

■ 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

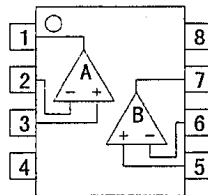


NJM2147M

■ FEATURES

- High Operating Voltage ( $\pm 8V \sim \pm 28V$ )
- High Slew Rate (0.5V/us typ.)
- Low Operating Current (175uA typ.)
- Short-Circuit Protection
- Package Outline DIP8, DMP8
- Bipolar Technology

■ PIN CONFIGURATION



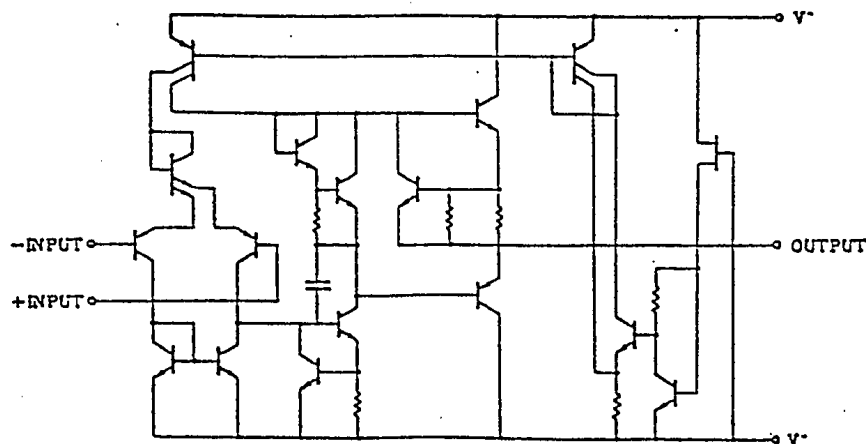
NJM2147D  
NJM2147M

PIN FUNCTION

1. A OUTPUT
2. A -INPUT
3. A +INPUT
4. V<sup>-</sup>
5. B +INPUT
6. B -INPUT
7. B OUTPUT
8. V<sup>+</sup>

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■ EQUIVALENT CIRCUIT



## ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup> /V <sup>-</sup>	±30	V
Input Voltage	V <sub>IC</sub>	±28 (note)	V
Differential Input Voltage	V <sub>ID</sub>	±30	V
Power Dissipation	P <sub>D</sub>	(DIP8) 500 (DMP8) 300	mW
Operating Temperature Range	T <sub>OPR</sub>	-40 ~ +85	°C
Storage Temperature Range	T <sub>STG</sub>	-40 ~ +125	°C

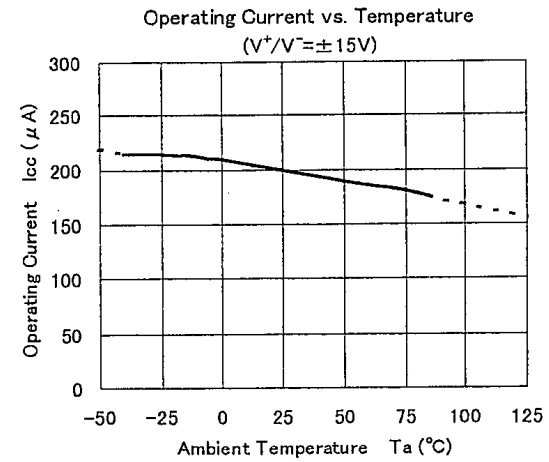
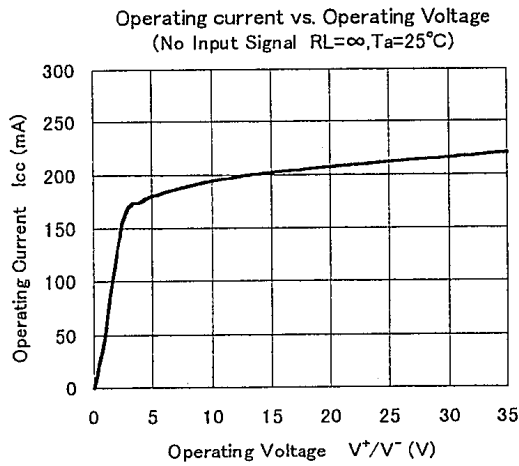
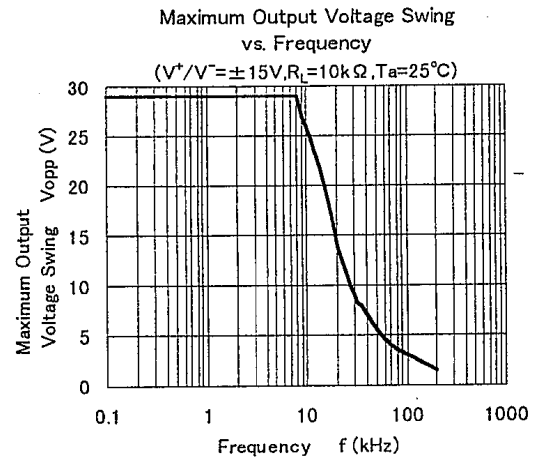
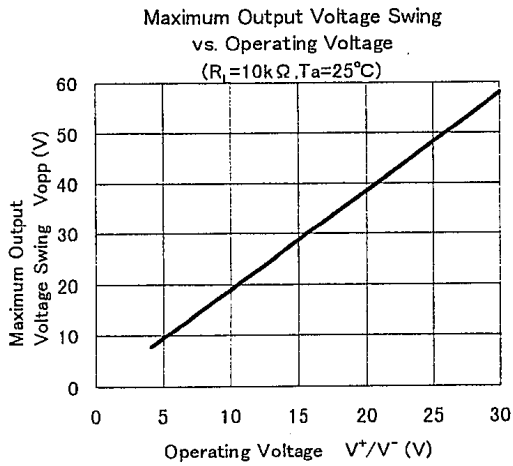
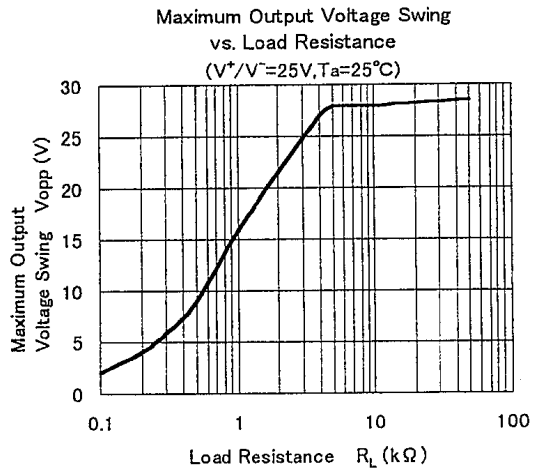
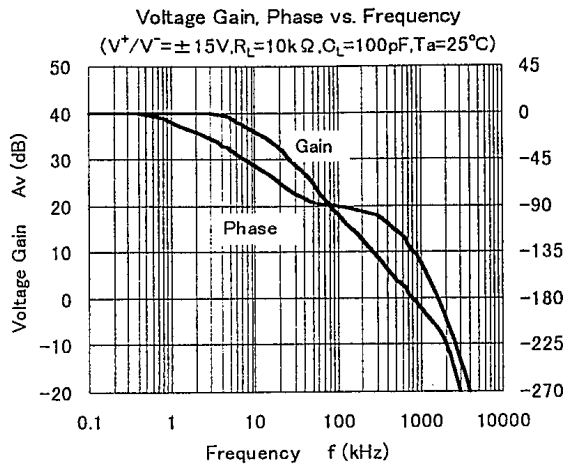
(note) When supply voltage is less than ±15V,  
the absolute maximum input voltage is equal supply voltage.

## ■ ELECTRICAL CHARACTERISTICS (V<sup>+</sup>/V<sup>-</sup>=±15V, Ta=25°C)

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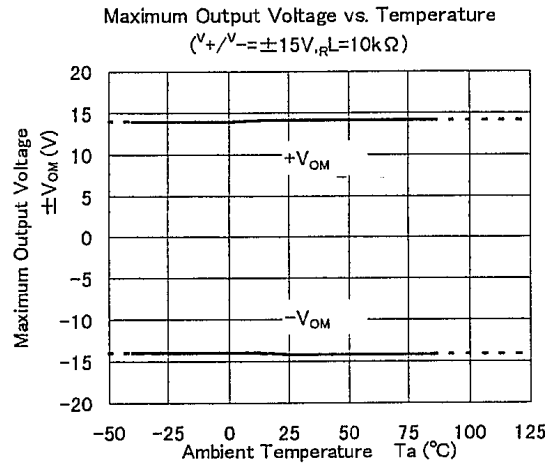
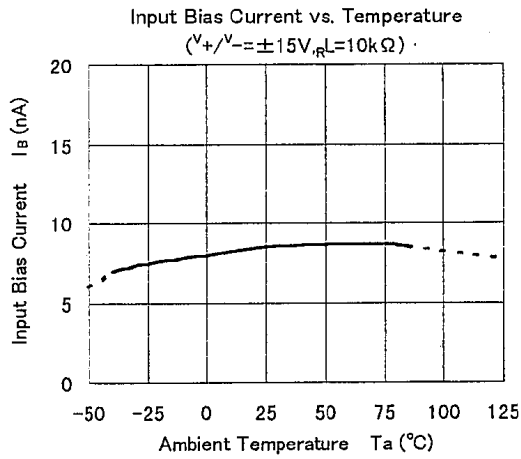
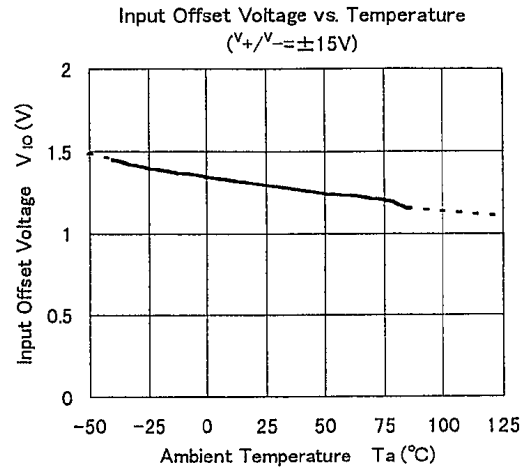
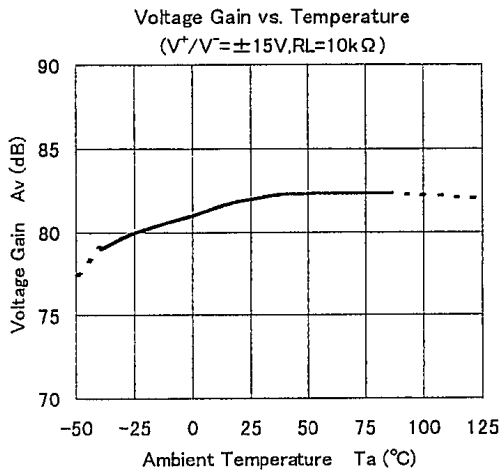
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V <sup>+</sup>		±8	±15	±28	V
Input Offset Voltage	V <sub>IO</sub>	R <sub>S</sub> ≤ 10kΩ	—	1.0	5.0	mV
Input Bias Current	I <sub>B</sub>		—	15	250	nA
Input Offset Voltage	I <sub>IO</sub>		—	1	80	nA
Large Signal Voltage Gain	A <sub>V</sub>	R <sub>L</sub> ≥ 10kΩ, V <sub>O</sub> = ±10V	60	88	—	dB
Input Common Mode	V <sub>ICM</sub>		±12	±13	—	V
Voltage Range						
Common Mode	CMR	R <sub>S</sub> ≤ 10kΩ, V <sub>IC</sub> = ±12V	60	90	—	dB
Rejection Ratio						
Supply Voltage	SVR	R <sub>S</sub> ≤ 10kΩ, V <sup>+</sup> /V <sup>-</sup> = ±14V ~ ±28V	74	110	—	dB
Rejection Ratio						
Maximum Peak-to-peak	V <sub>OM1</sub>	R <sub>L</sub> ≥ 10kΩ	±10	±14	—	V
Output Voltage Swing 1						
Maximum Peak-to-peak	V <sub>OM2</sub>	R <sub>L</sub> ≥ 50kΩ	±13	±14	—	V
Output Voltage Swing 2						
Operating Current	I <sub>CC</sub>	R <sub>L</sub> = ∞ (All Circuit)	—	175	300	uA
Short-circuit	I <sub>OS</sub>		—	±6	—	mA
Output Current						
Slew Rate	SR	R <sub>L</sub> = 10kΩ, C <sub>L</sub> = 100pF, V <sub>IN</sub> = 10V	—	0.5	—	V/us
Response Time (Rise Time)	t <sub>R</sub>	R <sub>L</sub> = 10kΩ, C <sub>L</sub> = 100pF, V <sub>IN</sub> = 20mV	—	0.3	—	us
Equivalent Input	e <sub>n</sub>	A <sub>V</sub> = 20dB, f = 1kHz	—	50	—	nV/√Hz
Noise Voltage						

■ TYPICAL CHARACTERISTICS



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## TYPICAL CHARACTERISTICS



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# NJM2147

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## MEMO

**[CAUTION]**

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