

ULTRA WIDE BAND, HIGH SLEW RATE SINGLE OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJM2136 is an ultra wide band, high slew rate single operational amplifier operated from low voltage ($\pm 1.35V$).

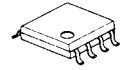
It can apply to active filter, high-speed analog and digital signal processor, line driver, HDTV, industrial measurement equipment and others.

It can also apply to portable communication items because of low operating voltage and low operating current.

■ PACKAGE OUTLINE



NJM2136V

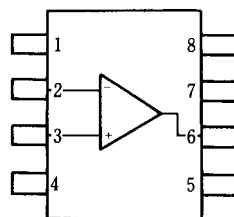


NJM2136M

■ FEATURES

- Input Offset Voltage Balance
- Operating Voltage ($\pm 1.35V \sim \pm 6V$)
- Ultra Wide Band (200MHz typ.)
- High Slew Rate ($45V/\mu s$ typ.)
- Low Operating Current (0.63mA typ.)
- Bipolar Technology
- Package Outline SSOP8,DMP8

■ PIN CONFIGURATION

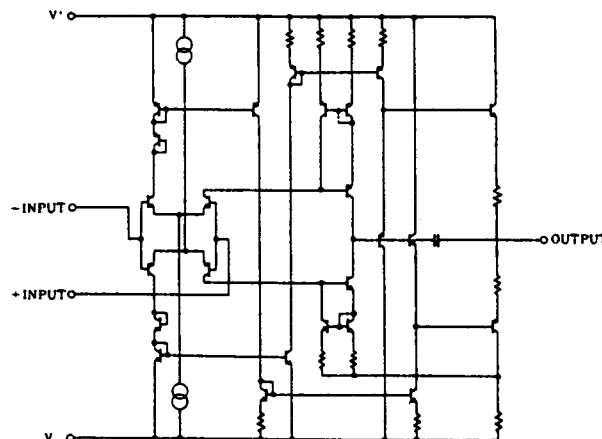


NJM2136M
NJM2136V

PIN FUNCTION

- 1.BAL
- 2.-INPUT
- 3.+INPUT
- 4.V⁻
- 5.NC
- 6.OUTPUT
- 7.V⁺
- 8.BAL

■ EQUIVALENT CIRCUIT



NJM2136

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

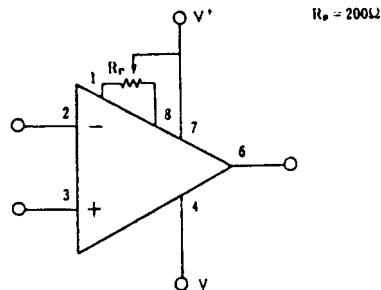
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺ /V	± 6.75	V
Differential Input Voltage	V _{ID}	± 3	V
Power Dissipation	P _D	(SSOP8) 250 (DMP8) 300	mW
Operating Temperature Range	T _{opr}	-40~+85	°C
Storage Temperature Range	T _{stg}	-50~+125	°C

■ ELECTRICAL CHARACTERISTICS

(V⁺/V⁻=±2.5V, Ta=25°C)

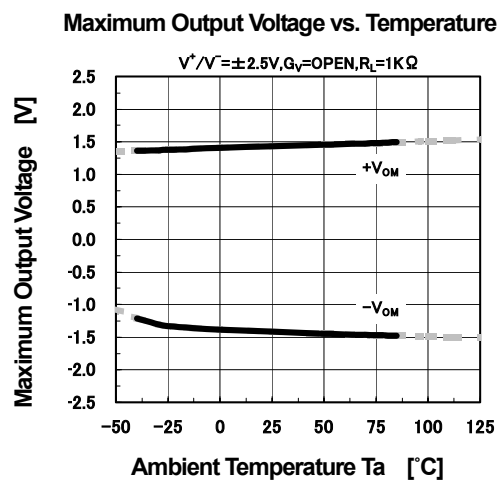
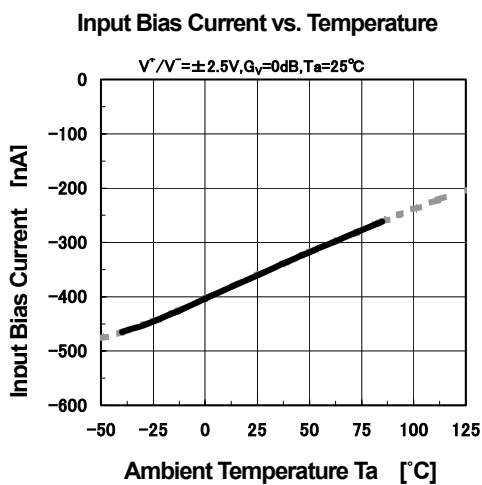
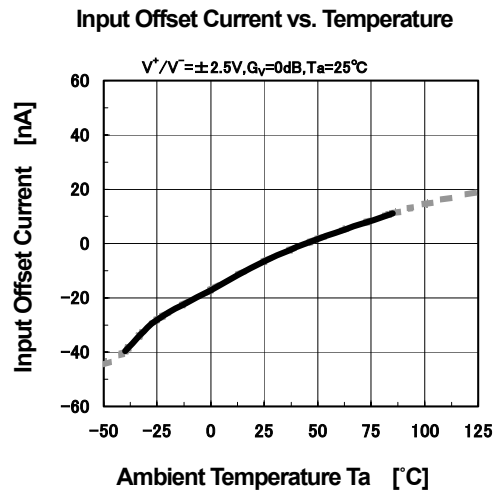
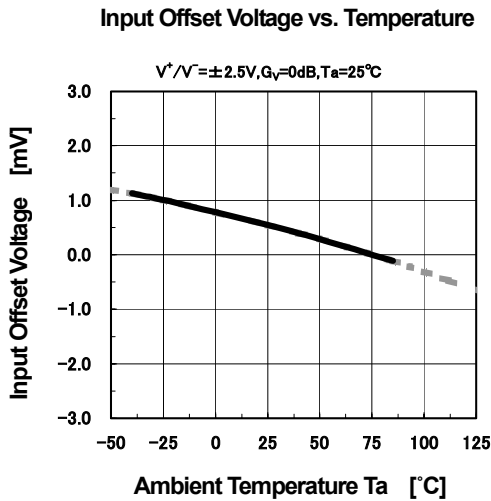
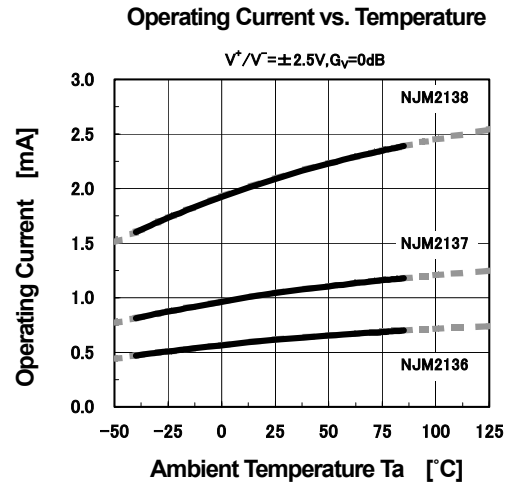
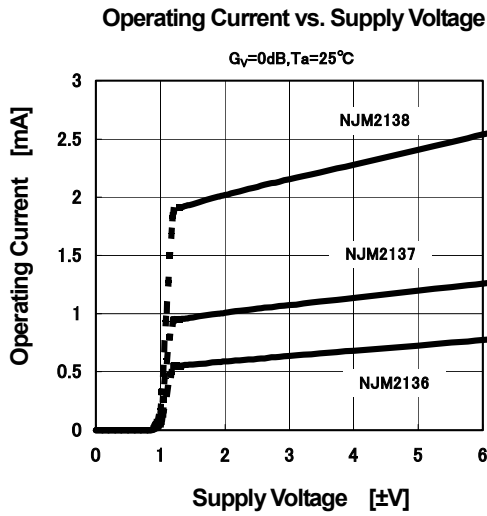
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V ⁺ /V		± 1.35	± 2.50	± 6.00	V
Input Offset Voltage	V _{IO}	R _S ≤ 0Ω	-	1.0	5.0	mV
Input Bias Current	I _B		-	0.5	2.0	μA
Input Offset Current	I _{IO}		-	20	200	nA
Large Signal Voltage Gain	A _V	R _L ≥ 10kΩ	65	75	-	dB
Input Common Mode Voltage Range	V _{ICM}		1.2 -1.2	1.5 -1.5	-	V
Common Mode Rejection Ratio	CMR	-1V ≤ V _{cm} ≤ +1V	45	60	-	dB
Supply Voltage Rejection Ratio	+SVR		70	80	-	dB
	-SVR		50	60	-	dB
Maximum Output Voltage Swing	V _{OM}	R _L = 1kΩ	1.1 -0.9	1.4 -1.2	-	V
Operating Current	I _{CC}	R _L = ∞ (all Amp.)	-	0.63	0.82	mA
Slew Rate	SR	A _v = 0dB	-	45	-	V/μs
Gain Bandwidth Product	GB	60dB • 500kHz	120	200	-	MHz
Phase Margin	∅ _M	40dB	-	25	-	deg.
Unity Gain Bandwidth	f _T	40dB	-	40	-	MHz

■ OFFSET ADJUSTMENT METHOD



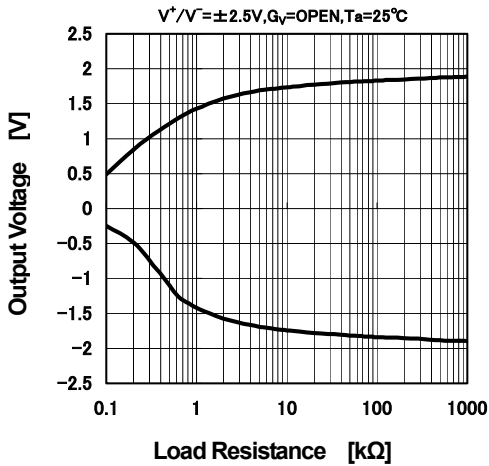
(note) The electrical characteristics change a little, in case the R_P is connected.

■ TYPICAL CHARACTERISTICS

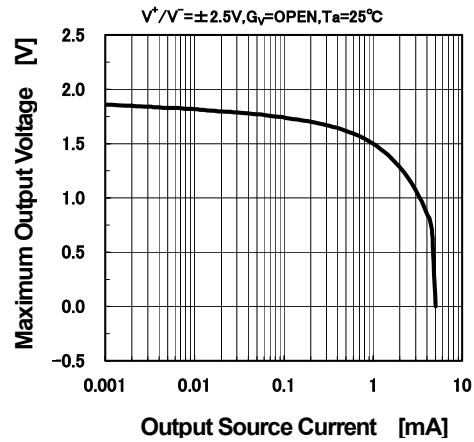


■ TYPICAL CHARACTERISTICS

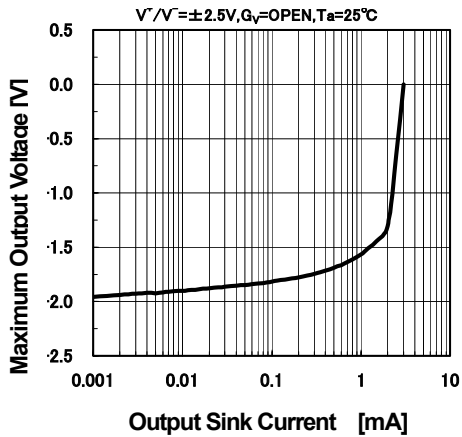
Output Voltage vs. Load Resistance



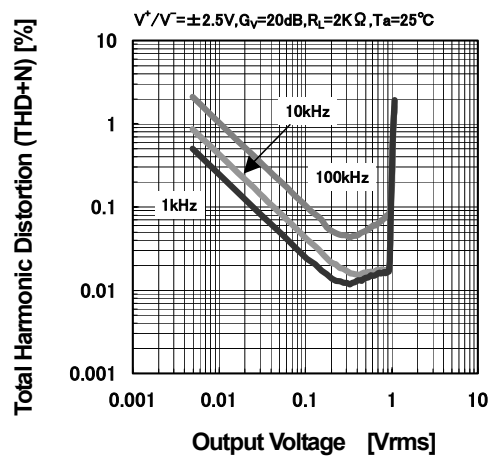
Maximum Output Voltage vs. Output Source Current



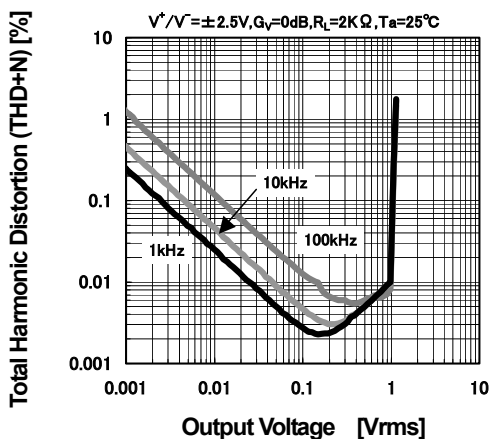
Maximum Output Voltage vs. Output Sink Current



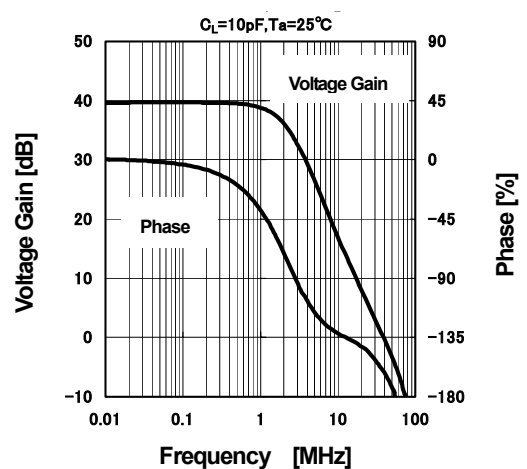
Total Harmonic Distortion vs. Output Voltage



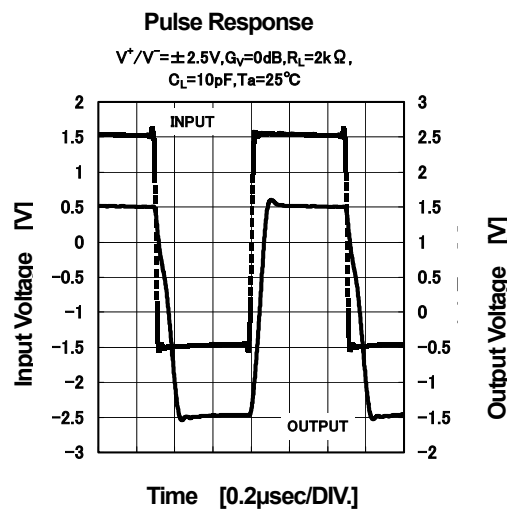
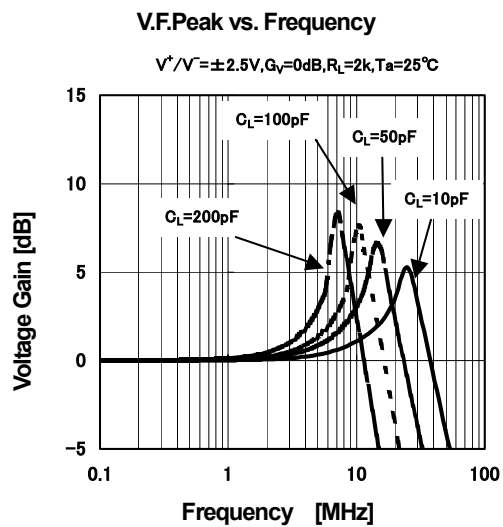
Total Harmonic Distortion vs. Output Voltage



Voltage Gain, Phase vs. Frequency



■ TYPICAL CHARACTERISTICS



[CAUTION]

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