Designated client product

This product will be discontinued its production in the near term.
And it is provided for customers currently in use only, with a time limit.
It can not be available for your new project. Please select other new or existing products.
For more information, please contact our sales office in your region.

New Japan Radio Co.,Ltd.

www.njr.com

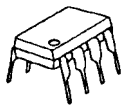
DUAL HIGH VOLTAGE AND LOW POWER OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJM2147 is a dual high voltage and low power operational amplifier IC.

The feature of high operating voltage is suitable for high supply voltage items,such as PBX,and others.

■ PACKAGE OUTLINE



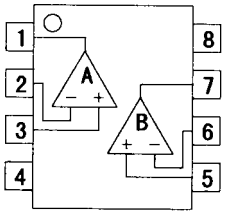
NJM2147D

NJM2147M

■ FEATURES

- High Operating Voltage (±8V~±28V)
- High Slew Rate (0.5V/μs typ.)
- Low Operating Current (175μA typ.)
- Short-Circuit Protection
- Package Outline DIP8,DMP8
- Bipolar Technology

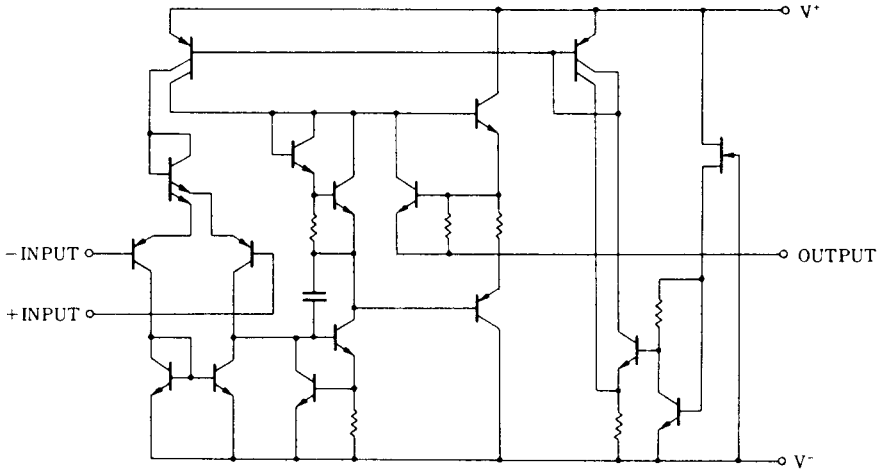
■ PIN CONFIGURATION



NJM2147D
NJM2147M

PIN FUNCTION
1.A OUTPUT
2.A –INPUT
3.A +INPUT
4.V^-
5.B +INPUT
6.B –INPUT
7.B OUTPUT
8.V^+

■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25˚C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+/V^-	± 30	V
Input Voltage	V_{IC}	± 28 (note)	V
Differential Input Voltage	V_{ID}	± 30	V
Power Dissipation	P_D	(DIP8) 500 (DMP8) 300	mW
Operating Temperature Range	T_{opr}	-40~+85	˚C
Storage Temperature Range	T_{stg}	-40~+125	˚C

(note) When supply voltage is less than ±15V, the absolute maximum input voltage is equal to the supply voltage.

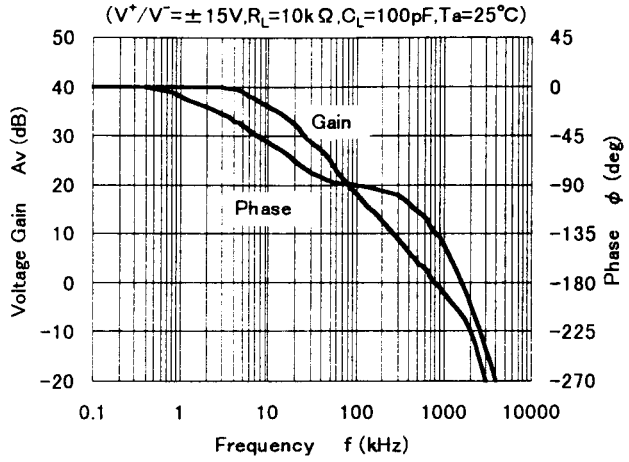
■ ELECTRICAL CHARACTERISTICS

(V^+/V^-=±15V,Ta=25˚C)

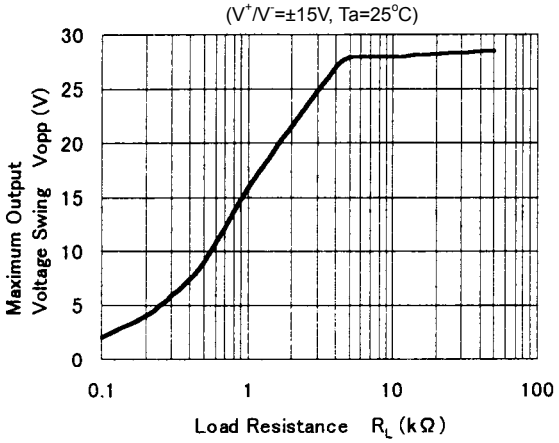
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V^+		± 8	± 15	± 28	V
Input Offset Voltage	V_{IO}	R_S≦10kΩ	-	1.0	5.0	mV
Input Bias Current	I_B		-	15	250	nA
Input Offset Current	I_{IO}		-	1	80	nA
Large Signal Voltage Gain	A_V	R_L≧10kΩ,V_O=±10V	60	88	-	dB
Input Common Mode Voltage Range	V_{ICM}		± 12	± 13	-	V
Common Mode Rejection Ratio	CMR	R_S≦10kΩ,V_{IC}=±12V	60	90	-	dB
Supply Voltage Rejection Ratio	SVR	R_S≦10kΩ,V^+/V^-=±14V~±28V	74	110	-	dB
Maximum Peak-to-peak Output Voltage Swing 1	V_{OM1}	R_L≧10kΩ	± 10	± 14	-	V
Maximum Peak-to-peak Output Voltage Swing 2	V_{OM2}	R_L≧50kΩ	± 13	± 14	-	V
Operating Current	I_{CC}	R_L=∞ (All Circuit)	-	175	300	μA
Short-circuit Output Current	I_{OS}		-	± 6	-	mA
Slew Rate	SR	R_L=10kΩ,C_L=100pF,V_{IN}=10V	-	0.5	-	V/μs
Response Time (Rise Time)	t_R	R_L=10kΩ,C_L=100pF,V_{IN}=20mV	-	0.3	-	μs
Equivalent Input Noise Voltage	e_n	A_V=20dB,f=1kHz	-	50	-	nV/√Hz

■ TYPICAL CHARACTERISTICS

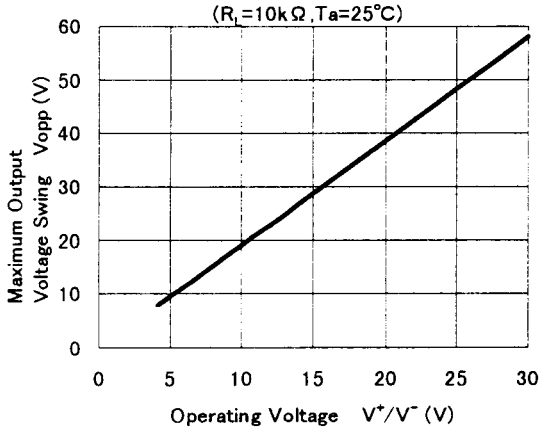
Voltage Gain, Phase vs. Frequency
($V^+/V^-=\pm15V, R_L=10k\Omega, C_L=100pF, Ta=25°C$)



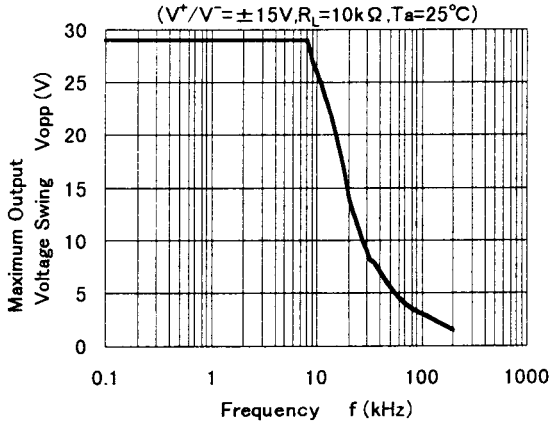
Maximum Output Voltage Swing
vs. Load Resistance
($V^+/V^-=\pm15V$, Ta=25°C)



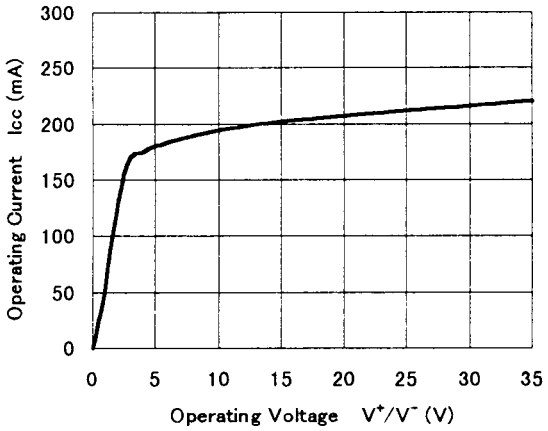
Maximum Output Voltage Swing
vs. Operating Voltage
($R_L=10k\Omega$, Ta=25°C)



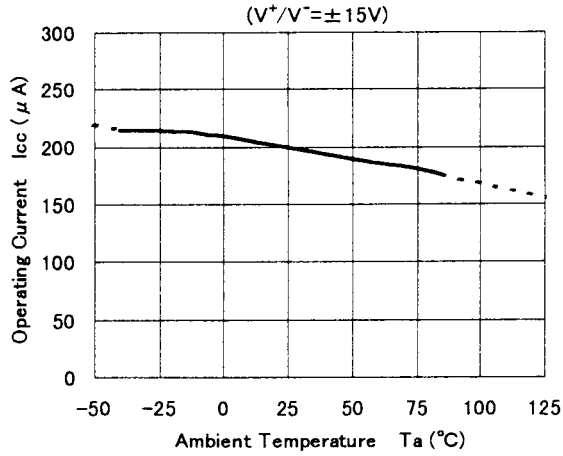
Maximum Output Voltage Swing
vs. Frequency
($V^+/V^-=\pm15V, R_L=10k\Omega$, Ta=25°C)



Operating current vs. Operating Voltage
(No Input Signal RL=∞, Ta=25°C)

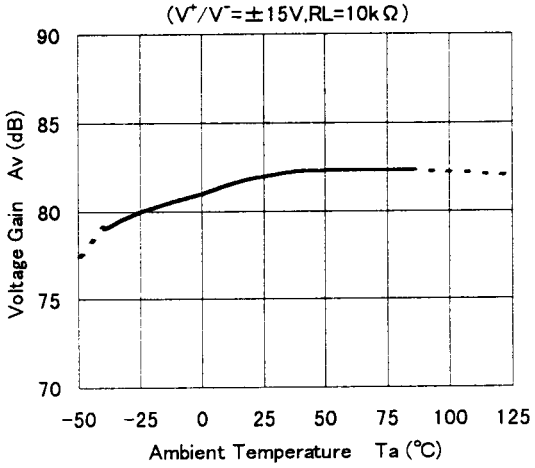


Operating Current vs. Temperature
($V^+/V^-=\pm15V$)

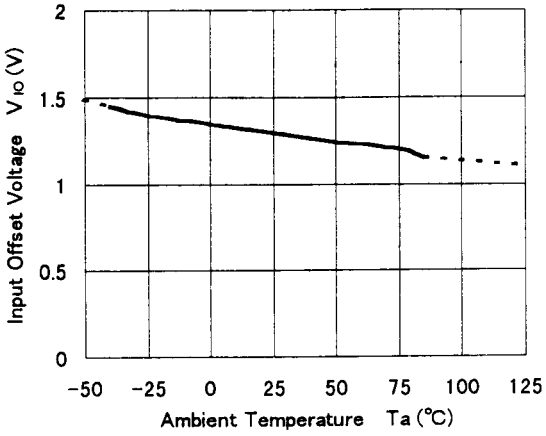


■ TYPICAL CHARACTERISTICS

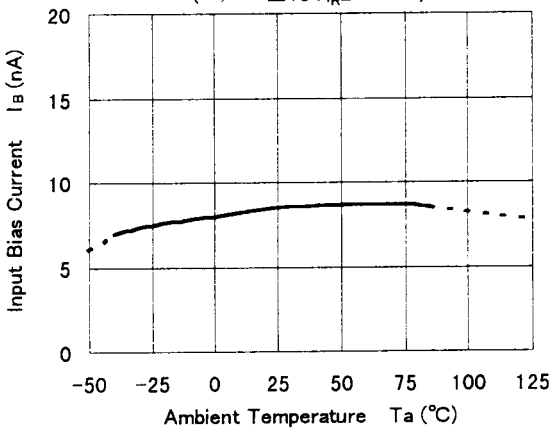
Voltage Gain vs. Temperature
(V^+/V^-=±15V,RL=10kΩ)



Input Offset Voltage vs. Temperature
(V^+/V^-=±15V)



Input Bias Current vs. Temperature
(V^+/V^-=±15V,RL=10kΩ)



Maximum Output Voltage vs. Temperature
(V^+/V^-=±15V,RL=10kΩ)