

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

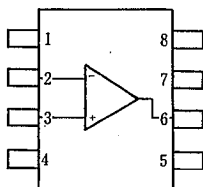


NJM2136M

■ 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

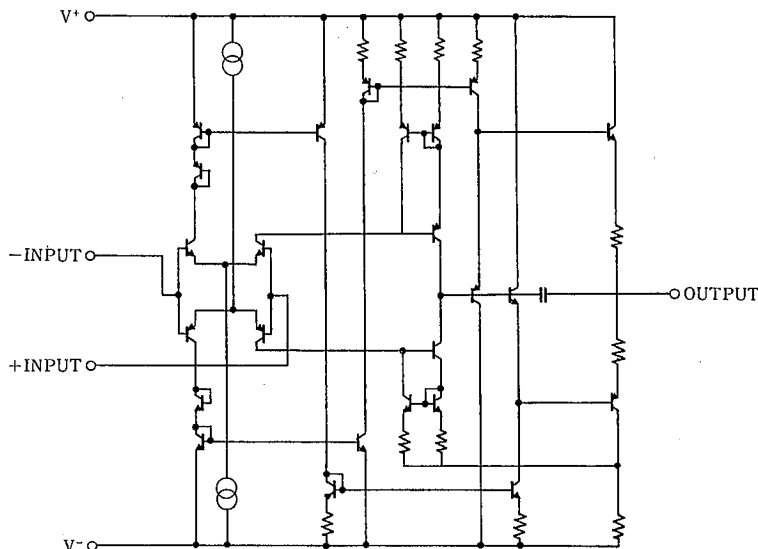


NJM2136M
NJM2136V

PIN FUNCTION

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

■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS

($T_a=25^{\circ}\text{C}$)

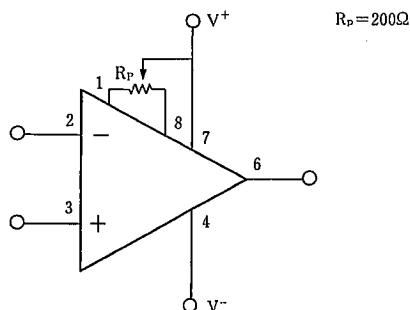
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+/V^-	± 6.75	V
Differential Input Voltage	V_{ID}	± 3	V
Power Dissipation	P_D	(SSOP-8) 250 (DMP-8) 300	mW
Operating Temperature Range	T_{opr}	$-40 \sim +85$	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	$-50 \sim +125$	$^{\circ}\text{C}$

■ ELECTRICAL CHARACTERISTICS

($V^+/V^- = \pm 2.5\text{V}$, $T_a=25^{\circ}\text{C}$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V^+/V^-		± 1.35	± 2.50	± 6.00	V
Input Offset Voltage	V_{IO}	$R_S \leq 0\Omega$	—	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	$R_L \geq 10\text{k}\Omega$	65	75	—	dB
Input Common Mode Voltage Range	V_{ICM}		1.2	1.5	—	V
			-1.2	-1.5	—	
Common Mode Rejection Ratio	CMR	$-1\text{V} \leq V_{cm} \leq +1\text{V}$	45	60	—	dB
Supply Voltage Rejection Ratio			70	100	—	dB
Maximum Output Voltage Swing	V_{OM}	$R_L = 1\text{k}\Omega$	1.1	1.4	—	V
			-0.9	-1.2	—	
Operating Current	I_{CC}	$R_L = \infty$ (all Amp.)	—	0.63	0.82	mA
Slew Rate	SR	$A_V = 0\text{dB}$	—	45	—	$\text{V}/\mu\text{s}$
Gain Bandwidth Product	GB	60dB · 500kHz	120	200	—	MHz
Phase Margin	ϕ_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.

MEMO

[CAUTION]

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