LOW POWER SINGLE OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJM2130 is a general-purpose low power single operational amplifier.

The features of low power, low operating voltage, and ultra mini package are most suitable for portable items.

The NJM2130 incorporates frequency compensation and short-circuit protection as same as NJM022 and the characteristics are also same as NJM022.

■ PACKAGE OUTLINE

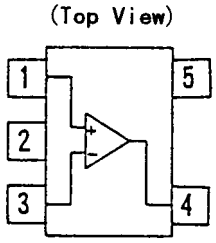
NJM2130F

NJM2130F3

■ FEATURES

- Operating Voltage (±2V~±18V)
- Low Supply Current (80μA typ.)
- Short-Circuit Protection (±6mA typ.)
- Mounted in Ultra Miniature Package 2.0 x 1.25mm
  (1/8 of DMP8 package)
- Bipolar Technology
- Package Outline SOT-23-5,SC88A

■ PIN CONFIGURATION

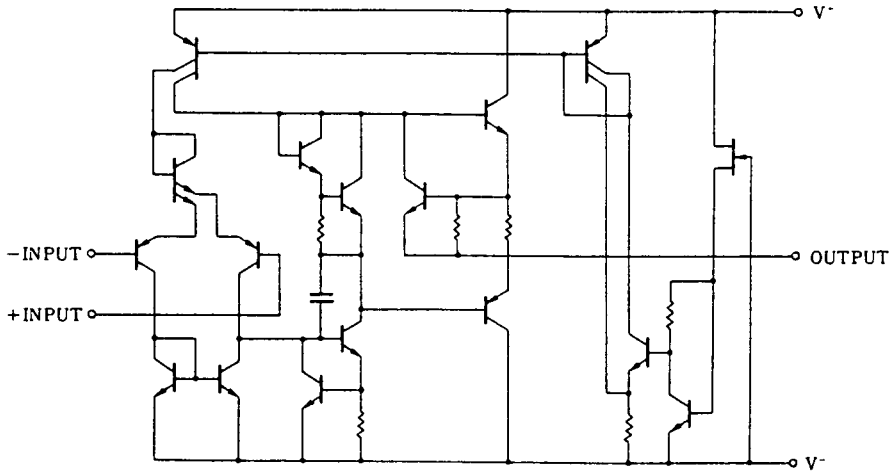


NJM2130F
NJM2130F3

PIN FUNCTION

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

■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25˚C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+/V^-	± 18	V
Input Voltage	V_{IC}	± 15 (note1)	V
Differential Input Voltage	V_{ID}	± 30	V
Power Dissipation	P_D	(SOT−23−5) 200 (SC88A) 250 (note2)	mW
Operating Temperature Range	T_{opr}	-40~+85	˚C
Storage Temperature Range	T_{stg}	-40~+125	˚C

(note1) When the supply voltage is less than ±15V,the absolute maximum input voltage is equal to the supply voltage.

(note2) On EIA/JEDEC board. (76.2x114.3x1.6mm, 2layer, FR-4)

■ ELECTRICAL CHARACTERISTICS

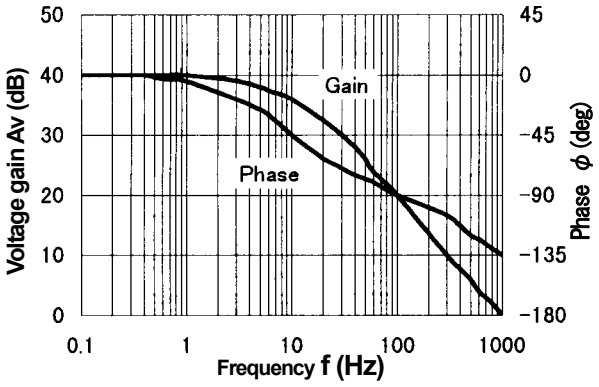
(V^+/V^-=±15V,Ta=25˚C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	R_S≦10kΩ	-	1	5	mV
Input Offset Current	I_{IO}		-	1	80	nA
Input Bias Current	I_B		-	15	250	nA
Large Signal Voltage Gain	A_V	R_L≧10kΩ,V_O=±10V	60	88	-	dB
Common Mode Rejection Ratio	CMR	R_S≦10kΩ	60	90	-	dB
Response Time (Rise Time)	t_R	V_{IN}=20mV,R_L=10kΩ,C_L=100pF	-	0.3	-	μs
Slew Rate	SR	V_{IN}=10V,R_L=10kΩ,C_L=100pF	-	0.5	-	V/μs
Input Common Mode Voltage Range	V_{ICM}		± 12	± 13	-	V
Supply Voltage Rejection Ratio	SVR	R_S≦10kΩ	74	110	-	dB
Equivalent Input Noise Voltage	e_n	A_V=20dB,f=1kHz	-	50	-	nV/√Hz
Short-circuit Output Current	I_{OS}		-	± 6	-	mA
Operating Current	I_{CC}		-	80	170	μA
Maximum Output Voltage Swing	V_{OM}	R_L=10kΩ	± 10	± 14	-	V

■ TYPICAL CHARACTERISTICS

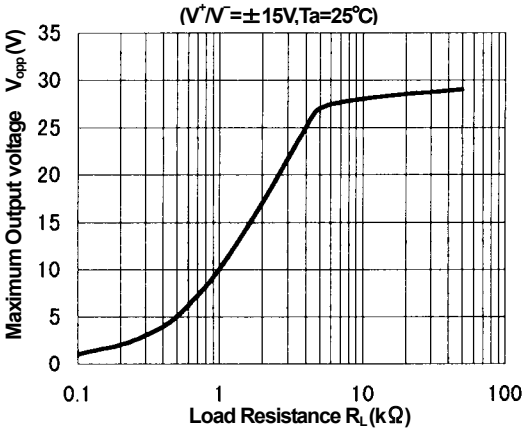
Voltage gain phase vs. Frequency

(V^+/V^-=±15V, R_L=2.5KΩ, C_L=100pF)



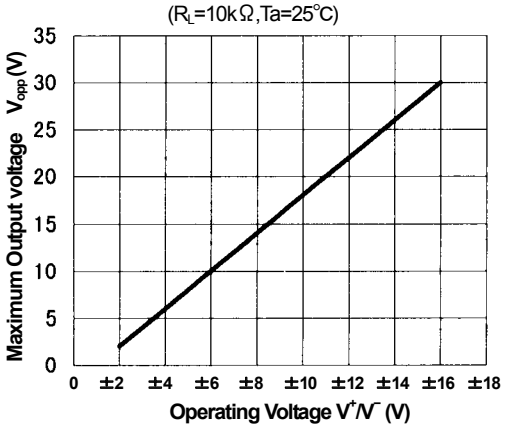
Maximum Output voltage vs. Load Resistance

(V^+/V^-=±15V, Ta=25°C)



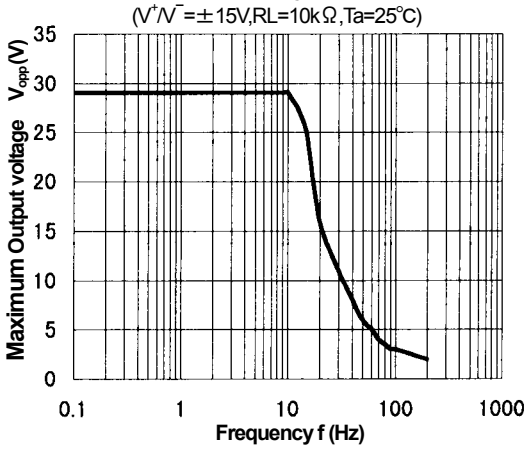
Maximum Output Voltage vs. Operating Voltage

(R_L=10kΩ, Ta=25°C)



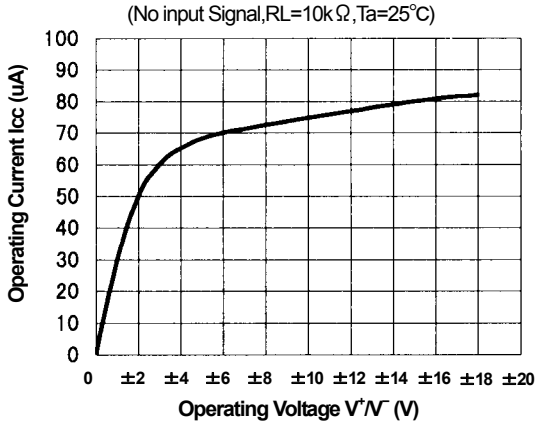
Maximum Output Voltage vs. Frequency

(V^+/V^-=±15V, RL=10kΩ, Ta=25°C)



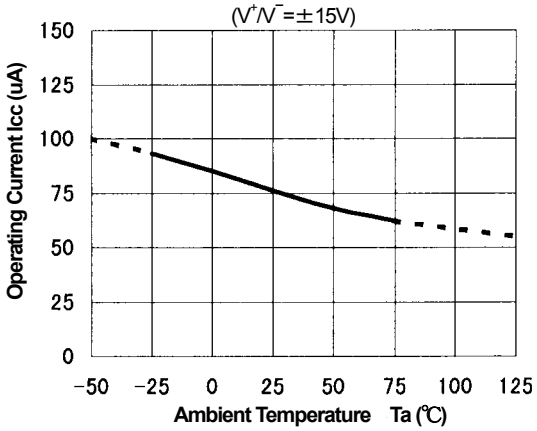
Operating Current vs. Operating Voltage

(No input Signal, RL=10kΩ, Ta=25°C)



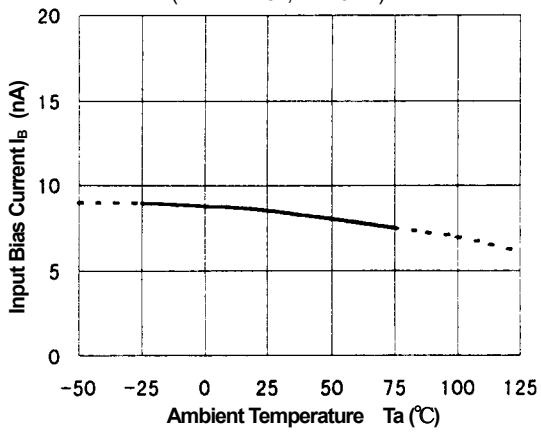
Operating Current vs. Temperature

(V^+/V^-=±15V)



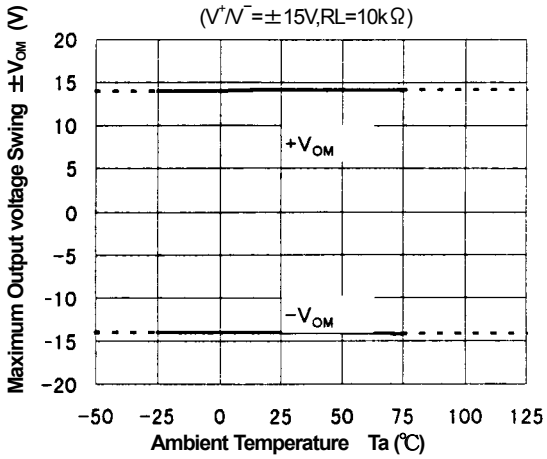
Input Bias Current vs. Temperature

(V^+/V^-=±15V,RL=10kΩ)



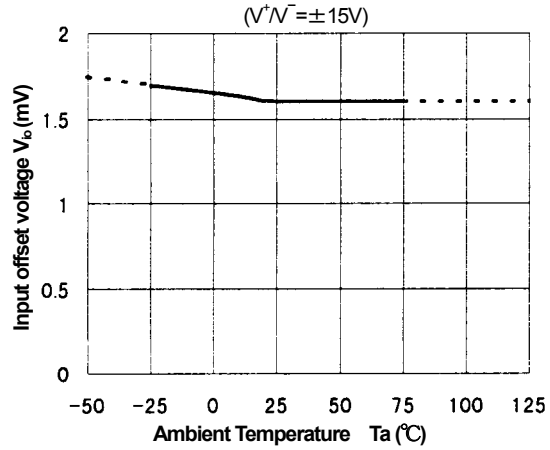
Maximum Output Voltage Swing vs. Temperature

(V^+/V^-=±15V,RL=10kΩ)



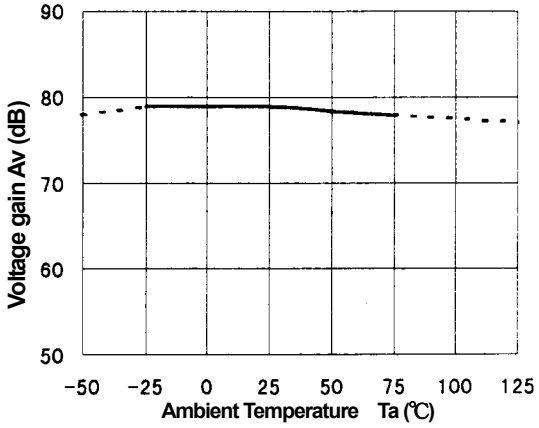
Input offset Voltage vs. Temperature

(V^+/V^-=±15V)



Voltage gain phase vs. Temperature

(V^+/V^-=±15V,RL=10kΩ)



[CAUTION]
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