

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 (MTP5) 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

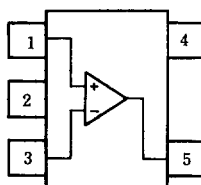


NJM2130F

■ FEATURES

- Operating Voltage $(\pm 2V \sim \pm 18V)$
- Low Supply Current $(80 \mu A \text{ typ.})$
- Short-Circuit Protection $(\pm 6mA \text{ typ.})$
- Mounted in Ultra Miniature Package $2.9 \times 1.5mm$
 $(1/5 \text{ of DMP-8 package})$
- Bipolar Technology
- Package Outline MTP5

■ PIN CONFIGURATION

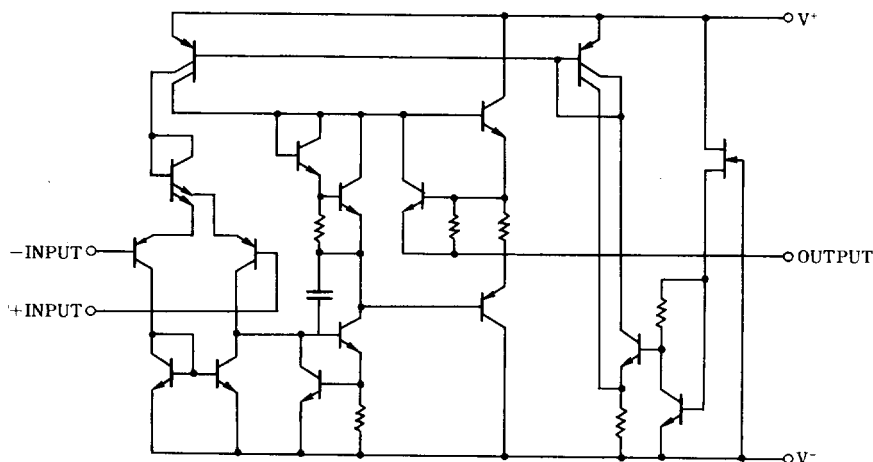


NJM2130F

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(note)	V
Differential Input Voltage	V _{ID}	±30	V
Power Dissipation	P _D	200	mW
Operating Temperature Range	T _{opr}	-25 ~ +75	°C
Storage Temperature Range	T _{stg}	-40 ~ +125	°C

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

■ ELECTRICAL CHARACTERISTICS

(V⁺/V⁻ = ±15V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITIONS	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
Quiescent Current	I _{CC}		—	80	170	μA
Maximum Output Voltage	V _{OM}	R _L = 10kΩ	±10	±14	—	V

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