SINGLE-SUPPLY OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

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

The features are single-supply operation, low operating voltage (minimum 2.7V) and ultra mini package (MTP5) are most suitable for portable items.

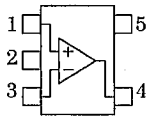
■ PACKAGE OUTLINE

NJM2125F

■ FEATURES

- Single-Supply Operation
- Low Operating Voltage (+2.7V~20V)
- Low Operating Current (1.0mA typ.)
- Slew Rate (1.2V/μs typ.)
- Mounted in Ultra Mini Package (MTP5:1/5 of DMP)
- Bipolar Technology

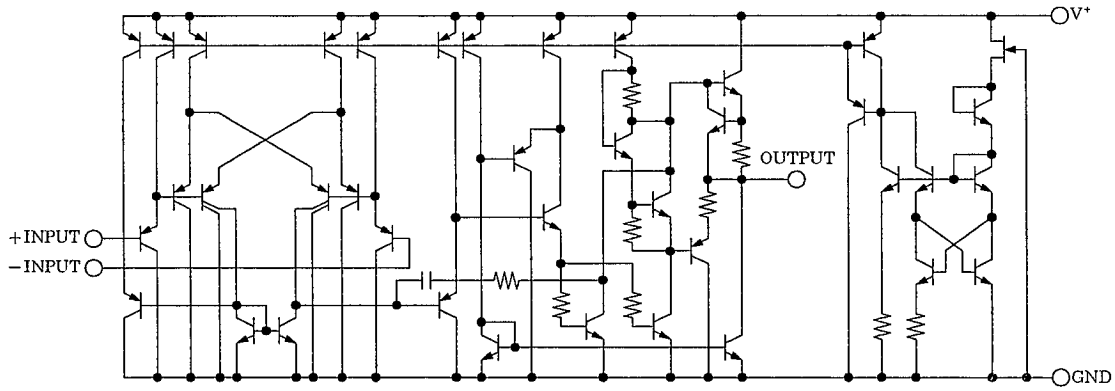
■ PIN CONFIGRATION



NJM2125F

PIN FUNCTION
1.+INPUT
2.GND
3.−INPUT
4.OUTPUT
5.V^+

■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS (Ta=25℃)

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	200	mW
Operating Temperature Range	Topr	−40～85	℃
Storage Temperature Range	Tstg	−40～125	℃

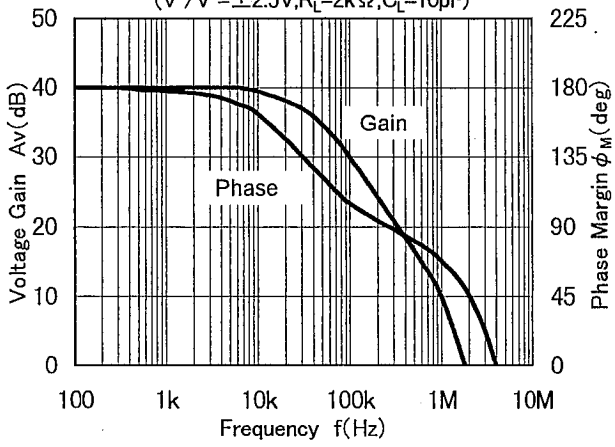
(note)When the supply voltage is less than +20V,the absolute maximum input voltage is equal to the supply voltage.

■ ELECTRICAL CHARACTERISTICS (V^+=5V, Ta=25℃)

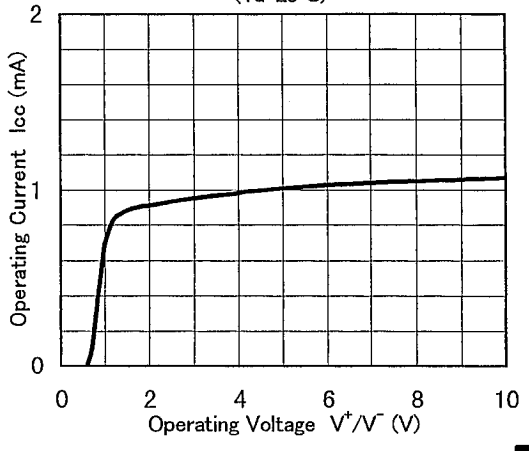
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	Rs=0Ω	−	2	7	mV
Input Offset Current	I_{IO}		−	5	50	nA
Input Bias Current	I_B		−	25	250	nA
Large Signal Voltage Gain	A_V	$R_L \geqq 2k\Omega$	88	100	−	dB
Maximum Output Voltage Swings	V_{OM}	R_L=2kΩ	3.5	−	−	V
Input Common 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	Icc	R_L=∞	−	1.0	1.75	mA
Slew Rate	SR		−	1.2	−	V/μs
Unity Gain Frequency	f_T		−	1.2	−	MHz

■ TYPICAL CHARACTERISTICS

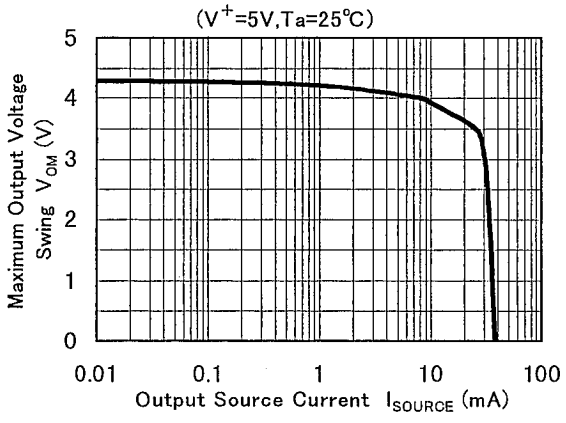
Voltage Gain, Phase Margin vs. Frequency
(V^+/V^-=±2.5V,R_L=2kΩ,C_L=10pF)



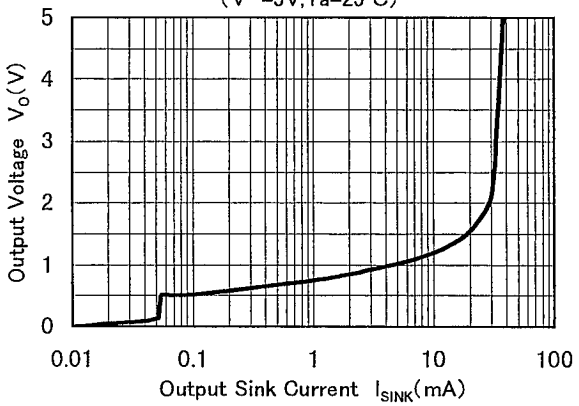
Operating Current vs. Operating Voltage
(Ta=25°C)



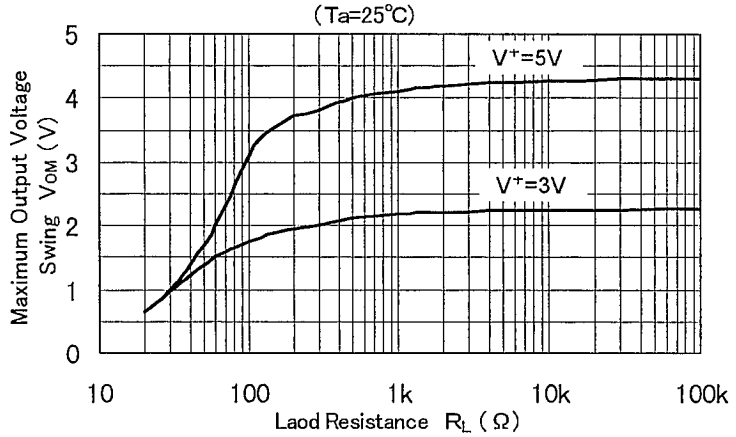
Maximum Output Voltag Swing
vs. Output Source Current
(V^+=5V,Ta=25°C)



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

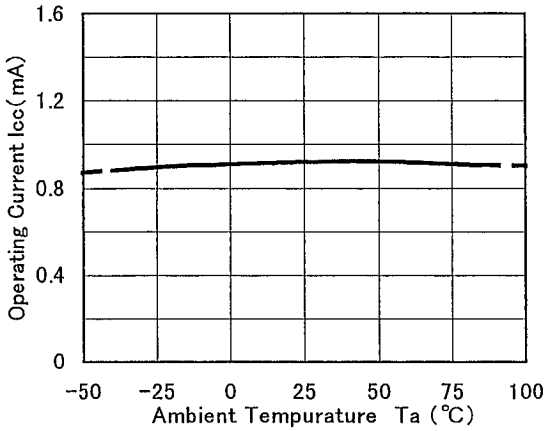


Maximum Output Voltage Swing vs. Load Resistance
(Ta=25°C)

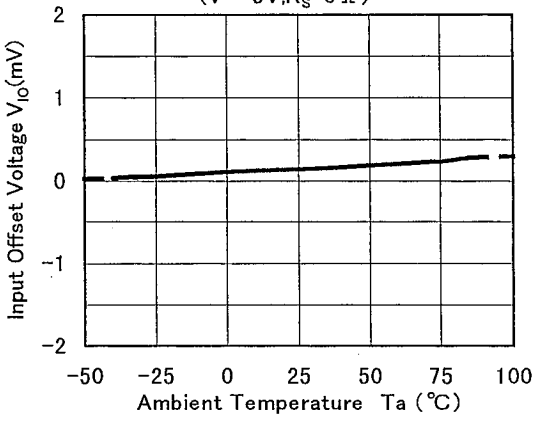


■ TYPICAL CHARACTERISTICS

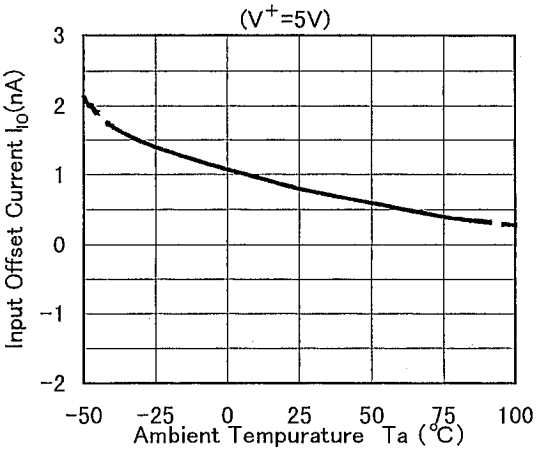
Operating Current vs. Temperature
($V^+/V^-=\pm 2.5V$)



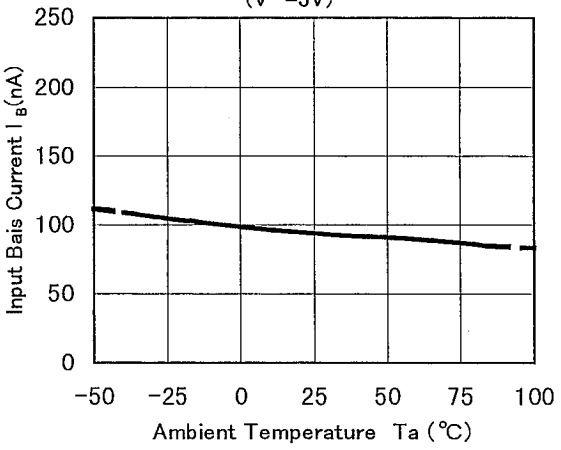
Input Offset Voltage vs. Tempurature
($V^+=5V, R_S=0\Omega$)



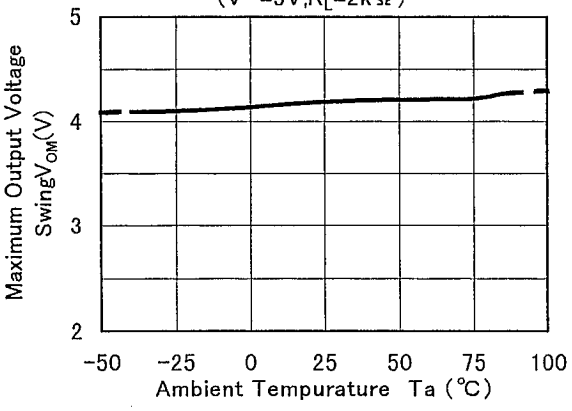
Input Offset Current vs. Tempurature
($V^+=5V$)



Input Bais Current vs. Tempurature
($V^+=5V$)



Maximum Output Voltage Swing
vs. Tempurature
($V^+=5V, R_L=2k\Omega$)



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