

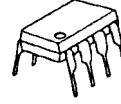
DUAL HIGH VOLTAGE AND LOW POWER OPERATIONAL AMPLIFIER

■ 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

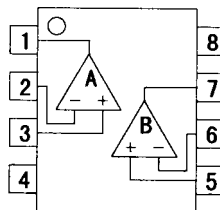


NJM2147M

■ FEATURES

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

■ PIN CONFIGURATION

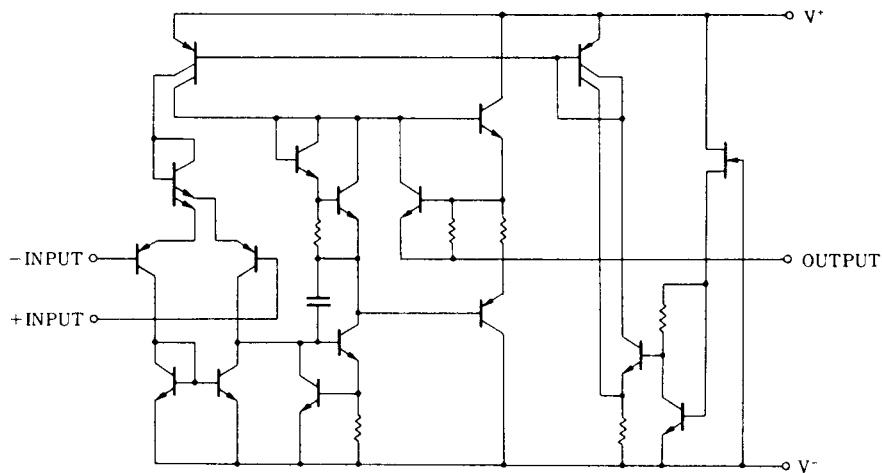


NJM2147D
NJM2147M

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



NJM2147

■ 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

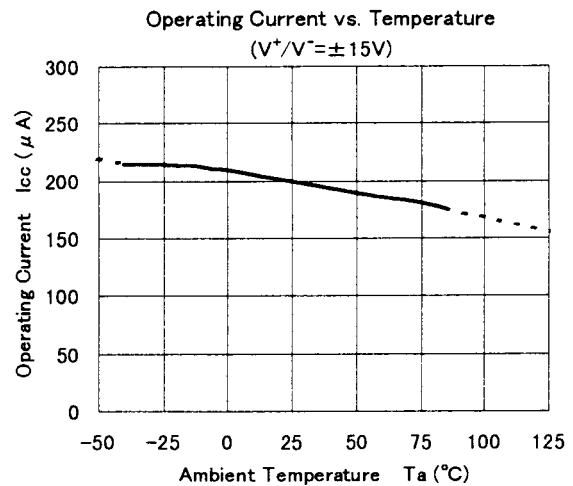
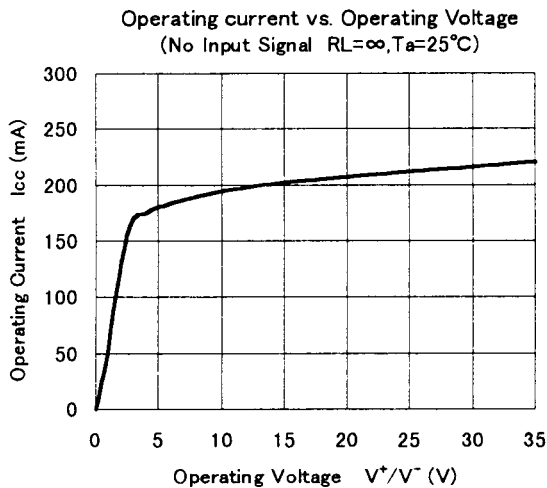
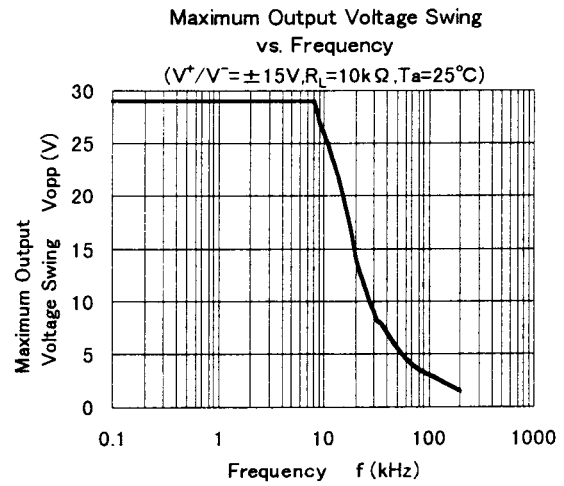
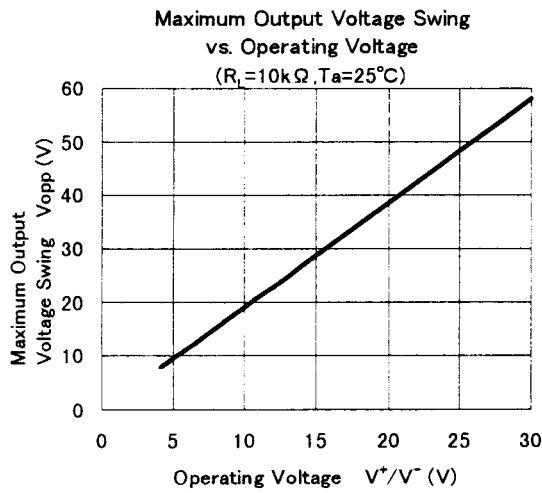
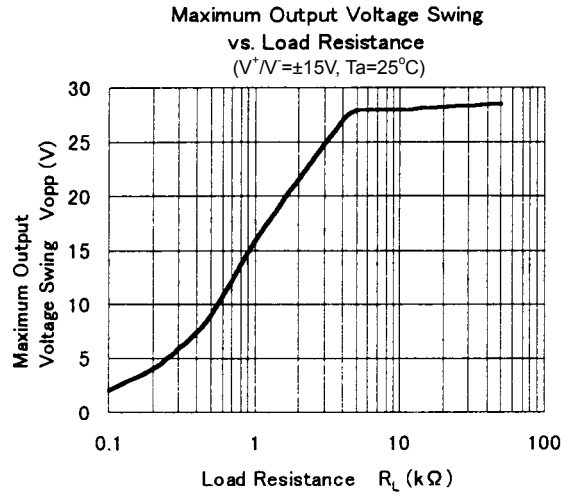
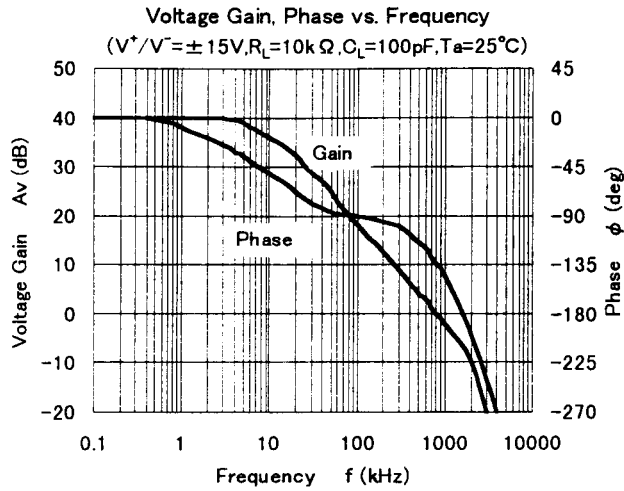
(note) When supply voltage is less than $\pm 15V$, the absolute maximum input voltage is equal to the supply voltage.

■ ELECTRICAL CHARACTERISTICS

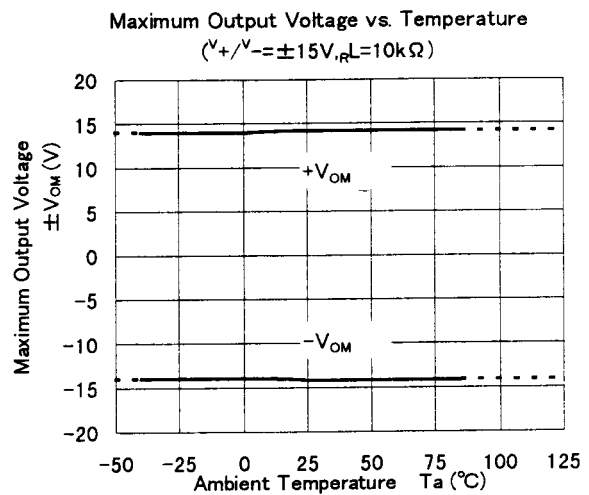
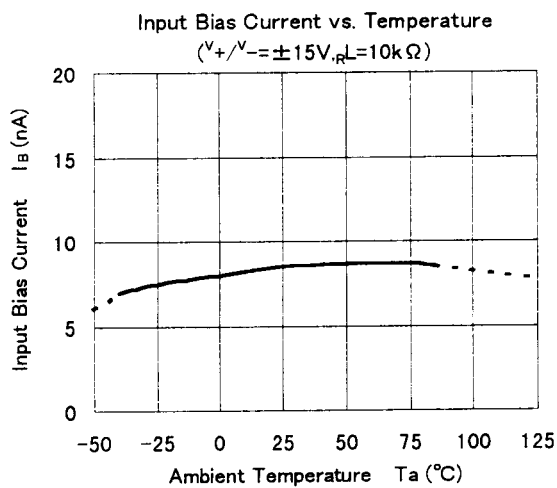
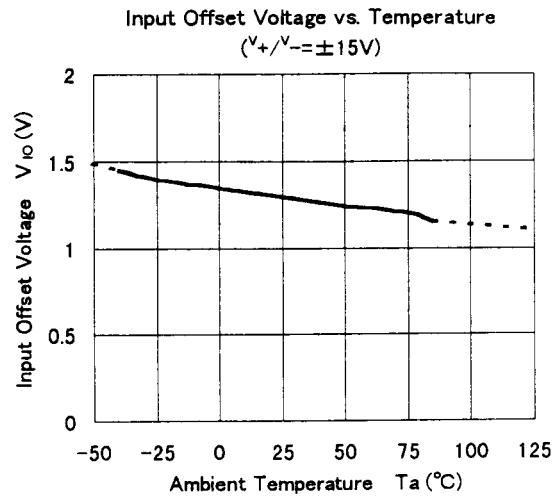
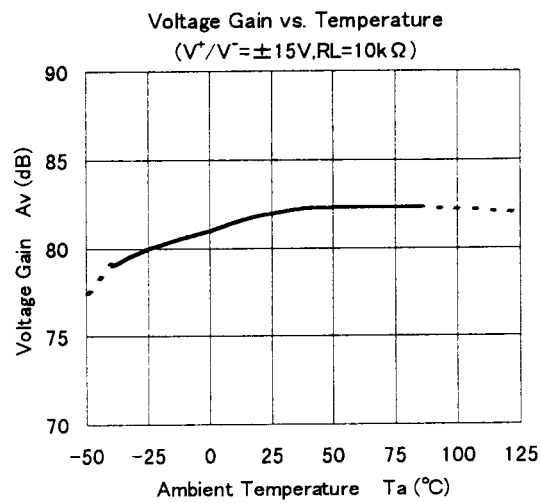
($V^+V^- = \pm 15V, Ta = 25^\circ C$)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V^+		± 8	± 15	± 28	V
Input Offset Voltage	V_{IO}	$R_S \leq 10k\Omega$	-	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	$R_L \geq 10k\Omega, V_O = \pm 10V$	60	88	-	dB
Input Common Mode Voltage Range	V_{ICM}		± 12	± 13	-	V
Common Mode Rejection Ratio	CMR	$R_S \leq 10k\Omega, V_{IC} = \pm 12V$	60	90	-	dB
Supply Voltage Rejection Ratio	SVR	$R_S \leq 10k\Omega, V^+V^- = \pm 14V \sim \pm 28V$	74	110	-	dB
Maximum Peak-to-peak Output Voltage Swing 1	V_{OM1}	$R_L \geq 10k\Omega$	± 10	± 14	-	V
Maximum Peak-to-peak Output Voltage Swing 2	V_{OM2}	$R_L \geq 50k\Omega$	± 13	± 14	-	V
Operating Current	I_{CC}	$R_L = \infty$ (All Circuit)	-	175	300	μA
Short-circuit Output Current	I_{OS}		-	± 6	-	mA
Slew Rate	SR	$R_L = 10k\Omega, C_L = 100pF, V_{IN} = 10V$	-	0.5	-	V/ μs
Response Time (Rise Time)	t_R	$R_L = 10k\Omega, C_L = 100pF, V_{IN} = 20mV$	-	0.3	-	μs
Equivalent Input Noise Voltage	e_n	$A_V = 20dB, f = 1kHz$	-	50	-	nV/ \sqrt{Hz}

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS



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