

## Single Supply Single Operational Amplifier with Full Swing Output

### ■ GENERAL DESCRIPTION

The NJM2741 is a low supply voltage operational amplifier with Full swing output.

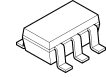
It is suitable for audio section of portable sets, PCs and any General-purpose use.

### ■ FEATURES

- Operating Voltage : 2.5V to 14V
- Output Full Swing :  $V_{OH} \geq 4.9V$  Typ. (at  $V^+ = 5V, R_L = 5k\Omega$ )  
:  $V_{OL} \leq 0.1V$  Typ. (at  $V^+ = 5V, R_L = 5k\Omega$ )
- Offset Voltage : 1mV Typ
- Slew Rate : 3.5V/ $\mu s$  Typ.
- Low Distortion : 0.001% typ. (at  $V^+ = 5V, f = 1kHz$ )
- Low Input Voltage Noise : 10nV/ $\sqrt{Hz}$  typ.
- Bipolar Technology
- Package Outline : MTP5, SC88A

### ■ PIN CONFIGURATION

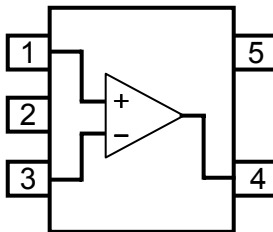
### ■ PACKAGE OUTLINE



NJM2741F



NJM2741F3



**NJM2741F**  
**NJM2741F3**  
(Top View)

### PIN FUNCTION

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

## ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V^+$	15	V
Differential Input Voltage Range	$V_{ID}$	$\pm 15$ (Note1)	V
Common Mode Input Voltage Range	$V_{ICM}$	0 to 15 (Note1)	V
Power Dissipation	$P_D$	390[MTP5] (Note2) 280[SC88A] (Note2)	mW
Operating Temperature Range	$T_{opr}$	-40 to +85	$^{\circ}C$
Storage Temperature Range	$T_{stg}$	-50 to +125	$^{\circ}C$

(Note1) For supply voltage less than 15V, the absolute maximum input voltage is equal to the supply voltage.

(Note2) On the PCB "EIA/JEDEC (76.2x114.3x1.6mm, two layers, FR-4)"

## ■ OPERATING VOLTAGE ( $T_a=25^{\circ}C$ )

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V^+$	2.5 to 14	V

## ■ ELECTRICAL CHARACTERISTICS

### ● DC CHARACTERISTICS ( $V^+=5V, T_a=25^{\circ}C$ )

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	$I_{CC}$	$R_L=\infty, V_{IN}=2.5V,$ No Signal Apply	-	2.2	3.3	mA
Input Offset Voltage	$V_{IO}$	$R_S \leq 10k\Omega$	-	1	6	mV
Input Bias Current	$I_B$		-	100	350	nA
Input Offset Current	$I_{IO}$		-	5	100	nA
Large Signal Voltage Gain	$A_V$	$R_L \geq 10k\Omega$ to 2.5V, $V_o=0.5V$ to 4.5V	65	85	-	dB
Common Mode Rejection Ratio	CMR	$0V \leq V_{CM} \leq 4V$	60	75	-	dB
Supply Voltage Rejection Ratio	SVR	$V^+=2.5V$ to 14V, $V_{CM}=V^+/2$	60	80	-	dB
Output Voltage	$V_{OH}$	$R_L=5k\Omega$ to 2.5V	4.75	4.9	-	V
	$V_{OL}$	$R_L=5k\Omega$ to 2.5V	-	0.1	0.25	V
Input Common Mode Voltage Range	$V_{ICM}$	CMR $\geq 60dB$	0	-	4	V

### ● AC CHARACTERISTICS ( $V^+=5V, T_a=25^{\circ}C$ )

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Unity Gain Bandwidth	GB	$f=10kHz, R_L=10k\Omega$ to 2.5V	-	10	-	MHz
Phase Margin	$\Phi_M$	$R_L=10k\Omega$ to 2.5V, $C_L=10pF$	-	75	-	Deg
Equivalent Input Noise Voltage	$V_{NI}$	$f=1kHz, V_{CM}=2.5V$	-	10	-	nV/ $\sqrt{Hz}$
Total Harmonic Distortion	THD	$f=1kHz, A_V=+2$ $R_L=10k\Omega$ to 2.5V, $V_o=1.5V_{rms}$	-	0.001	-	%

### ● AC CHARACTERISTICS ( $V^+=5V, T_a=25^{\circ}C$ )

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Slew Rate	SR	(Note 3), $A_V=1, V_{IN}=2V_{pp}$ $R_L=10k\Omega$ to 2.5V, $C_L=10pF$	-	3.5	-	V/ $\mu s$

(Note 3) Number specified is the slower of the positive and negative slew rates.

#### [CAUTION]

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