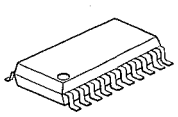
ULTRA WIDE BAND & HIGH SLEWRATE HEX OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

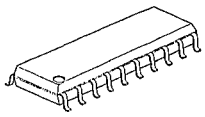
The NJM 2116 is an ultra wide band, high slew rate, low operating current, and low operating voltage, hex operational amplifiers.

It is applicable to active filter, small consumption portable electrical equipment, and high speed analog signal processing.

■ PACKAGE OUTLINE



NJM2116V

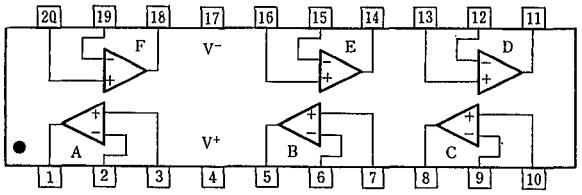


NJM2116M

■ FEATURES

- Hex Circuit
- Low Operating Voltage (±1.35V～±6V)
- Ultra Wide Band (200MHz typ.)
- High Slew Rate (45V/μs typ.)
- Low Operating Current (3.4mA typ.)
- Package Outline SSOP20, DMP20
- Bipolar Technology

■ PIN CONFIGURATION

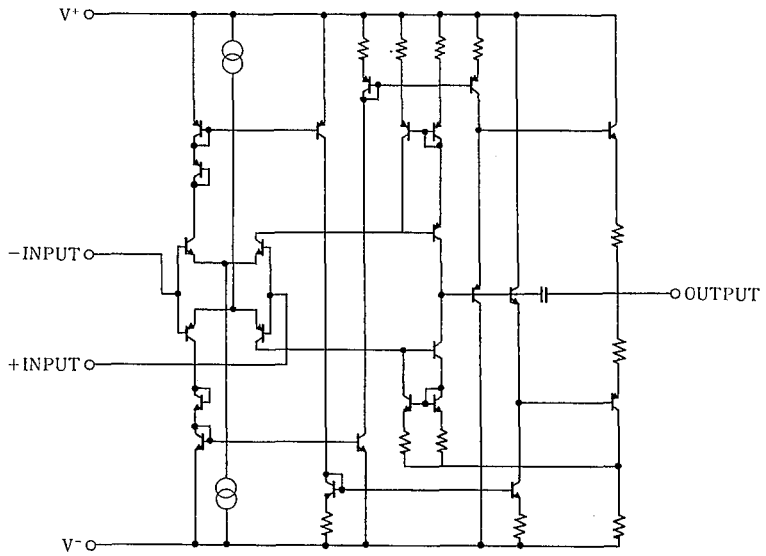


NJM2116M
NJM2116V

PIN FUNCTION

1. A OUTPUT	11. D OUTPUT
2. A −INPUT	12. D −INPUT
3. A +INPUT	13. D +INPUT
4. V^+	14. E OUTPUT
5. B OUTPUT	15. E−INPUT
6. B −INPUT	16. E +INPUT
7. B +INPUT	17. V^-
8. C OUTPUT	18. F OUTPUT
9. C −INPUT	19. F −INPUT
10. C +INPUT	20. F +INPUT

■ EQUIVALENT CIRCUIT (1/6 shown)



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+/V^-	±6.75	V
Differential Input Voltage	V_{ID}	±3	V
Power Dissipation	P_D	(DMP-20) 300 (SSOP-20) 300	mW
Operating Temperature Range	T_{opr}	−40～+85	℃
Storage Temperature Range	T_{stg}	−50～+125	℃

■ ELECTRICAL CHARACTERISTICS

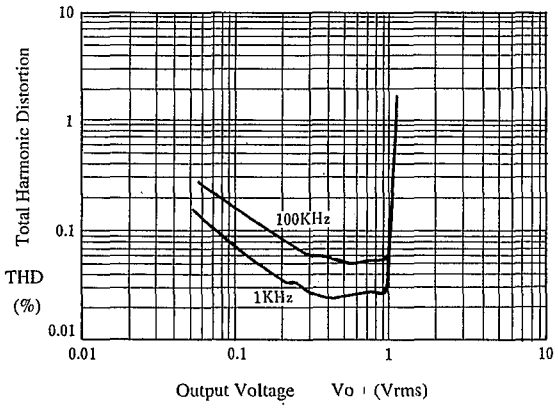
(V^+/V^-=±2.5V, Ta=25℃)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V^+/V^-		±1.35	±2.50	±6.00	V
Input Offset Voltage	V_{IO}	R_S=0Ω	−	1.0	5.0	mV
Input Bias Current	I_B		−	0.5	2.0	μA
Input Offset Current	I_{IO}		−	20	200	nA
Large Signal Voltage Gain	A_V		65	75	−	dB
Input Common Mode Voltage Range	V_{ICM}		±1.2	±1.5	−	V
Common Mode Rejection Ratio	CMR	-1V≦V_{cm}≦+1V	45	60	−	dB
Supply Voltage Rejection Ratio	+SVR		50	60	−	dB
	−SVR		70	80	−	
Maximum Output Voltage Swing	V_{OM}	R_L=1kΩ	1.1 −1.2	1.4 −0.9	− −	V
Operating Current	I_{CC}	R_L=∞(all Amp.)	−	3.4	4.5	mA
Slew Rate	SR	A_V=0dB	−	45	−	V/μs
Gain Bandwidth Product	GB	60dB・500kHz	120	200	−	MHz
Phase Margin	ϕ_M	40dB	−	25	−	deg.
Unity Gain Bandwidth	f_T	40dB	−	40	−	MHz

■ TYPICAL CHARACTERISTICS

Total Harmonic Distortion vs. Output Voltage

($V^+/V^-=\pm2.5V$, Gain=20dB, $R_L=2k\Omega$)



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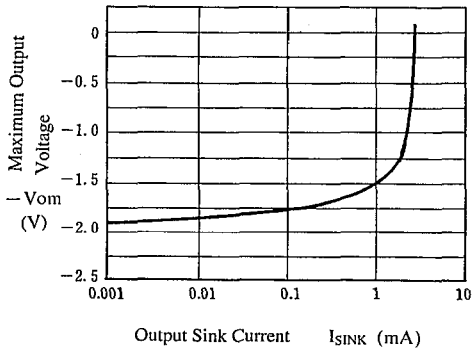
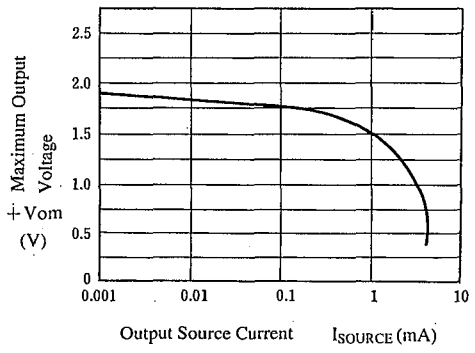
Maximum Output Voltage vs. Output Sink Current

($V^+/V^-=\pm2.5V$, Ta=25°C)



Maximum Output Voltage vs. Output Source Current

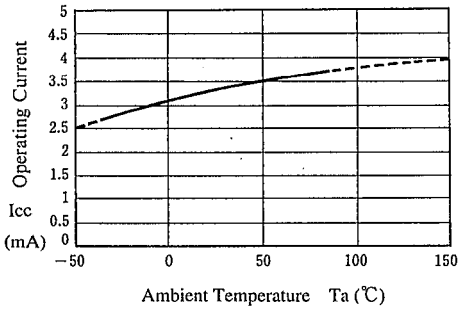
($V^+/V^-=\pm2.5V$, Ta=25°C)



■ TYPICAL CHARACTERISTICS

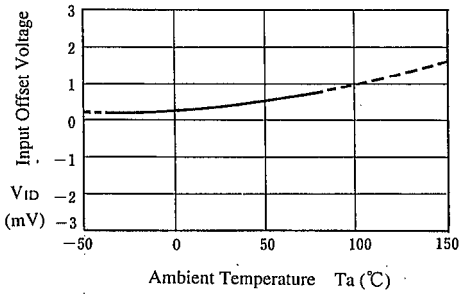
Operating Current vs. Temperature

($V^+/V^-=\pm2.5V$)



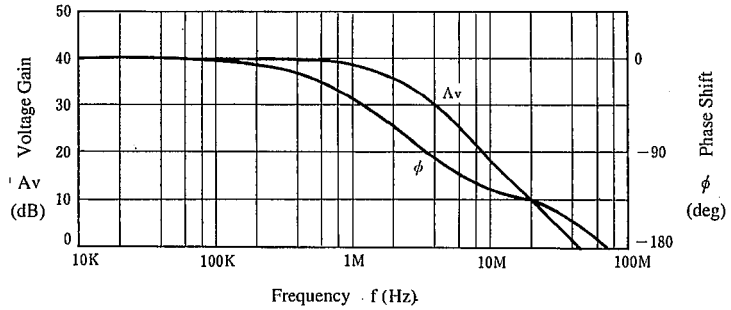
Input Offset Voltage vs. Temperature

($V^+/V^-=\pm2.5V$)



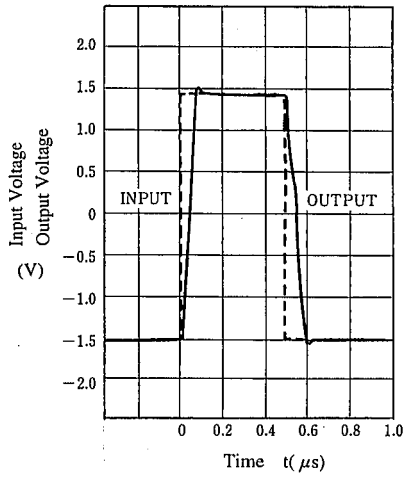
Voltage Gain Phase Shift vs. Frequency

($V^+/V^-=\pm2.5V$, $R_L=2k\Omega$, $C_L=10pF$, 40dBAmp, Ta=25℃)



Pulse Response

($V^+/V^-=\pm2.5V$, $R_L=2k\Omega$, $C_L=10pF$, Av=0dB, 40dBAmp, Ta=25℃)



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