

## 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

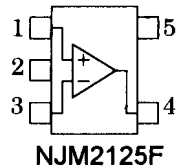


NJM2125PB1

### ■ FEATURES

- Single-Supply Operation
- Low Operating Voltage ( +2.7V~20V )
- Low Operating Current ( 1.0mA typ. )
- Slew Rate ( 1.2V/μs typ. )
- Small Package ( MTP5,FFP12)
- Bipolar Technology

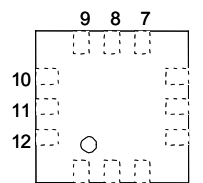
### ■ PIN CONFIGURATION



#### PIN FUNCTION

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

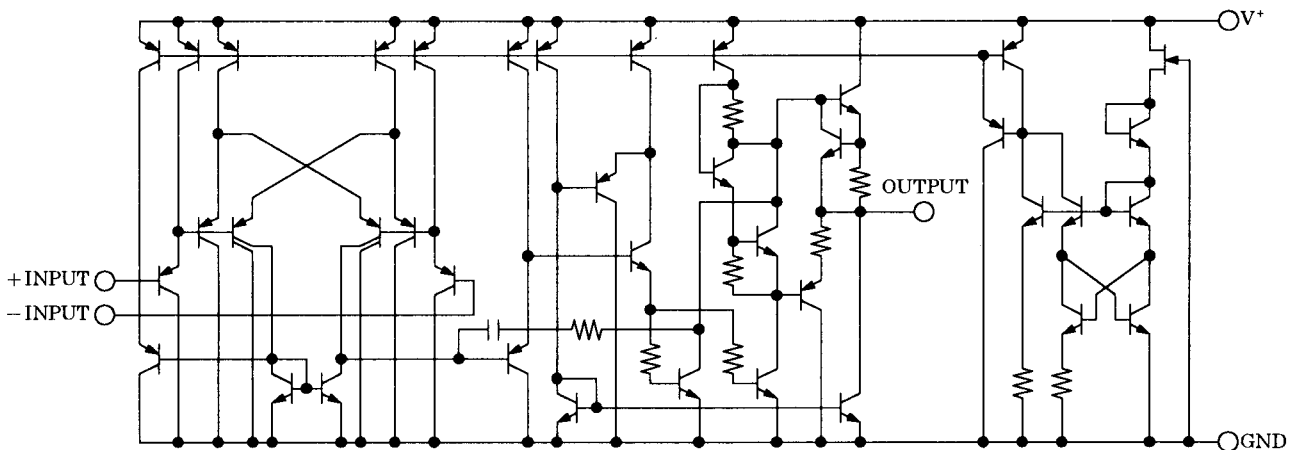
#### (TOP VIEW)



#### PIN FUNCTION

- 1.+INPUT
- 2.NC
- 3.-INPUT
- 4.NC
- 5.GND
- 6.NC
- 7.OUTPUT
- 8.NC
- 9.V<sup>+</sup>
- 10.NC
- 11.NC
- 12.NC

### ■ EQUIVALENT CIRCUIT



# NJM2125

## ■ ABSOLUTE MAXIMUM RATINGS

( Ta=25°C )

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup>	+20	V
Differential Input Voltage	V <sub>ID</sub>	+20	V
Input Voltage	V <sub>IC</sub>	-0.3~+20 ( note1 )	V
Power Dissipation	P <sub>D</sub>	(MTP-5)200 (FFP12)300(note2)	mW
Operating Temperature Range	T <sub>opr</sub>	-40~85	°C
Storage Temperature Range	T <sub>stg</sub>	-40~125	°C

( note1 ) When the supply voltage is less than +20V, the absolute maximum input voltage is equal to the supply voltage.

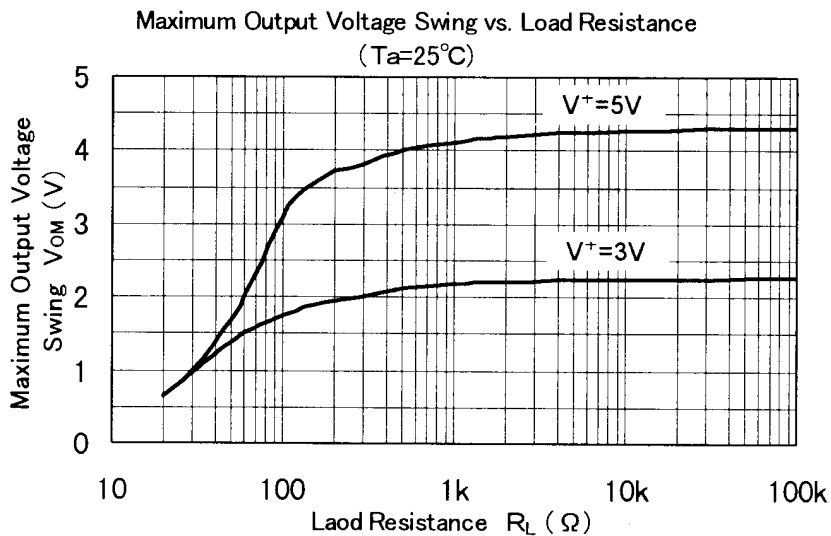
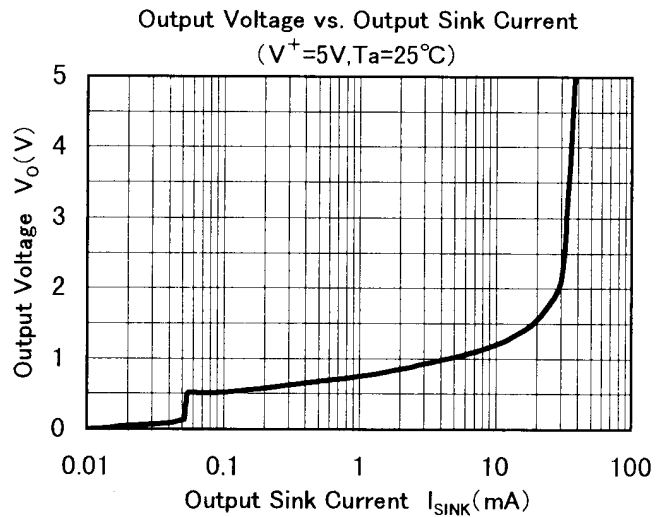
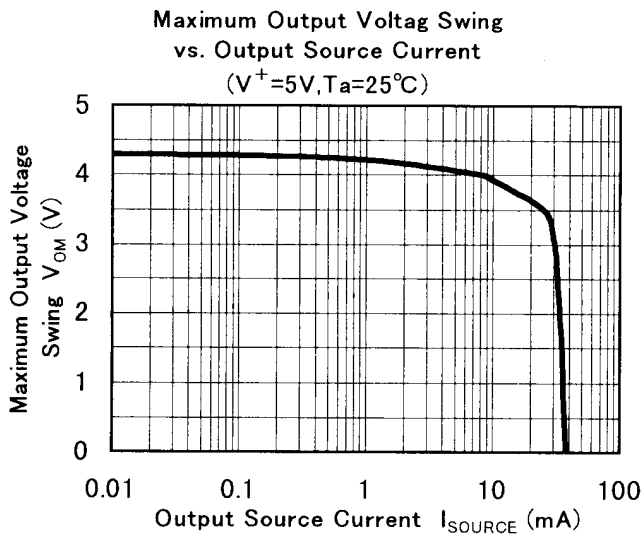
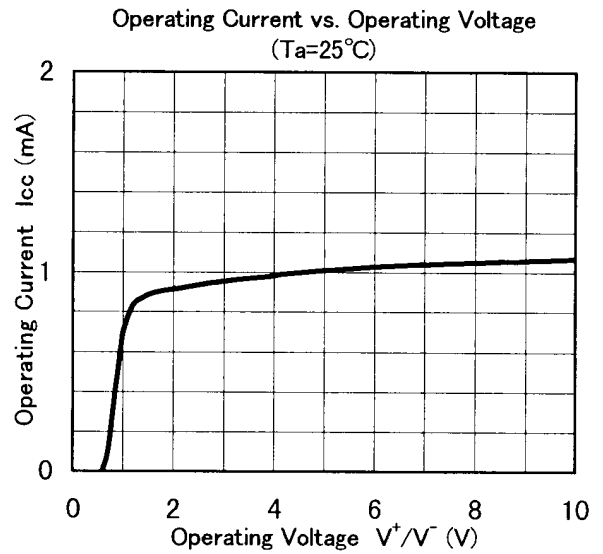
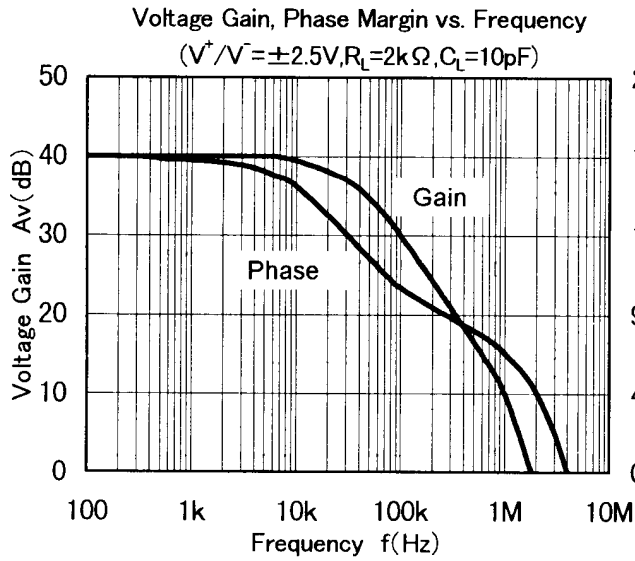
(note2)On glass epoxy board.

## ■ ELECTRICAL CHARACTERISTICS

( V<sup>+</sup>=5V,Ta=25°C )

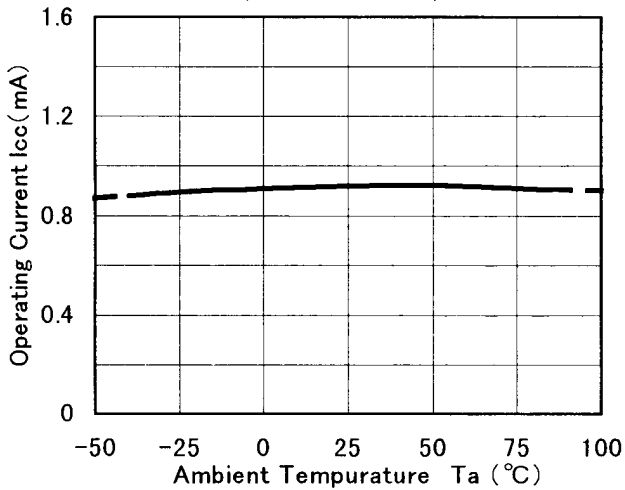
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V <sub>IO</sub>	R <sub>S</sub> =0Ω	-	2	7	mV
Input Offset Current	I <sub>IO</sub>		-	5	50	nA
Input Bias Current	I <sub>B</sub>		-	25	250	nA
Large Signal Voltage Gain	A <sub>V</sub>	R <sub>L</sub> ≥2kΩ	88	100	-	dB
Maximum Output Voltage Swings	V <sub>OM</sub>	R <sub>L</sub> =2kΩ	3.5	-	-	V
Input Common Mode Voltage Range	V <sub>ICM</sub>		0~3.5	-	-	V
Common Mode Rejection Ratio	CMR		70	90	-	dB
Supply Voltage Rejection Ratio	SVR		80	94	-	dB
Output Source Current	I <sub>SOURCE</sub>	V <sub>IN</sub> <sup>+</sup> =1V,V <sub>IN</sub> <sup>-</sup> =0V	20	30	-	mA
Output Sink Current	I <sub>SINK</sub>	V <sub>IN</sub> <sup>+</sup> =0V,V <sub>IN</sub> <sup>-</sup> =1V	8	20	-	mA
Operating Current	I <sub>CC</sub>	R <sub>L</sub> =∞	-	1.0	1.75	mA
Slew Rate	SR		-	1.2	-	V/μs
Unity Gain Frequency	f <sub>T</sub>		-	1.2	-	MHz

## ■ TYPICAL CHARACTERISTICS

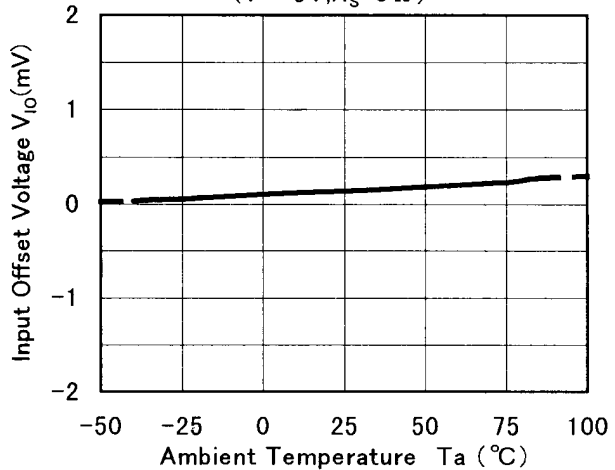


## ■ TYPICAL CHARACTERISTICS

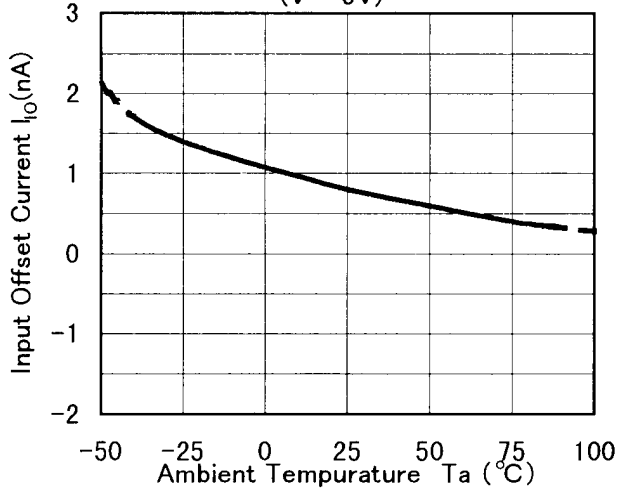
Operating Current vs. Temperature  
( $V^+/V^- = \pm 2.5V$ )



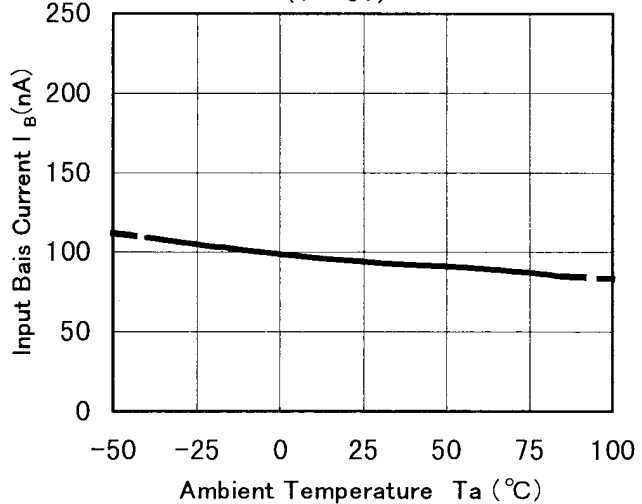
Input Offset Voltage vs. Temperature  
( $V^+ = 5V, R_s = 0\Omega$ )



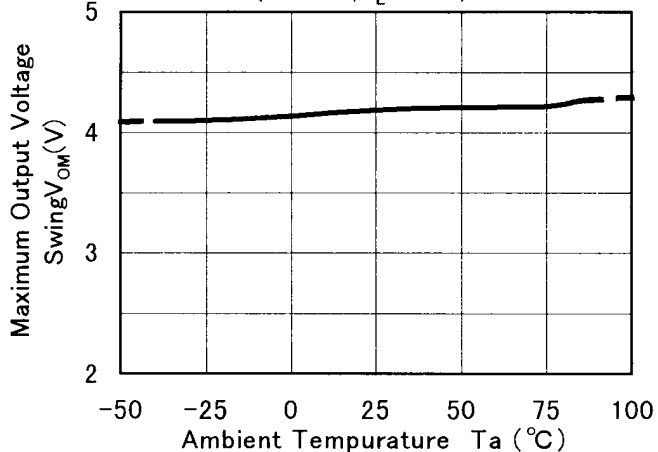
Input Offset Current vs. Temperature  
( $V^+ = 5V$ )



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



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



**[CAUTION]**

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