

## 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

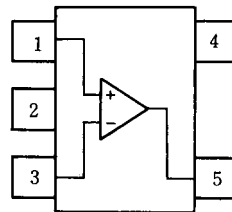


NNJM2130F3

### ■ FEATURES

- Operating Voltage (  $\pm 2V \sim \pm 18V$  )
- Low Supply Current (  $80\mu A$  typ. )
- Short-Circuit Protection (  $\pm 6mA$  typ. )
- Mounted in Ultra Miniature Package  $2.0 \times 1.25mm$   
( 1/8 of DMP8 package )
- Bipolar Technology
- Package Outline MTP5,SC88A

### ■ PIN CONFIGURATION

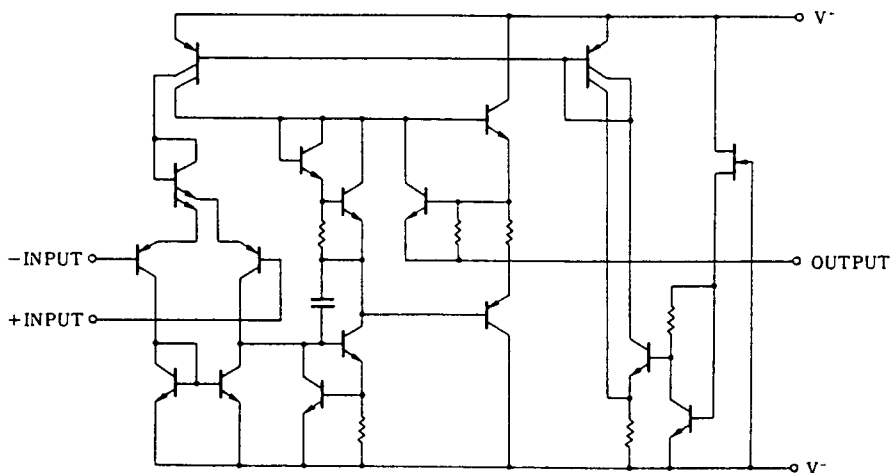


NJM2130F  
NJM2130F3

#### PIN FUNCTION

- 1.+INPUT
- 2.V<sup>-</sup>
- 3.-INPUT
- 4.OUTPUT
- 5.V<sup>+</sup>

### ■ EQUIVALENT CIRCUIT



# NJM2130

## ■ 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	$P_D$	( MTP5 ) 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 glass epoxy board. ( 50x50x1.6mm )

## ■ ELECTRICAL CHARACTERISTICS

(  $V^+ / V^- = \pm 15V, Ta = 25^\circ C$  )

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	$V_{IO}$	$R_S \leq 10k\Omega$	-	1	5	mV
Input Offset Current	$I_{IO}$		-	1	80	nA
Input Bias Current	$I_B$		-	15	250	nA
Large Signal Voltage Gain	$A_V$	$R_L \geq 10k\Omega, V_O = \pm 10V$	60	88	-	dB
Common Mode Rejection Ratio	CMR	$R_S \leq 10k\Omega$	60	90	-	dB
Response Time ( Rise Time )	$t_R$	$V_{IN} = 20mV, R_L = 10k\Omega, C_L = 100pF$	-	0.3	-	µs
Slew Rate	SR	$V_{IN} = 10V, R_L = 10k\Omega, C_L = 100pF$	-	0.5	-	V/µs
Input Common Mode Voltage Range	$V_{ICM}$		± 12	± 13	-	V
Supply Voltage Rejection Ratio	SVR	$R_S \leq 10k\Omega$	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	$V_{OM}$	$R_L = 10k\Omega$	± 10	± 14	-	V

**[CAUTION]**

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