

## SINGLE-SUPPLY 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

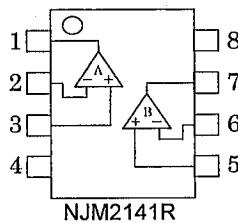


NJM2141R

### FEATURES

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

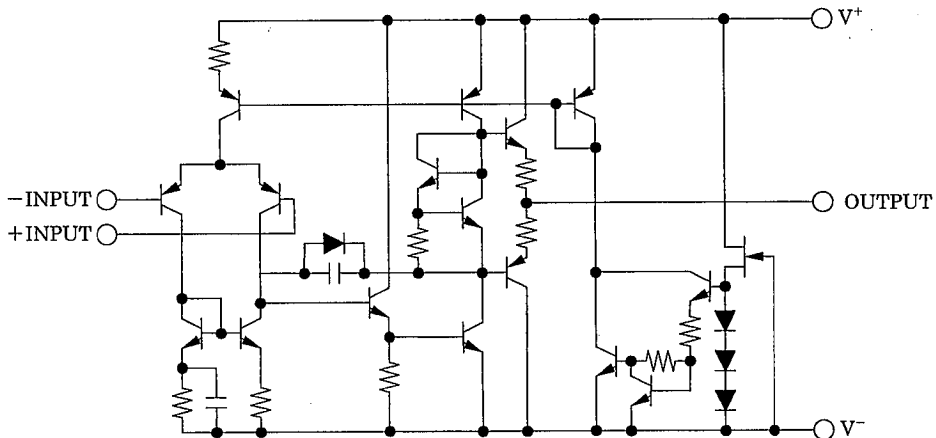
### PIN CONFIGURATION



### 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)



## ■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup> /V <sup>-</sup>	±10	V
Differential Input Voltage	V <sub>ID</sub>	±15	V
Input Voltage	V <sub>IC</sub>	±7.5(note 1)	V
Power Dissipation	P <sub>D</sub>	320	mW
Operating Temperature Range	T <sub>opr</sub>	-20~75	°C
Storage Temperature Range	T <sub>stg</sub>	-40~125	°C

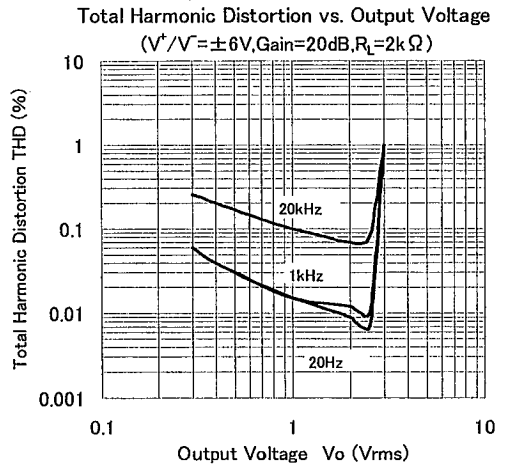
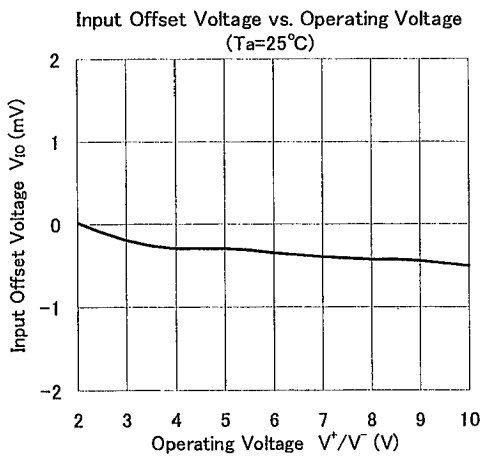
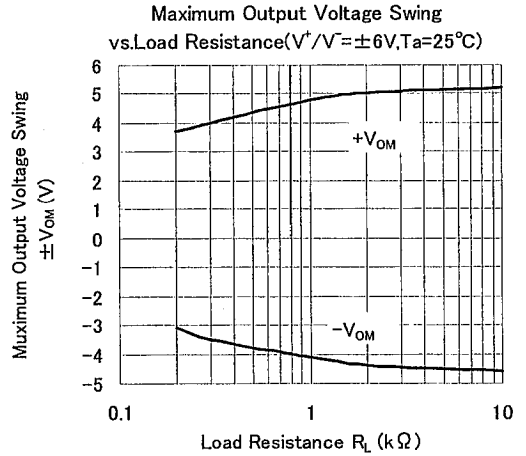
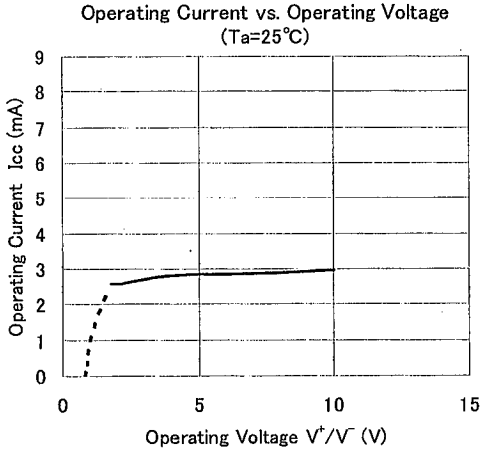
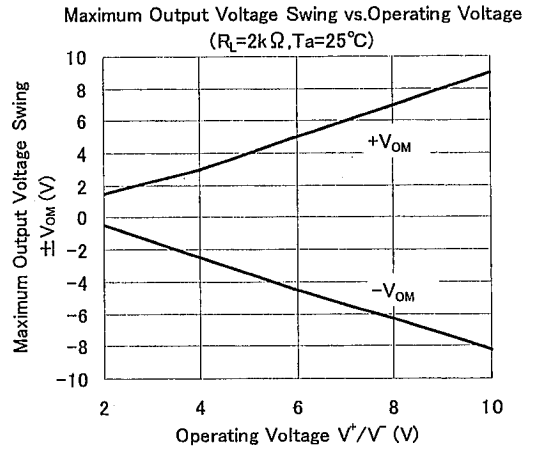
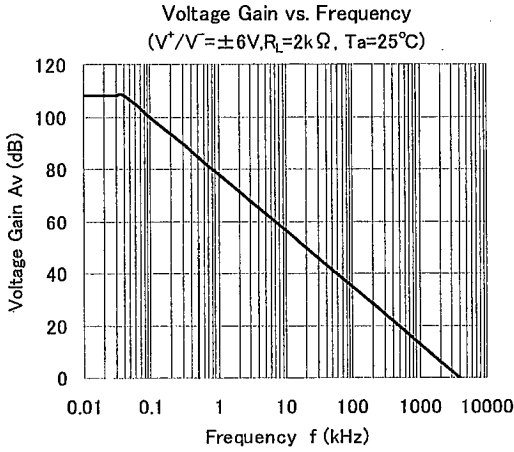
(note 1) : When input voltage is less than ±7.5V, the absolute maximum control voltage is equal to the input voltage.

## ■ ELECTRICAL CHARACTERISTICS

(V<sup>+</sup>/V<sup>-</sup>=5V, Ta=25°C)

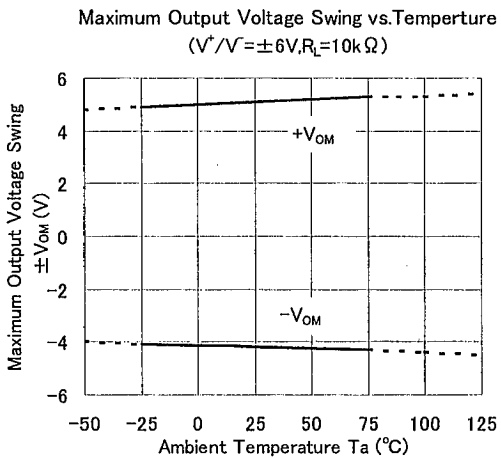
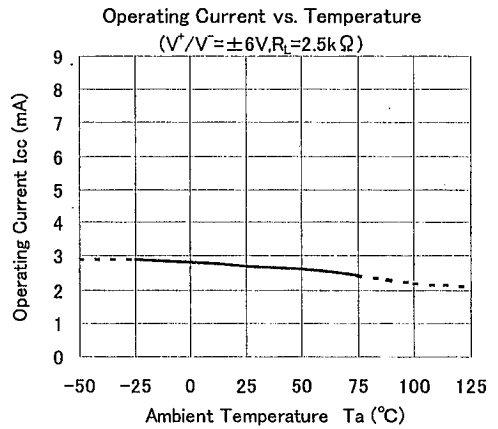
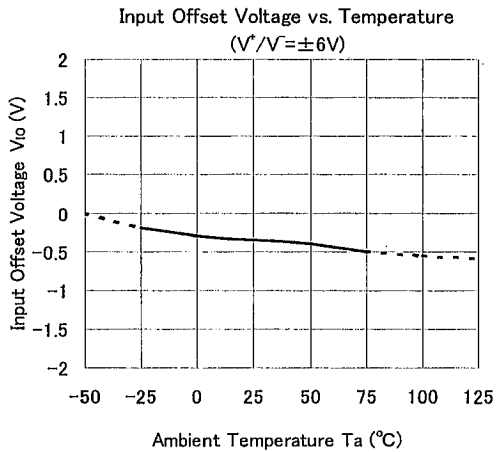
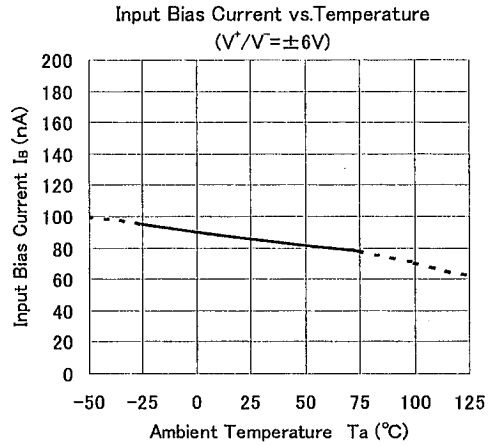
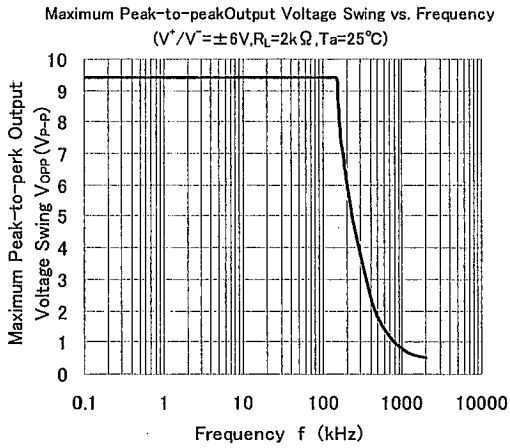
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V <sub>IO</sub>	R <sub>S</sub> =0Ω	—	0.5	6	mV
Input Offset Current	I <sub>IO</sub>		—	5	200	nA
Input Bias Current	I <sub>B</sub>		—	80	500	nA
Input Resistance	R <sub>IN</sub>		0.3	2.5		MΩ
Large Signal Voltage Gain	A <sub>V</sub>	R <sub>L</sub> ≥2kΩ, V <sub>O</sub> =±4V	86	100	—	dB
Maximum Output Voltage Swing1	V <sub>OM1</sub>	R <sub>L</sub> ≥2kΩ	+4.0 -3.5	+5.0 -4.5	—	V
Maximum Output Voltage Swing2	V <sub>OM2</sub>	V <sup>+</sup> /V <sup>-</sup> =±9V, I <sub>O</sub> =25mA	+4.0 -4.0	+6.0 -5.0	—	V
Input Common Mode Voltage Range	V <sub>ICM</sub>		±4.0	±4.5	—	V
Common Mode Rejection Ratio	CMR	R <sub>S</sub> ≤10kΩ	70	90	—	dB
Supply Voltage Rejection Ratio	SVR	R <sub>S</sub> ≤10kΩ	76.5	90	—	dB
Operating Current	I <sub>CC</sub>		—	2.7	5.7	mA
Slew Rate	SR		—	3	—	V/μs
Gain Bandwidth Product	GB		—	8	—	MHz
Equivalent Input Noise Voltage	V <sub>NI</sub>	RIAA, R <sub>S</sub> =2kΩ, 39kHz LPF	—	1.2	—	μV <sub>rms</sub>

■ TYPICAL CHARACTERISTICS



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## TYPICAL CHARACTERISTICS



## MEMO

[CAUTION]

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