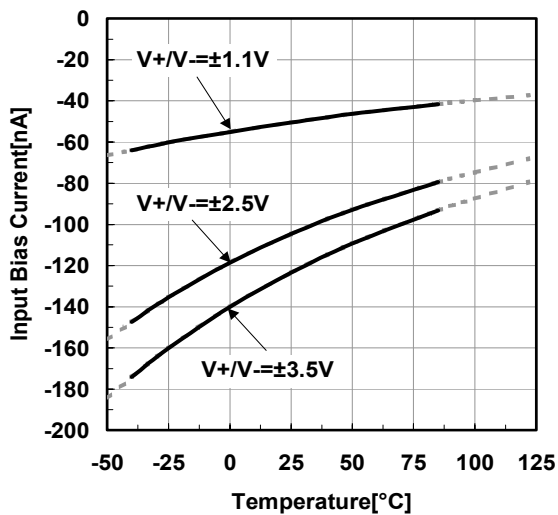
Input Offset Voltage
vs. Input Common Mode Voltage



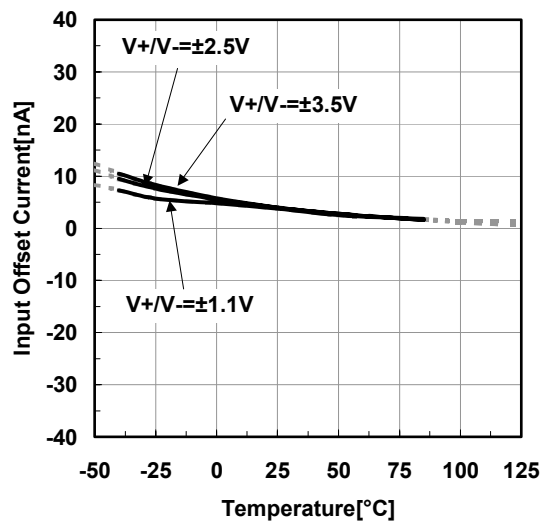
Input Offset Voltage
vs. Input Common Mode Voltage



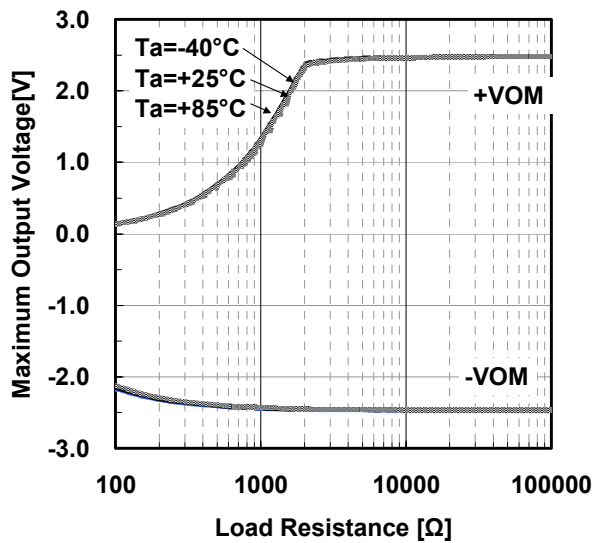
Input Bias Current vs. Temperature



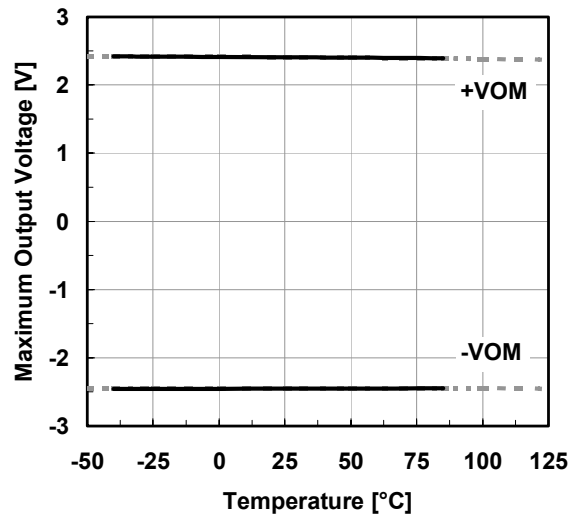
Input Offset Current vs. Temperature



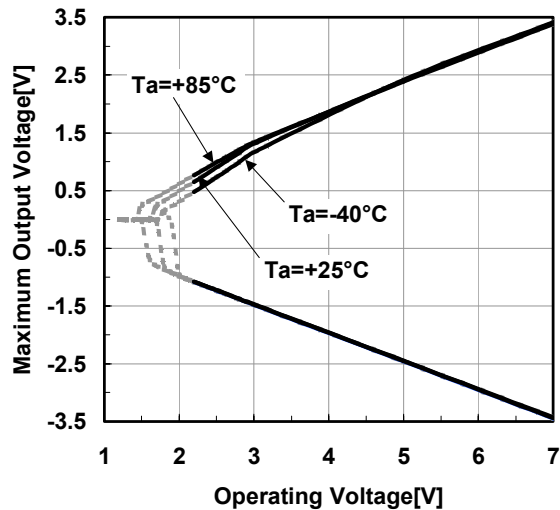
Maximum Output Voltage
vs. Load Resistans
 $V_+/V_- = 2.5V$, open loop



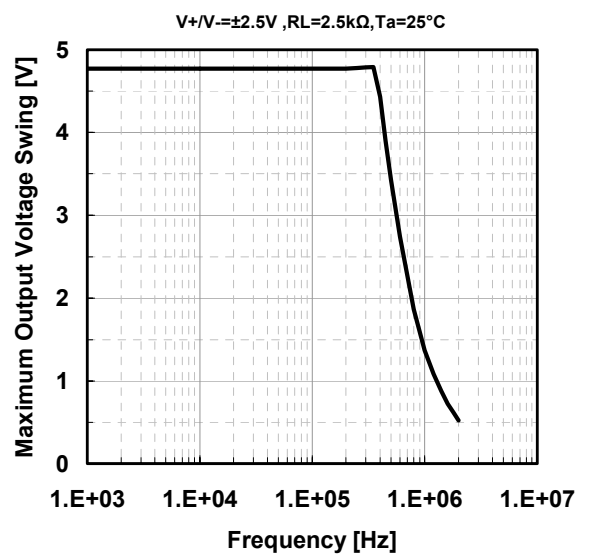
Maximum Output Voltage
vs. Temperture
 $V_+/V_- = \pm 2.5V$, $R_L = 2.5k\Omega$



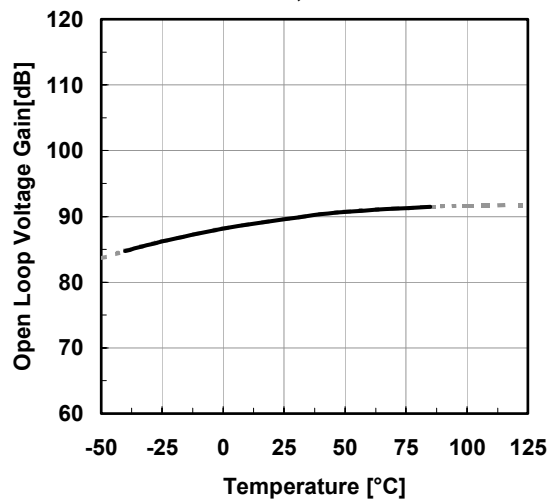
Maximum Output Voltage
vs. Operating Voltage
 $R_L = 2.5k\Omega$



Maximum Output Voltage Swing
vs. Frequency

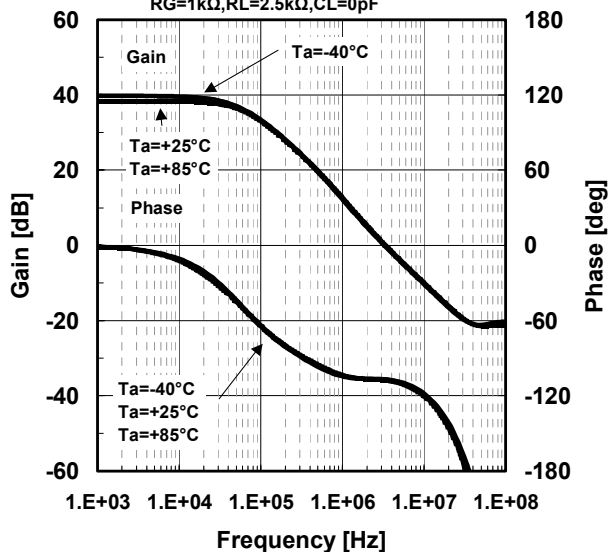


Open Loop Voltage Gain
vs. Temperature
 $V_+/V_- = \pm 2.5V$, $R_L = 10k\Omega$



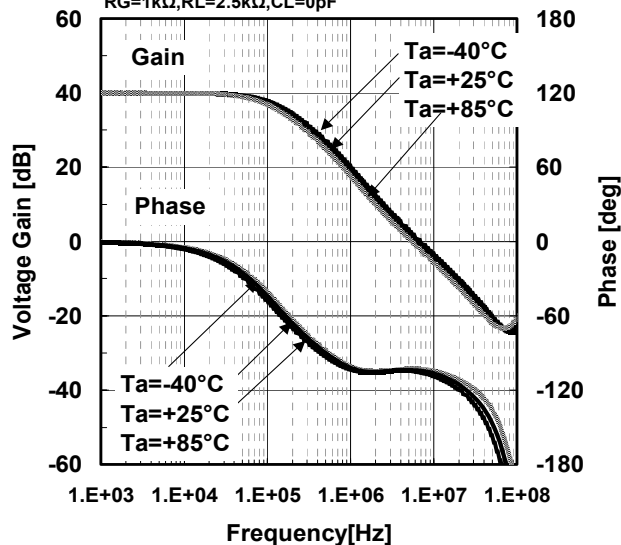
Voltage Gain & Phase vs. Frequency

$V+/V- = \pm 1.1V$, $GV = 40dB$, $RF = 100k\Omega$,
 $RG = 1k\Omega$, $RL = 2.5k\Omega$, $CL = 0pF$



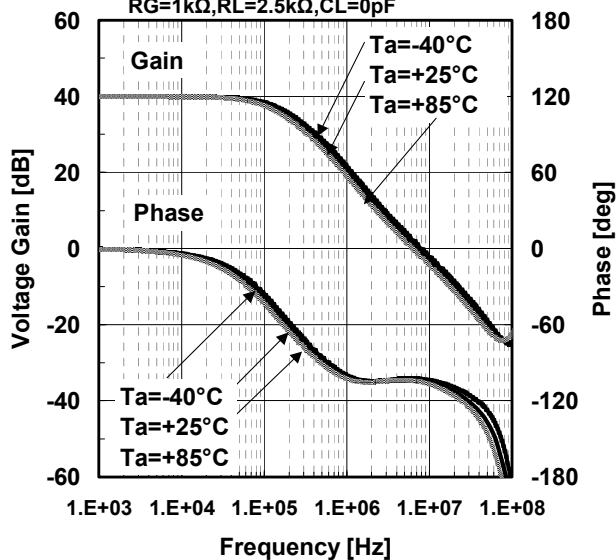
Voltage Gain & Phase vs. Frequency

$V+/V- = \pm 2.5V$, $GV = 40dB$, $RF = 100k\Omega$,
 $RG = 1k\Omega$, $RL = 2.5k\Omega$, $CL = 0pF$



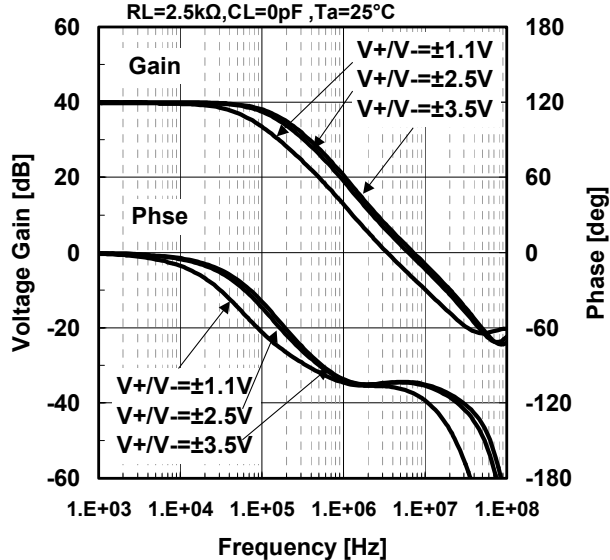
Voltage Gain & Phase vs. Frequency

$V+/V- = \pm 3.5V$, $GV = 40dB$, $RF = 100k\Omega$,
 $RG = 1k\Omega$, $RL = 2.5k\Omega$, $CL = 0pF$



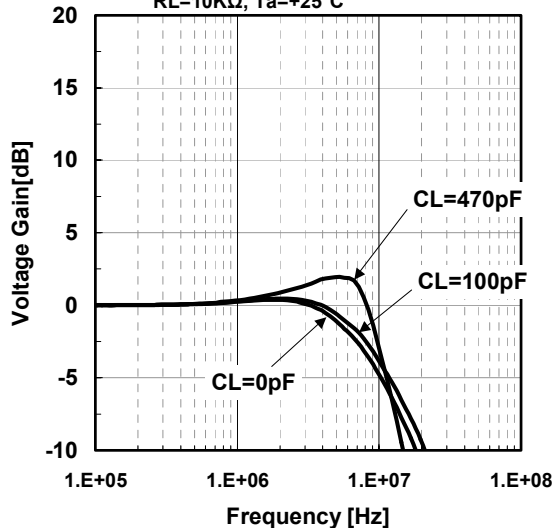
Voltage Gain & Phase vs. Frequency

$GV = 40dB$, $RF = 100k\Omega$, $RG = 1k\Omega$,
 $RL = 2.5k\Omega$, $CL = 0pF$, $Ta = 25^\circ C$



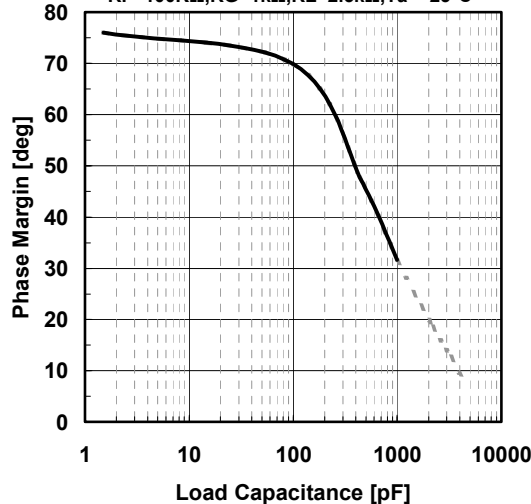
Peak Gain of Voltage Follower

$V+/V- = 2.5V$, $GV = 0dB$, $RS = 50\Omega$,
 $RL = 10k\Omega$, $Ta = +25^\circ C$



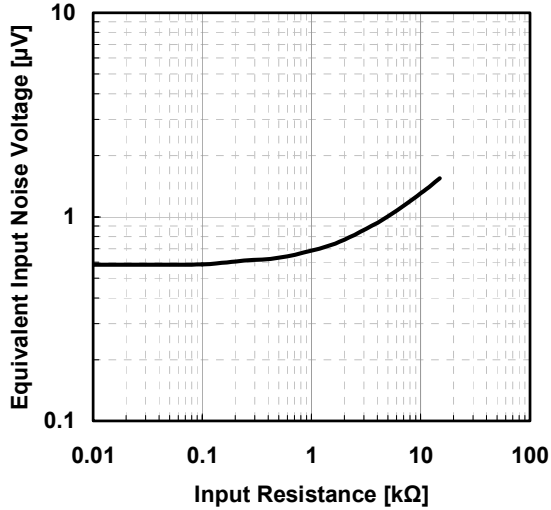
Phase Margin vs. Load Capacitance

$V+/V- = \pm 2.5V$, $GV = 40dB$,
 $RF = 100k\Omega$, $RG = 1k\Omega$, $RL = 2.5k\Omega$, $Ta = +25^\circ C$



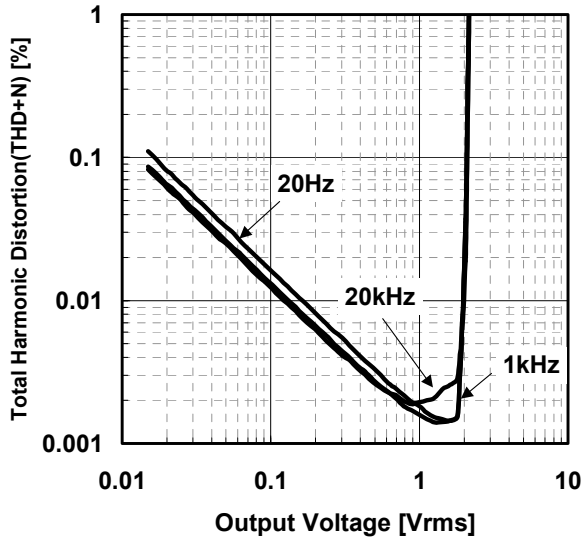
**Equivalent Input Noise Voltage
vs. Input Resistance**

$V+/V- = \pm 3.0V$, $R_F = 100k\Omega$, $R_G = 100\Omega$, JIS A, $T_a = 25^\circ C$



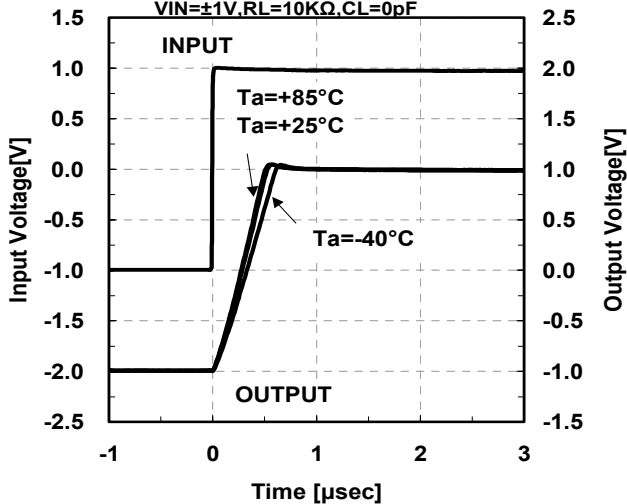
**Total Harmonic Distortion
vs. Output Voltage**

$V+/V- = \pm 3.0V$, $GV = 10dB$, $R_L = 4K\Omega$, $T_a = 25^\circ C$



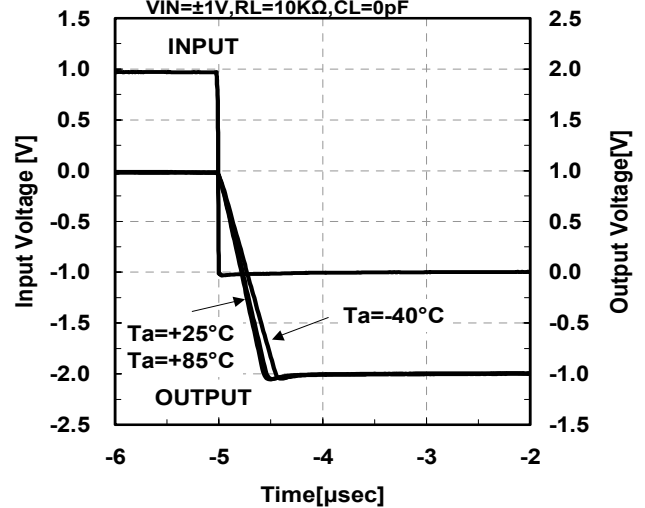
Pulse Response (Rise)

$V+/V- = \pm 2.5V$, $AV = 0dB$, $f = 100kHz$,
 $V_{IN} = \pm 1V$, $R_L = 10K\Omega$, $C_L = 0pF$



Pulse Response (Fall)

$V+/V- = \pm 2.5V$, $AV = 0dB$, $f = 100kHz$,
 $V_{IN} = \pm 1V$, $R_L = 10K\Omega$, $C_L = 0pF$



■ MEMO

[CAUTION]

The specifications on this databook are only given for information , without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[NJR:](#)

[NJM2740V-TE1](#) [NJM2740M-TE2](#) [NJM#2740M-TE2](#) [NJM#2740V-TE1](#)



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.