

DUAL OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJM2141 is a high gain, high output current dual operational amplifier in ultra miniature surface mount package, which drive $\pm 25\text{mA}$ at extremely low operating voltages ($V^+ / V^- = \pm 2\text{V}$).

The NJM2141 realize wide bandwidth, low noise, high slew rate and low distortion, which is suitable for audio, telecommunication and instrumentation applications.

■ PACKAGE OUTLINE

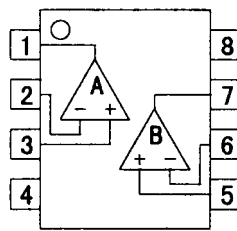


NJM2141R

■ FEATURES

- Operating Voltage ($\pm 2\text{V} \sim \pm 10\text{V}$)
- Slew Rate ($3\text{V}/\mu\text{s}$ typ.)
- Bandwidth (8MHz typ.)
- High Output Current ($I_o = 25\text{mA}$)
- Bipolar Technology
- Package Outline VSP8

■ PIN CONFIGURATION

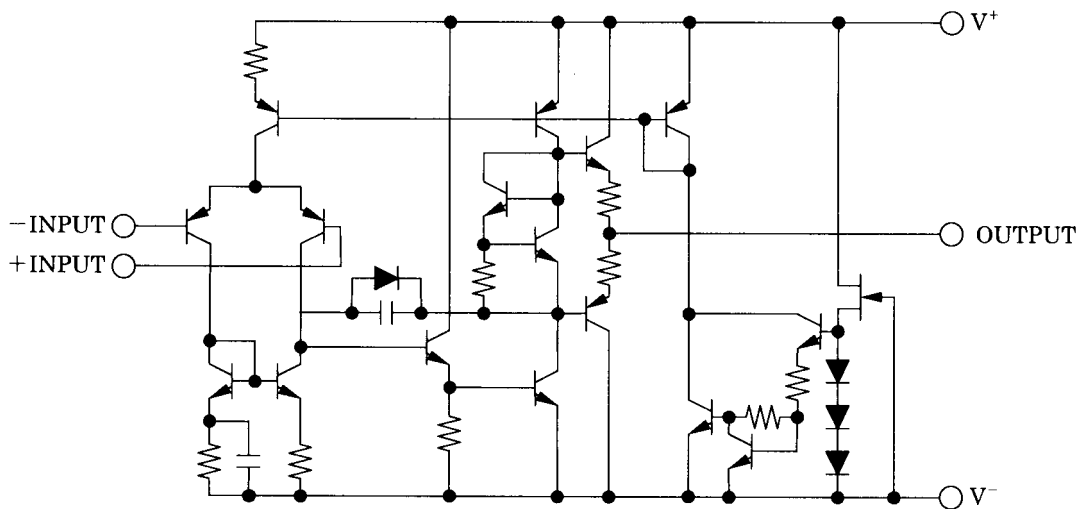


NJM2141R

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 (1/2 Shown)



NJM2141

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+ / V^-	± 10	V
Differential Input Voltage	V_{ID}	± 15	V
Input Voltage	V_{IC}	± 7.5 (note1)	V
Power Dissipation	P_D	320	mW
Operating Temperature Range	T_{opr}	-20~+75	°C
Storage Temperature Range	T_{stg}	-40~+125	°C

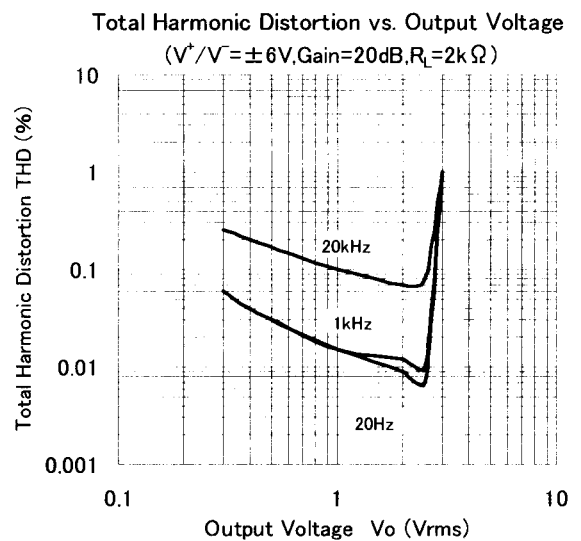
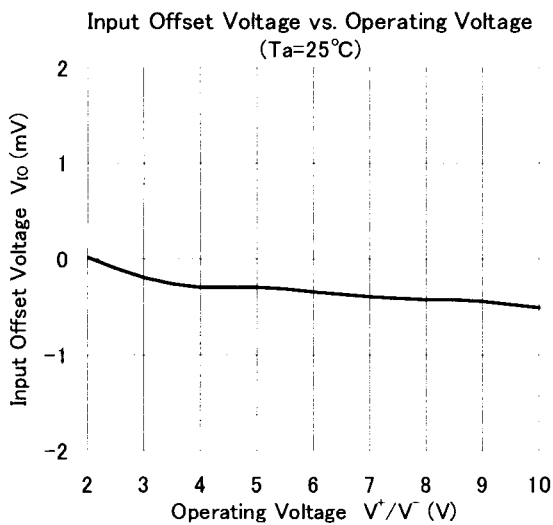
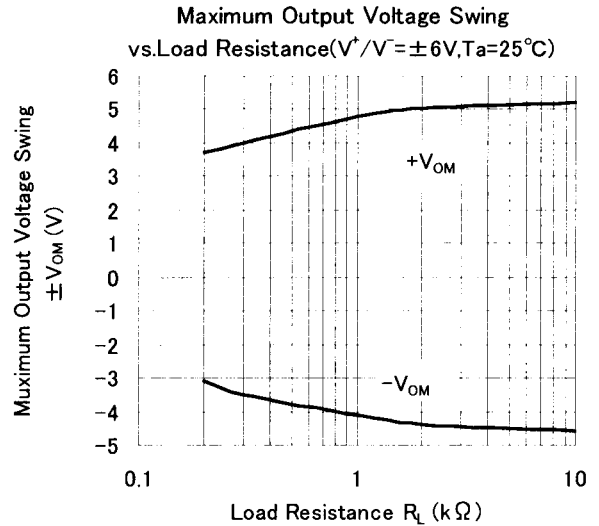
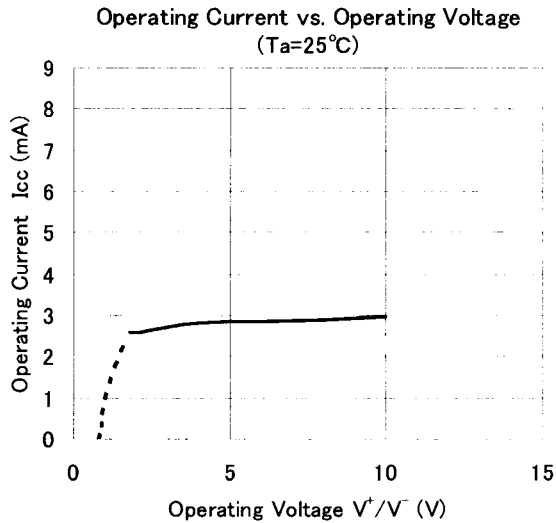
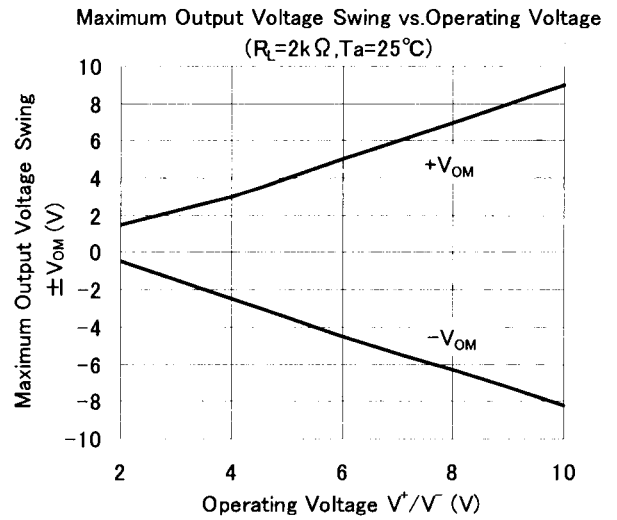
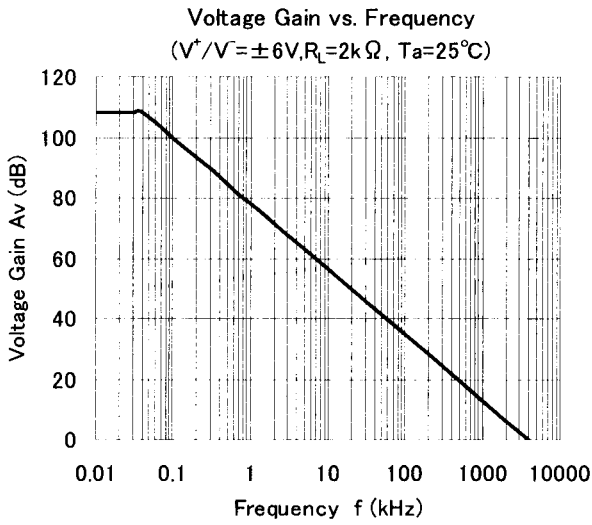
(note1) When input voltage is less than ±7.5V, the absolute maximum control voltage is equal to the input voltage.

■ ELECTRICAL CHARACTERISTICS

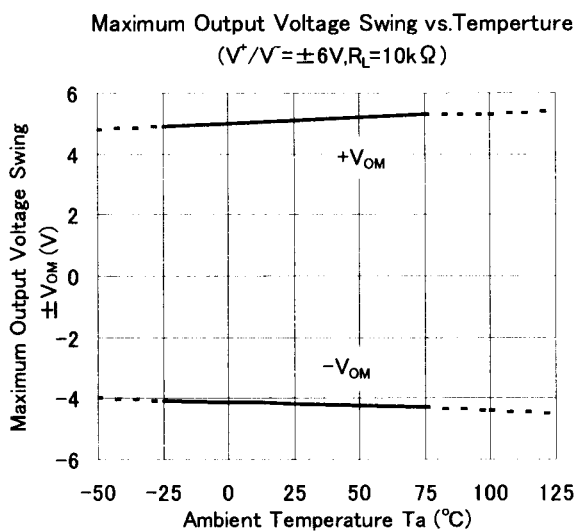
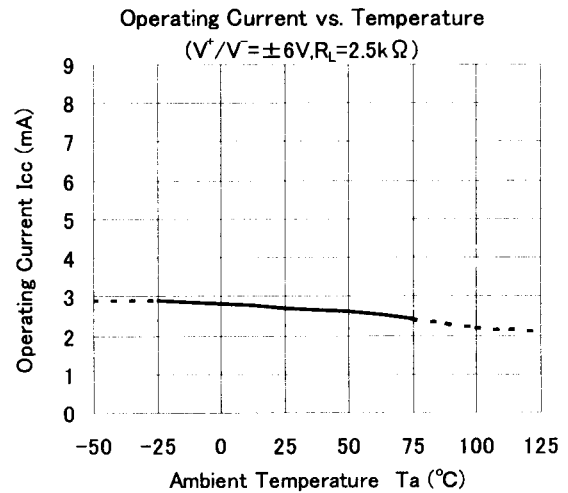
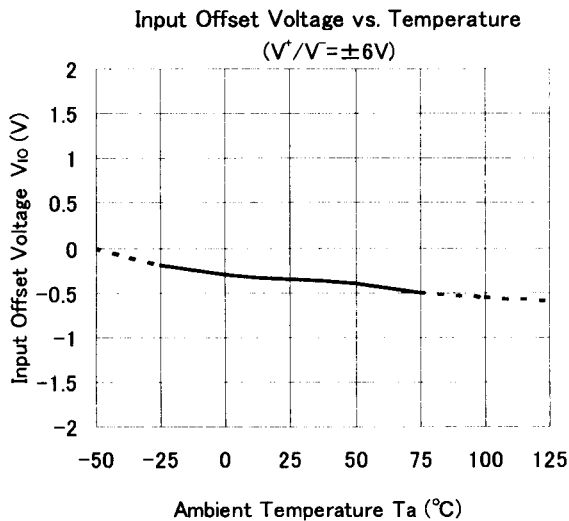
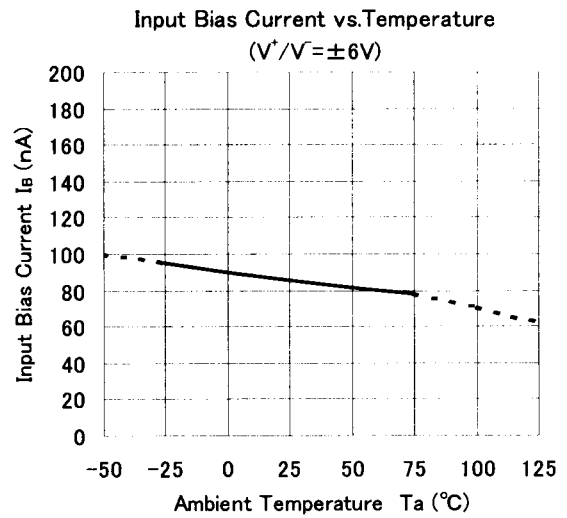
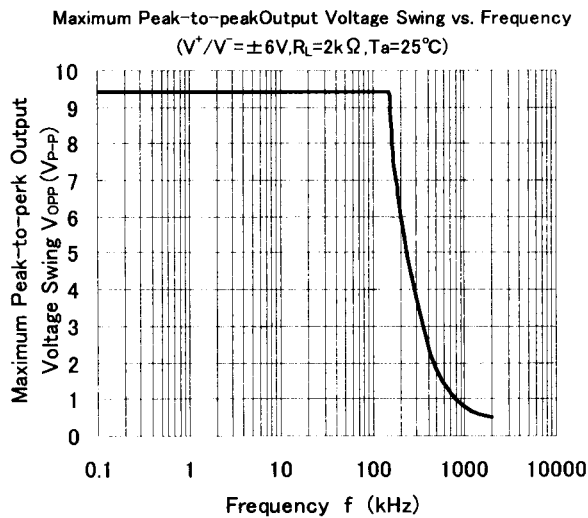
($V^+ / V^- = 5V, Ta = 25°C$)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	$R_S = 0\Omega$	-	0.5	6	mV
Input Offset Current	I_{IO}		-	5	200	nA
Input Bias Current	I_B		-	80	500	nA
Input Resistance	R_{IN}		0.3	2.5	-	MΩ
Large Signal Voltage Gain	A_V	$R_L \geq 2k\Omega, V_O = \pm 4V$	86	100	-	dB
Maximum Output Voltage Swing 1	V_{OM1}	$R_L \geq 2k\Omega$	+4.0 -3.5	+5.0 -4.5	-	V
Maximum Output Voltage Swing 2	V_{OM2}	$V^+ / V^- = \pm 9V, I_O = 25mA$	+4.0 -4.0	+6.0 -5.0	-	V
Input Common Mode Voltage Range	V_{ICM}		± 4.0	± 4.5	-	V
Common Mode Rejection Ratio	CMR	$R_S \leq 10k\Omega$	70	90	-	dB
Supply Voltage Rejection Ratio	SVR	$R_S \leq 10k\Omega$	76.5	90	-	dB
Operating Current	I_{CC}		-	2.7	5.7	mA
Slew Rate	SR		-	3	-	V/μs
Gain Bandwidth Product	GB		-	8	-	MHz
Equivalent Input Noise Voltage	V_{NI}	RIAA, $R_S = 2k\Omega, 39kHz$ LPF	-	1.2	-	μVrms

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS



[CAUTION]

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