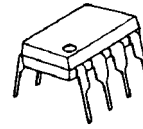# SINGLE-SUPPLY LOW POWER DUAL OPERATIONAL AMPLIFIER

■ **GENERAL DESCRIPTION**

The NJM2132 is a general purpose single supply low power dual operational amplifier.

The features of low operating current,wide and low perating voltage,high input inpedance,and single supply operation are suitable for battery operated items.
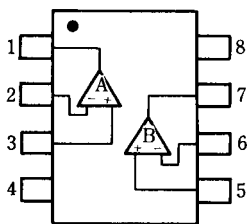
■ **FEATURES**

- Operating Voltage (+2.7V~+32V)
- Low Operating Current (180μA typ.@ V^+=5V,each amplifier)
- Slew Rate (2.1V/μs typ.)
- Gain Bandwidth Product (1.8MHz typ.)
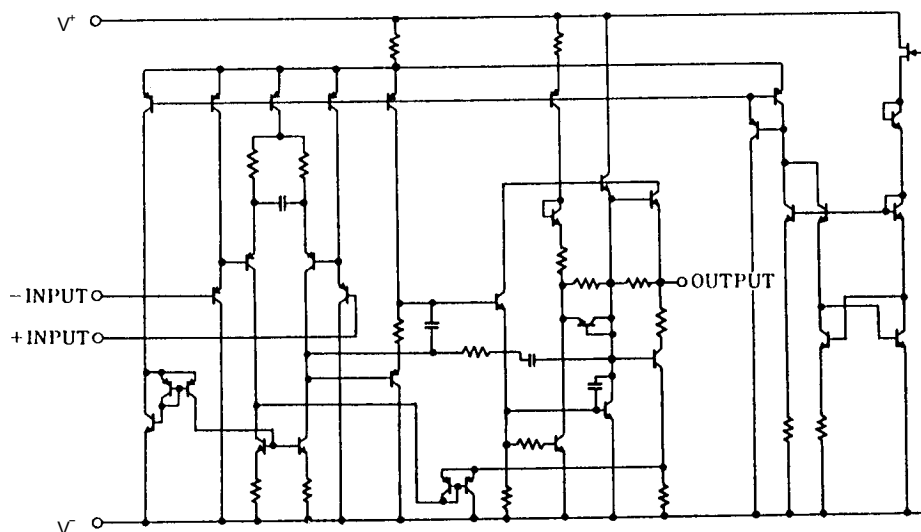- Bipolar Technology
- Package Outline DIP8,DMP8,SSOP8

■ **PACKAGE OUTLINE**

NJM2132D   **NJM2132M**

NJM2132V

■ **PIN CONFIGURATION**

NJM2132D
NJM2132M
NJM2132V

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)

NJM2132

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

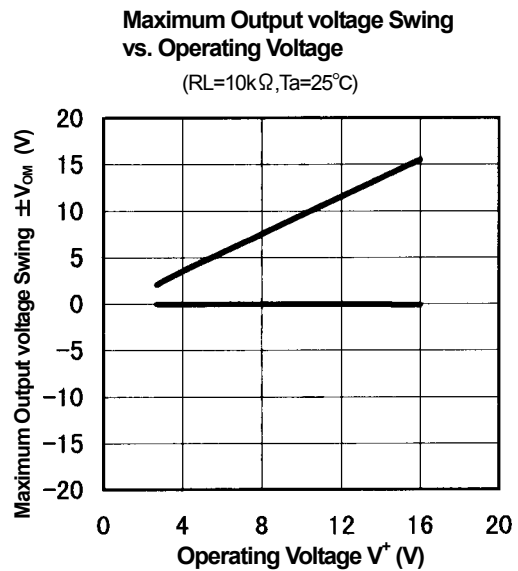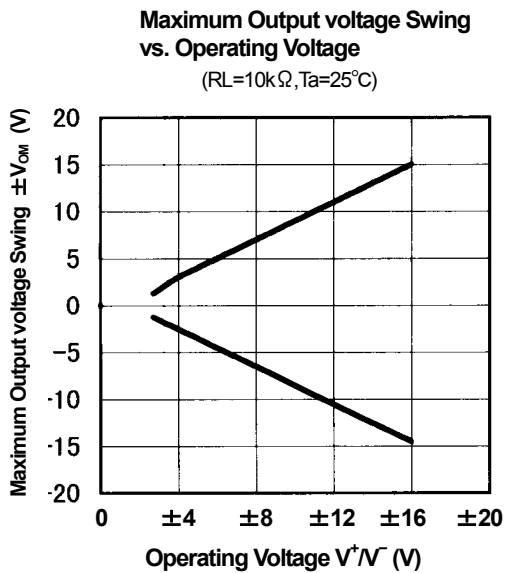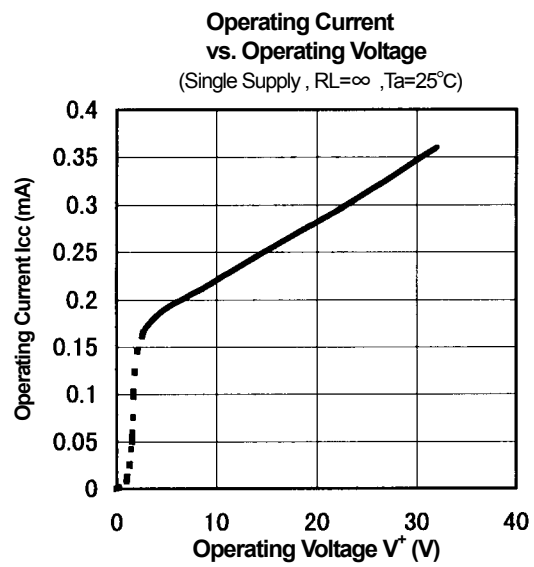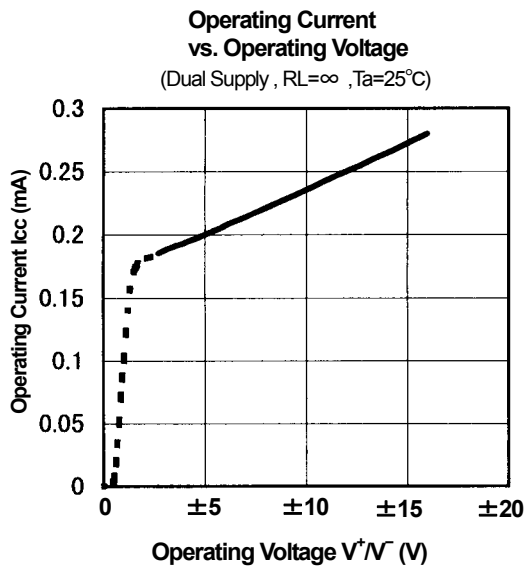| PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	36	V
Differential Input Voltage	V_{ID}	± 36	V
Input Voltage	V_{IC}	-0.3~+36 (note)	V
Power Dissipation	P_D	(DIP8) 500 (DMP8) 300 (SSOP8) 250	mW
Operating Temperature Range	T_{opr}	-40~+85	°C
Storage Temperature Range	T_{stg}	-50~+125	°C

(note) When the supply voltage is less than +36V, the absolute maximum input voltage is equal to the supply voltage.
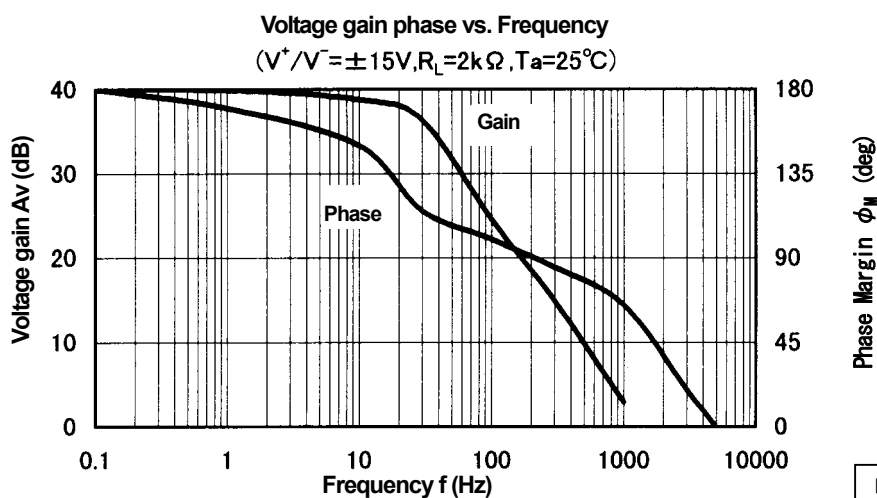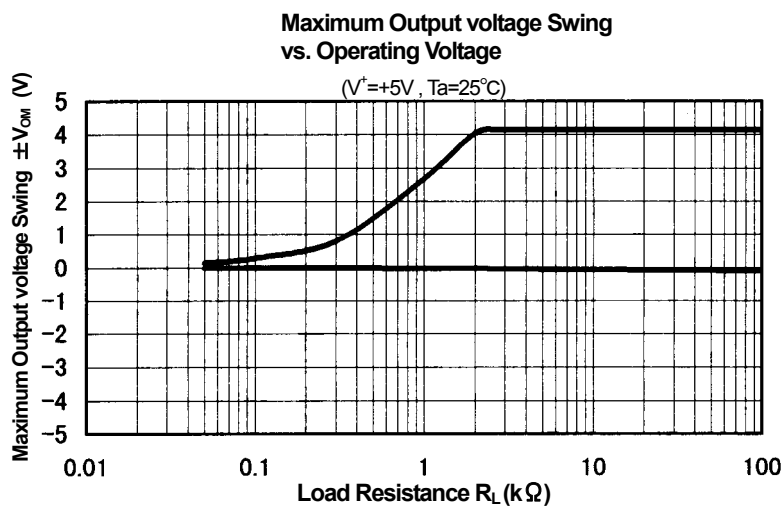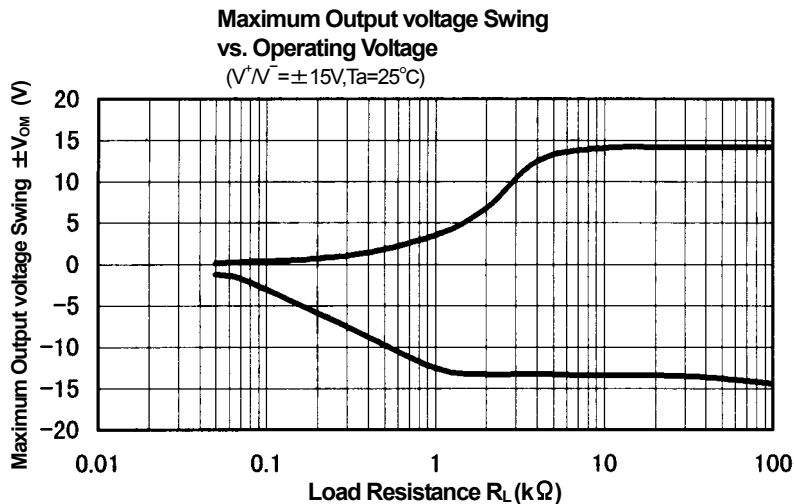
■ ELECTRICAL CHARACTERISTICS

(V^+/V^-=±15V,Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V^+	Single Supply	+2.7	-	+32	V
Input Offset Voltage	V_{IO}	R_S=0Ω	-	2.0	4.5	mV
		V^+=+5V,V^-=0V,R_S=0Ω	-	2.5	5.0	
V_{IO} Drift	$\Delta V_{IO}/T$	R_S=0Ω	-	10	-	µV/°C
Input Offset Current	I_{IO}		-	5	20	nA
Input Bias Current	I_B		-	20	100	nA
Large Signal Voltage Gain	A_V	R_L≥10kΩ,V_O=±10V	90	100	-	dB
Input Common Mode Voltage Range	V_{ICM}		-15~+13.5	-	-	V
Common Mode Rejection Ratio	CMR	R_S≤10kΩ	80	90	-	dB
Supply Voltage Rejection Ratio	SVR	R_S=100Ω	80	100	-	dB
Maximum Output Voltage Swing	V_{OM}	R_L=10kΩ	± 13.6	± 14.2	-	
	$+V_{OM}$	V^+=+5V,V^-=0V	3.5	4.3	-	V
	$-V_{OM}$	R_L=10kΩ	-	0.05	0.15	
Operating Current	I_{CC}	R_L=∞ (all Amp.)	-	440	500	µA
		V^+=+5V,V^-=0V	-	360	500	
Output Source Current	I_{SOURCE}	V_{IN}^+=1V,V_{IN}^-=0V	2.2	3.6	-	mA
Output Sink Current	I_{SINK}	V_{IN}^+=0V,V_{IN}^-=1V	15	27	-	mA
Input Resistance	R_{IN}		-	300	-	MΩ
Input Capacitance	C_i		-	0.8	-	pF
Close Loop Output Impedance	Z_O	f=1.0MHz	-	100	-	Ω
Equivalent Input Noise Voltage	e_n	R_S=100Ω,f=1kHz	-	32	-	nV/√Hz
Slew Rate	SR	R_L=10kΩ	-	2.1	-	V/µs
Gain Bandwidth Product	GB	f=100kHz	-	1.8	-	MHz
Power Bandwidth	BW_P	A_V=+1.0,R_L=10kΩ V_O=20V_{P-P},THD=5%	-	35	-	kHz
Phase Margin	$Ø_M$	R_L=10kΩ	-	60	-	deg.
		R_L=10kΩ,C_L=100pF	-	45	-	
Amplitude Margin	Am	R_L=10kΩ	-	15	-	dB
		R_L=10kΩ,C_L=100pF	-	5.0	-	
Total Harmonic Distortion	THD	A_V=+10,R_L=10kΩ f=10kHz,2≤V_O≤20V_{P-P}	-	0.03	-	%
Channel Separation	CS	f=10kHz,Input Referrd	-	120	-	dB

New Japan Radio Co.,Ltd.

■ **TYPICAL CHARACTERISTICS**

**Operating Current
vs. Operating Voltage**
(Dual Supply , RL=∞ ,Ta=25°C)

**Operating Current
vs. Operating Voltage**
(Single Supply , RL=∞ ,Ta=25°C)

**Maximum Output voltage Swing
vs. Operating Voltage**
(RL=10kΩ,Ta=25°C)

**Maximum Output voltage Swing
vs. Operating Voltage**
(RL=10kΩ,Ta=25°C)

NJM2132

**Maximum Output voltage Swing
vs. Operating Voltage**
$(V^+/V^- = \pm 15V, Ta=25°C)$

**Maximum Output voltage Swing
vs. Operating Voltage**
$(V^+=+5V, Ta=25°C)$

Voltage gain phase vs. Frequency
$(V^+/V^- = \pm 15V, R_L=2k\Omega, Ta=25°C)$

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Operational Amplifiers - Op Amps *category:*

Click to view products by Nisshinbo *manufacturer:*

Other Similar products are found below :

NCV33072ADR2G LM358SNG 430227FB UPC824G2-A LT1678IS8 042225DB 058184EB UPC822G2-A UPC259G2-A UPC258G2-A NCV33202DMR2G NTE925 AZV358MTR-G1 AP4310AUMTR-AG1 HA1630D02MMEL-E HA1630S01LPEL-E SCY33178DR2G NJU77806F3-TE1 NCV5652MUTWG NCV20034DR2G LM324EDR2G LM2902EDR2G NTE7155 NTE778S NTE871 NTE924 NTE937 MCP6V17T-E/MNY MCP6V19-E/ST MXD8011HF MCP6V17T-E/MS SCY6358ADR2G ADA4523-1BCPZ LTC2065HUD#PBF ADA4523-1BCPZ-RL7 NJM2904CRB1-TE1 2SD965T-R RS6332PXK BDM8551 BDM321 MD1324 COS8052SR COS8552SR COS8554SR COS2177SR COS2353SR COS724TR ASOPD4580S-R RS321BKXF ADA4097-1HUJZ-RL7