SINGLE-SUPPLY OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJM2125 is a single-supply operational amplifier of small surface mount package.

The features of single-supply operation, low operating voltage (minimum 2.7V) and small package are most suitable for portable items.

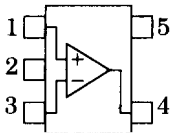
■ PACKAGE OUTLINE

NJM2125F

■ FEATURES

- Single-Supply Operation
- Low Operating Voltage (+2.7V~20V)
- Low Operating Current (1.0mA typ.)
- Slew Rate (1.2V/μs typ.)
- Small Package (SOT−23−5)
- Bipolar Technology

■ PIN CONFIGURATION

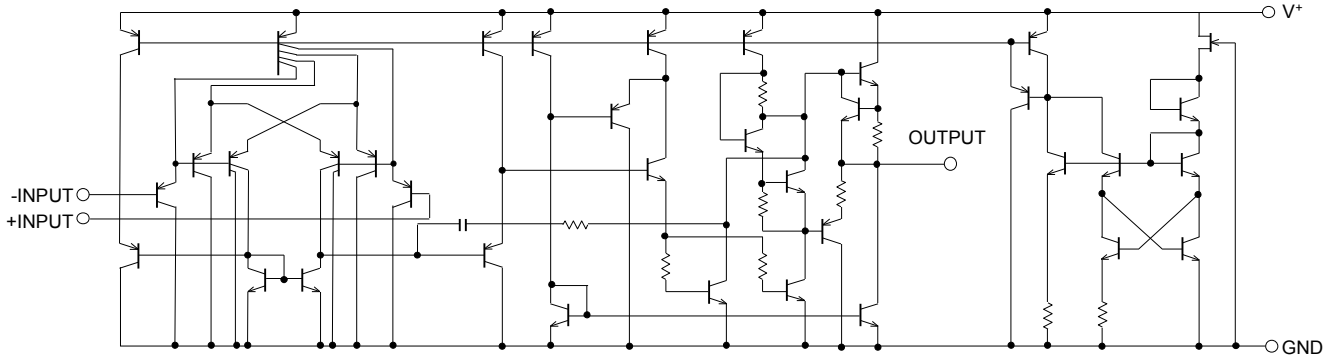


NJM2125F
(Top View)

PIN FUCTION

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

■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25˚C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	+20	V
Differential Input Voltage	V_{ID}	+20	V
Input Voltage	V_{IC}	-0.3~+20 (Note)	V
Power Dissipation	P_D	(SOT−23−5) 200	mW
Operating Temperature Range	T_{opr}	-40~85	˚C
Storage Temperature Range	T_{stg}	-40~125	˚C

(note) When the supply voltage is less than +20V, the absolute maximum input voltage is equal to the supply voltage.

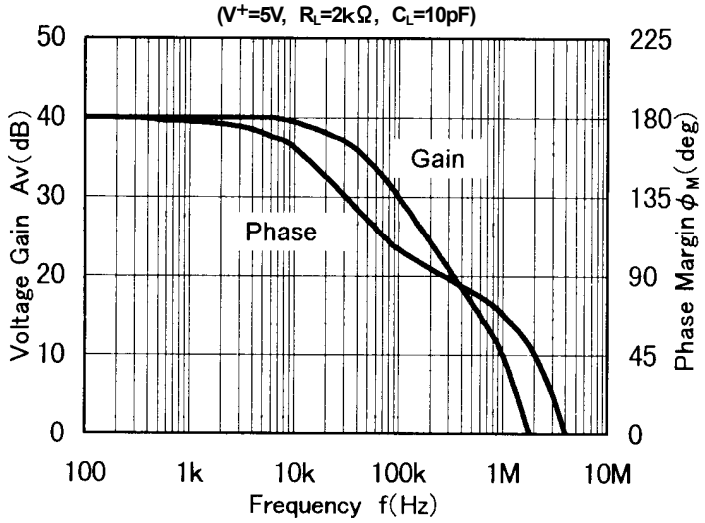
■ ELECTRICAL CHARACTERISTICS

(V^+=5V,Ta=25˚C)

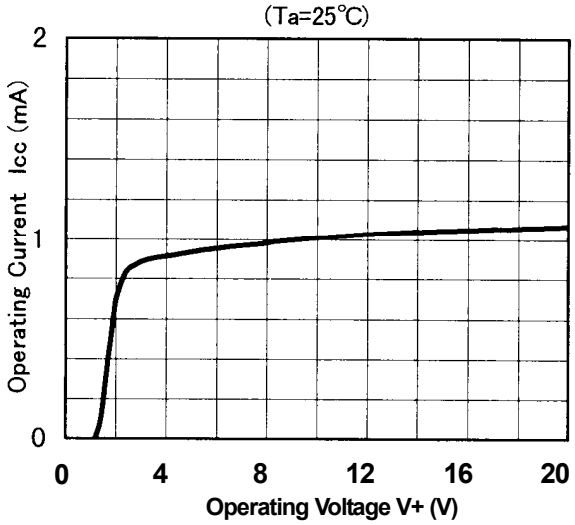
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	R_S=0Ω	-	2	7	mV
Input Offset Current	I_{IO}		-	5	50	nA
Input Bias Current	I_B		-	25	250	nA
Large Signal Voltage Gain	A_V	R_L≥2kΩ	88	100	-	dB
Maximum Output Voltage Swings	V_{OM}	R_L=2kΩ	3.5	-	-	V
Input Common Mode Voltage Range	V_{ICM}		0~3.5	-	-	V
Common Mode Rejection Ratio	CMR		70	90	-	dB
Supply Voltage Rejection Ratio	SVR		80	94	-	dB
Output Source Current	I_{SOURCE}	V_{IN}^+=1V,V_{IN}^-=0V	20	30	-	mA
Output Sink Current	I_{SINK}	V_{IN}^+=0V,V_{IN}^-=1V	8	20	-	mA
Operating Current	I_{CC}	R_L=∞	-	1.0	1.75	mA
Slew Rate	SR		-	1.2	-	V/μs
Unity Gain Frequency	f_T		-	1.2	-	MHz

■ TYPICAL CHARACTERISTICS

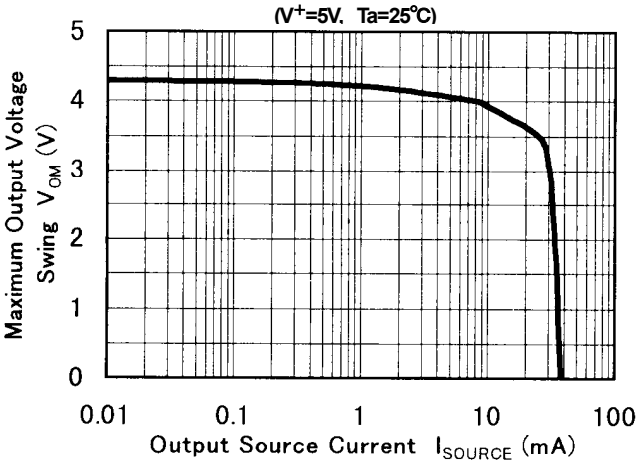
Voltage Gain Phase Margin vs. Frequency
(V^+=5V, R_L=2kΩ, C_L=10pF)



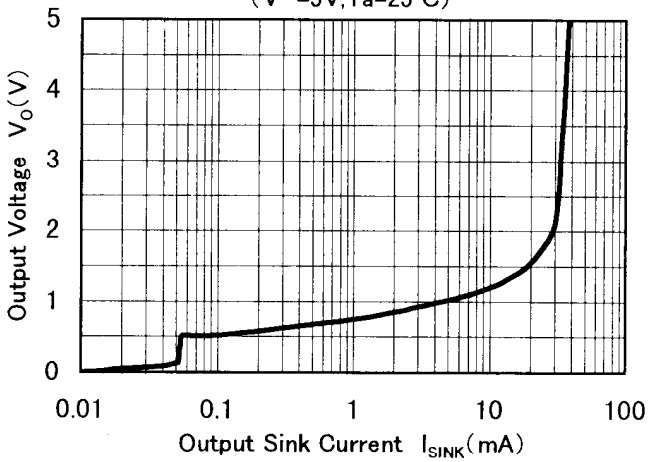
Operating Current vs. Operating Voltage
(Ta=25°C)



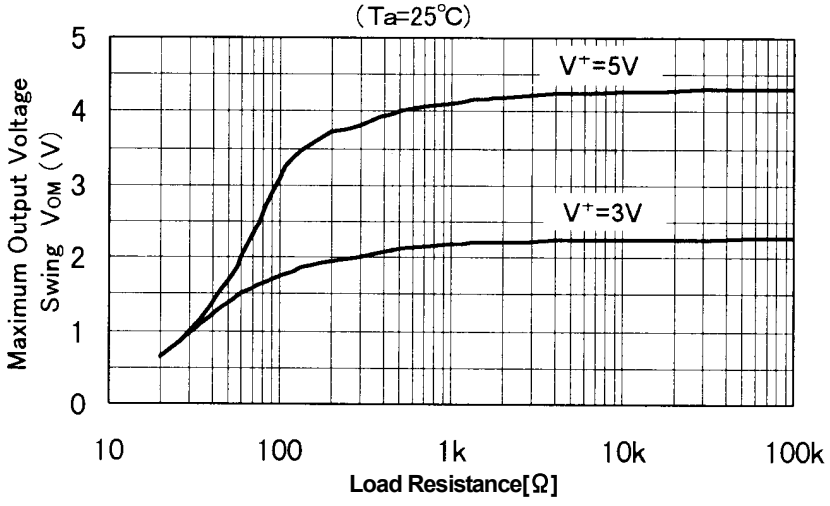
Maximum Output Voltage Swing
vs. Output source current
(V^+=5V, Ta=25°C)



Output Voltage vs. Output Sink Current
(V^+=5V, Ta=25°C)

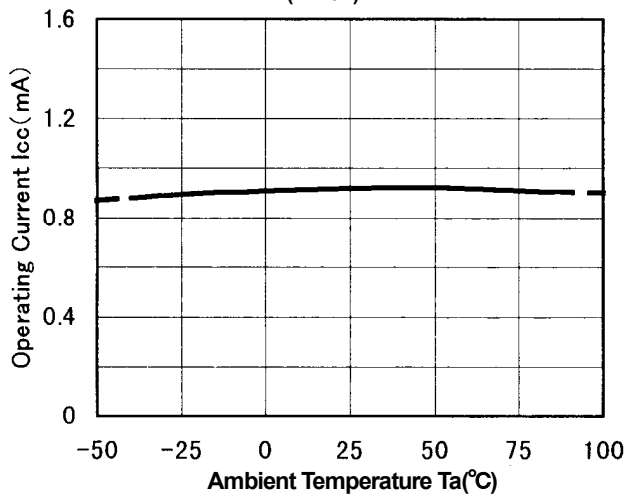


Maximum Output Voltage Swing vs. Load Resistance
(Ta=25°C)

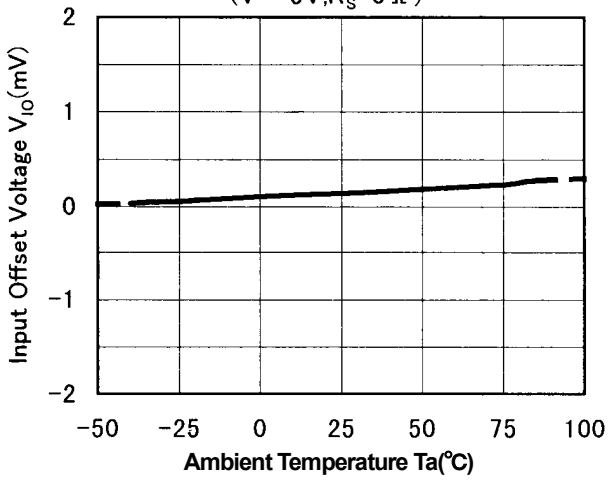


■ TYPICAL CHARACTERISTICS

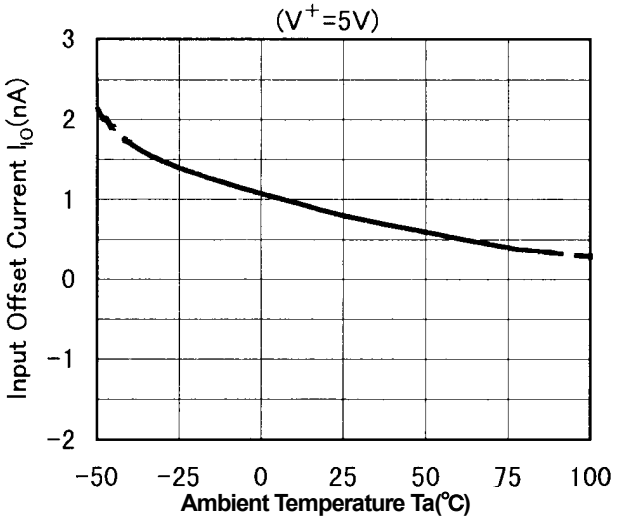
Operating Current vs. Temperature
(V^+=5V)



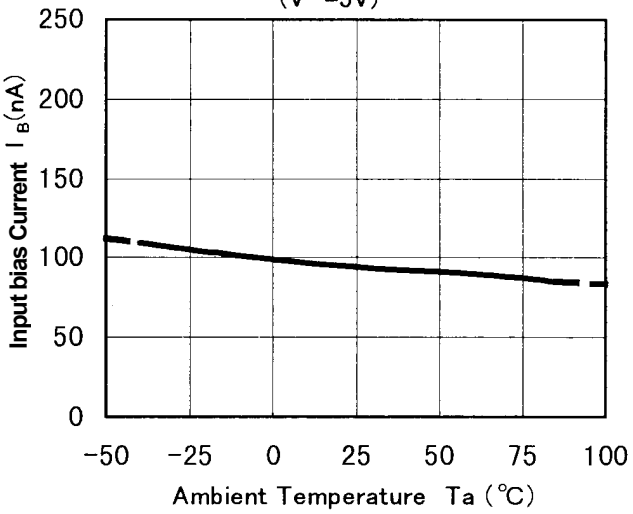
Input Offset Voltage vs. Temperature
(V^+=5V,R_S=0Ω)



Input Offset Current vs. Temperature
(V^+=5V)



Input bias Current vs. Temperature
(V^+=5V)



Maximum Output Voltage Swing vs. Temperature
(V^+=5V,R_L=2kΩ)