

HIGH SPEED SINGLE SUPPLY OPERATIONAL AMPLIFIER

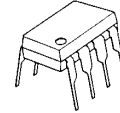
■ GENERAL DESCRIPTION

The **NJM2742** is a high speed single supply operational amplifier .

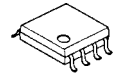
It has wide supply voltage range, +3 to +32 volt and high slew rate.

It is suitable for power supply and motor driver units.

■ PACKAGR OUTLINE



NJM2742D



NJM2742M



NJM2742V

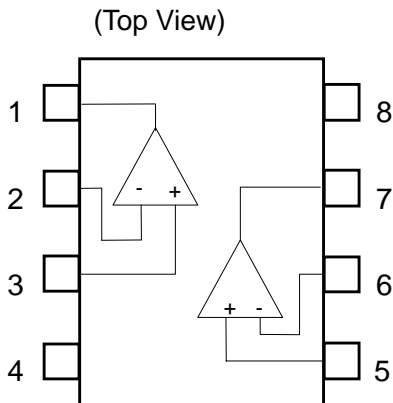


NJM2742RB1

■ FEATURES

- Single Supply
- Operating Voltage (3 to 32V)
- Low Saturation Output Voltage ($V_{OL} = 0.2V$ typ. at $R_L = 2k\Omega, V^+ = 5V$)
- High Slew Rate (10V/ μs typ.)
- Bipolar Technology
- Package Outline DIP8, DMP8, SSOP8, TVSP8

■ PIN CONFIGURATION



PIN FUNCTION

- 1.A OUTPUT
- 2.A -INPUT1
- 3.A +INPUT1
- 4.V⁻
- 5.B +INPUT2
- 6.B -INPUT2
- 7.B OUTPUT2
- 8.V⁺

NJM2742

PRELIMINARY

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	+36	V
Differential Input Voltage	V _{ID}	±36	V
Common Mode Input Voltage	V _{IC}	-0.3 to +36	V
Power Dissipation	P _D	500 (DIP8) 300 (DMP8) 250 (SSOP8) 320 (TVSP8)	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +125	°C

■ RECOMMENDED OPERATING CONDITION (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Operating Voltage Range	V ⁺		3.0	-	32	V

■ DC CHARACTERISTICS (V⁺/V⁻=±15V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Operating Current	I _{CC}	No Signal	-	4.3	5.5	mA
Input Offset Voltage	V _{IO}		-	1.0	10	mV
Input Bias Current	I _B		-	80	400	nA
Input Offset Current	I _{IO}		-	5	75	nA
Open Loop Voltage Gain	A _v	R _L >2kΩ	80	110	-	dB
Common Mode Rejection	CMR	-15V < V _{IC} < 12.5V	55	75	-	dB
Supply Voltage Rejection	SVR	3V < V ⁺ < 32V	70	90	-	dB
Maximum Output Voltage 1	V _{OM1}	R _L >10kΩ	±13.7	+14 /-14.8	-	V
Maximum Output Voltage 2	V _{OM2}	R _L >2kΩ	±13.5	-	-	V
Source Output Current	I _{SOURCE}	V _{IN+} =1V, V _{IN-} =0V, V _O =0V	10	30	-	mA
Sink Output Current	I _{SINK}	V _{IN+} =0V, V _{IN-} =1V, V _O =0V	10	30	-	mA
Input Common Mode Voltage Range	V _{ICM}	CMR > 55dB	-15	-	12.5	V

■ AC CHARACTERISTICS (V⁺/V⁻=±15V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Gain Bandwidth product	GB	f=10kHz	-	2	-	MHz
Equivalent Input Noise Voltage	V _{NI}	f=1kHz	-	40	-	nV/ √Hz
Capacitive Load Tolerance	CL		-	1000	-	pF

■ TRANSIENT CHARACTERISTICS (V⁺/V⁻=±15V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Slew Rate	SR		-	10	-	V/μs

■ DC CHARACTERISTICS

($V^+=+5V$, $T_a=25^\circ C$)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Operating Current	I_{CC}	No Signal	-	3.3	4.5	mA
Input Offset Voltage	V_{IO}		-	1.0	10	mV
Input Bias Current	I_B		-	80	400	nA
Input Offset Current	I_{IO}		-	5	75	nA
Open Loop Voltage Gain	A_V	$R_L > 2k\Omega$	80	110	-	dB
Common Mode Rejection	CMR	$0V < V_{IC} < 2.8V$	50	60	-	dB
Supply Voltage Rejection	SVR	$3V < V^+ < 32V$	70	90	-	dB
Maximum Output Voltage	V_{OH}	$R_L=2k\Omega$	3.7	4.0	-	V
	V_{OL}	$R_L=2k\Omega$	-	0.1	0.2	
Source Output Current	I_{SOURCE}	$V_{IN+}=1V, V_{IN-}=0V, V_O=2.5V$	10	30	-	mA
Sink Output Current	I_{SINK}	$V_{IN+}=0V, V_{IN-}=1V, V_O=2.5V$	10	30	-	mA
Input Common Mode Voltage Range	V_{ICM}	CMR > 50dB	0	-	2.8	V

■ AC CHARACTERISTICS

($V^+=+5V$, $T_a=25^\circ C$)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Gain Bandwidth product	GB	$f=10kHz$	-	2	-	MHz
Equivalent Input Noise Voltage	V_{NI}	$f=1kHz$	-	40	-	nV/ \sqrt{Hz}
Capacitive Load Tolerance	CL		-	1000	-	pF

■ TRANSIENT CHARACTERISTICS

($V^+=+5V$, $T_a=25^\circ C$)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Slew Rate	SR		-	7	-	V/ μs

[CAUTION]

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