SINGLE SUPPLY HIGH-SLEW RATE SINGLE OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJM2716 is single supply single high slew rate operational amplifier.

It is applicable to A/D converters, FAX, scanner which require the single supply operation and high slew rate.

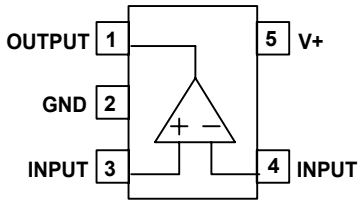
■ PACKAGE OUTLINE

NJM2716F

■ FEATURES

- Single Supply
- Operating Voltage +2.7V to 12V
- Operating Current 5.5mA max.
- High Slew Rate 40V/μs typ.
- Bipolar Technology
- Package Outline SOT−23−5

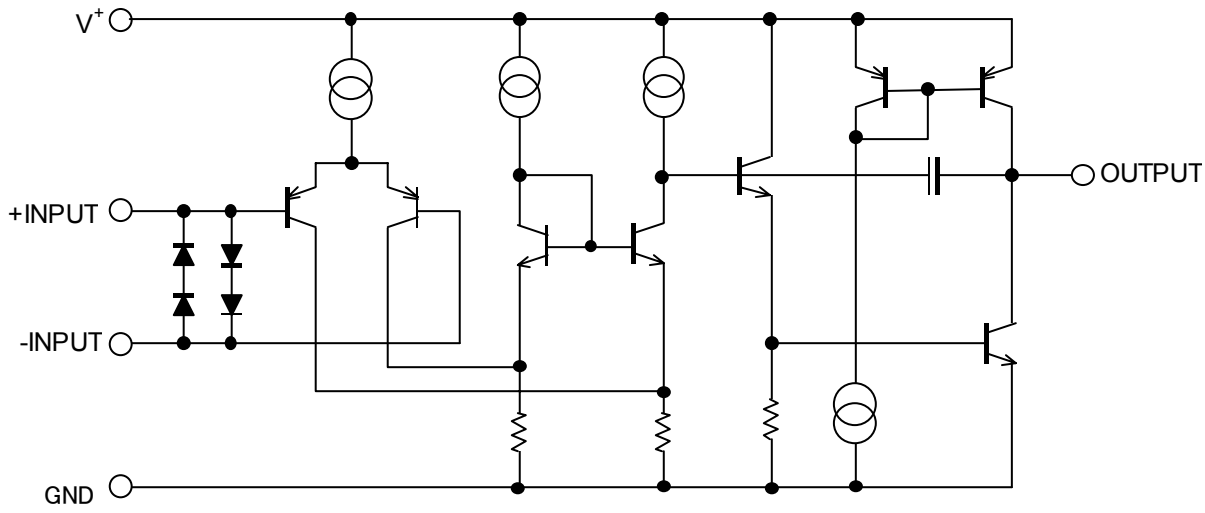
■ PIN CONFIGURATION



NJM2716F

PIN FUNCTION
1.OUTPUT
2.GND
3.+INPUT
4.-INPUT
5.V^+

■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	15.0	V
Power Dissipation	P_D	200	mW
Differential Input Voltage	V_{ID}	±3	V
Input Voltage	V_{IC}	-0.3 to +15 (note)	V
Output Sink Current	I_{SINK}	10	mA
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +125	°C

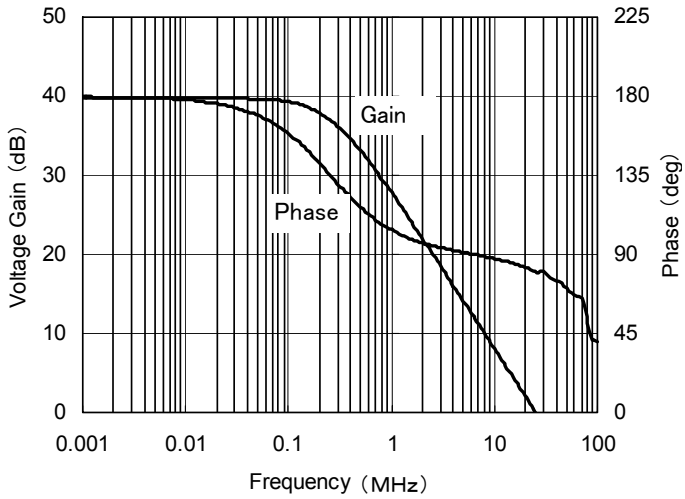
(note) When supply voltage is less than 15V, the absolute maximum input voltage is equal to the supply voltage.

■ ELECTRICAL CHARACTERISTICS (V^+=5V,Ta=25°C)

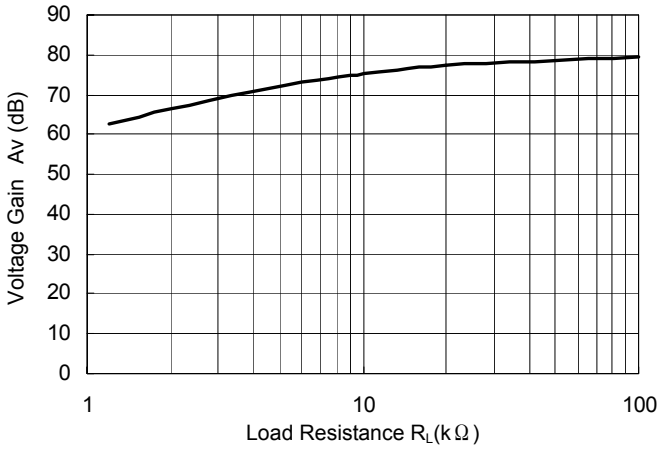
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	Rs=0Ω	-	1	10	mV
Input Offset Current	I_{IO}		-	0.2	0.5	μA
Input Bias Current	I_B		-	1	2.5	μA
Voltage Gain	A_V	R_L≥10kΩ	60	75	-	dB
Input Common Mode Voltage Range	V_{ICM}		0 to 3.8	-	-	V
Common Mode Rejection Ratio	CMR		45	80	-	dB
Supply Voltage Rejection Ratio	SVR		50	75	-	dB
Maximum Output Voltage1	V_{OM}^+1	R_L=4kΩ to GND	4.3	4.5	-	V
	V_{OM}^-1		-	0.05	0.1	
Maximum Output Voltage 2	V_{OM}^+2	R_L=4kΩ to 2.5V	4.5	4.7	-	V
	V_{OM}^-2		-	0.1	0.5	
Output Source Current	I_{SOURCE}		1	2.5	-	mA
Output Sink Current	I_{SINK}		2.5	5	-	mA
Operating Current	Icc	R_L=∞	-	4.2	5.5	mA
Slew Rate	SR		-	40	-	V/μs
Unity Gain Bandwidth	f_T		-	30	-	MHz

■ TYPICAL CHARACTERISTICS

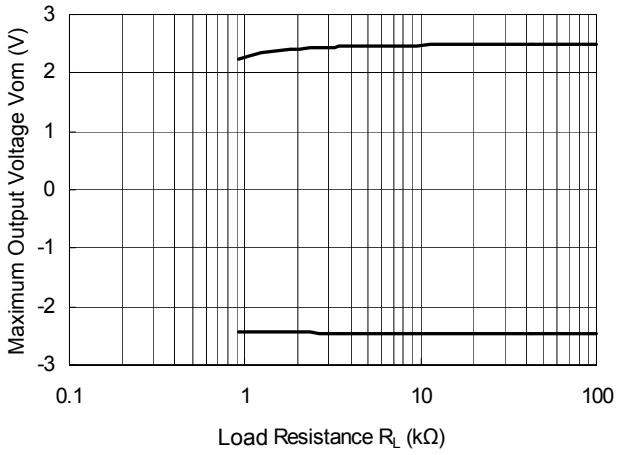
Voltage Gain, Phase vs. Frequency
($V^{+/-}$=2.5V, R_L=10kΩ , C_L=10pF, Gain=40dB, Ta=25°C)



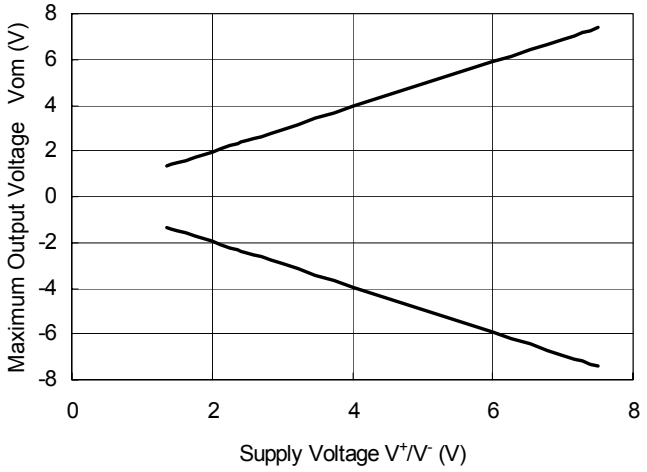
Voltage Gain vs. Load Resistance
(V^+=5V, Ta=25°C)



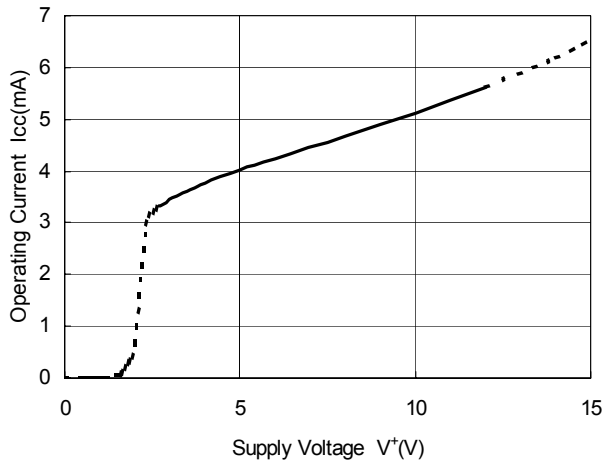
Maximum Output Voltage vs. Load Resistance
(V^+/V^-=±2.5V, Ta=25°C)



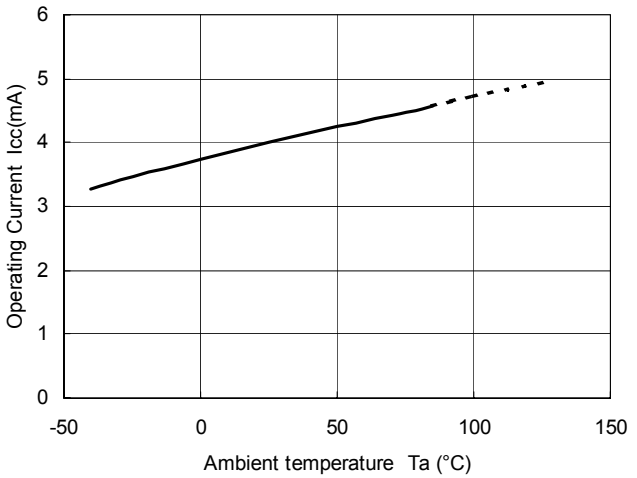
Maximum Output Voltage vs. Supply Voltage
(R_L=4kΩ, Ta=25°C)



Operating Current vs. Supply Voltage
(Ta=25°C)

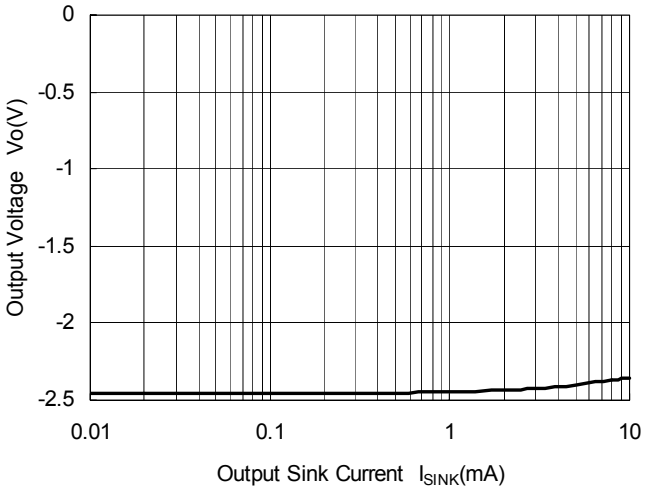


Operating Voltage vs. Temperature
(V^+=5V)

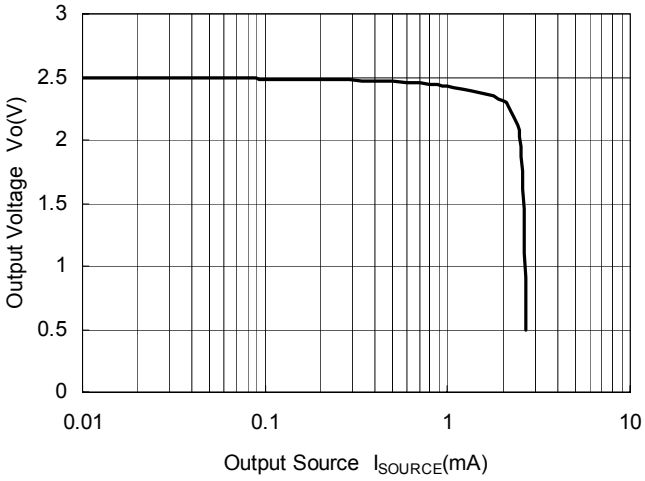


■ TYPICAL CHARACTERISTICS

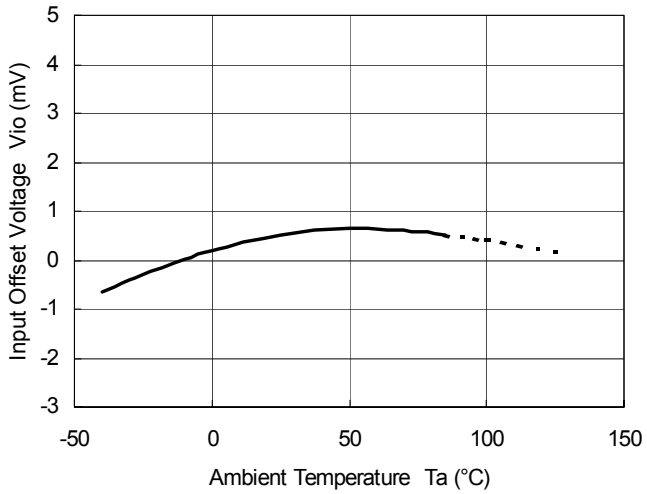
Output Voltage vs. Output Sink Current
(V^+/V^-=±2.5V,Ta=25°C)



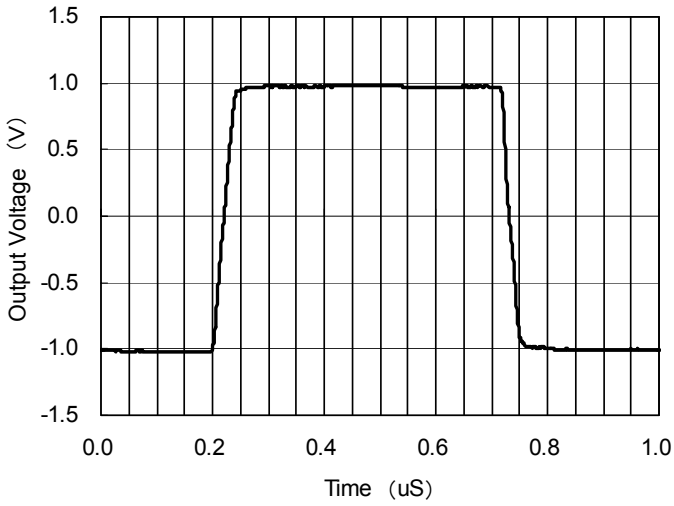
Output Voltage vs. Output Source Current
(V^+/V^-=±2.5V,Ta=25°C)



Input Offset Voltage vs. Temperature
(V^+=5V)



Output Voltage vs.Time
(V^+/V^-=±2.5V,Vin=2Vpp,f=1MHz,RL=10kΩ,CL=10pF,Av=0dB)



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