

## VIDEO DIFFERENTIAL OUTPUT DRIVER

### ■GENERAL DESCRIPTION

The NJM2504 is video differential output driver. The single-end signal is converted to the differential signal. The single-end signal can be transmitted by the differential signal by the connection with NJM2507.

And, it is converted to the single-end signal by the NJM2507.

The common mode noise can be removed because of the differential motion transmission, and it is the best for the transmission of car AV system.

### ■PACKAGE OUTLINE

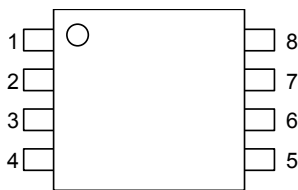


**NJM2504RB1**

### ■FEATURES

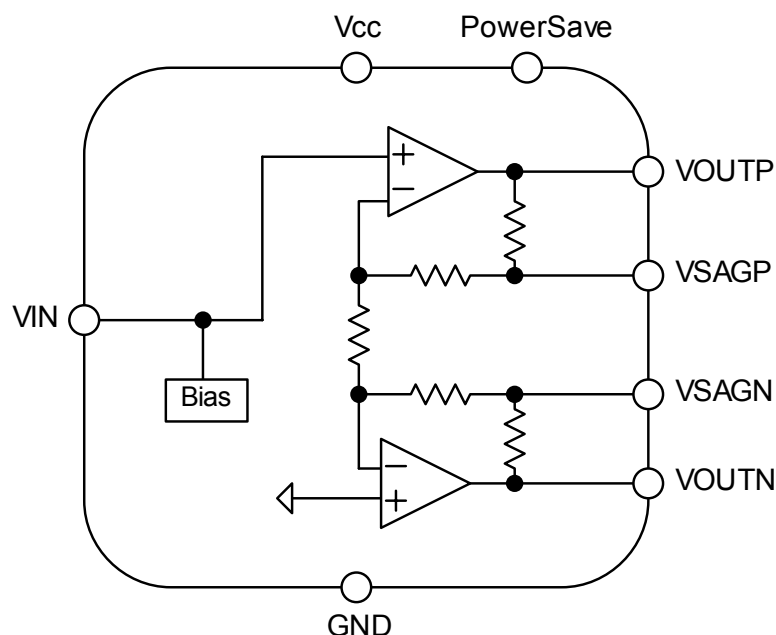
- Operating Voltage 4.5 to 9.5V
- Input: Single-end signal, Output: Differential signal
- Internal 6dB Amplifier
- Internal 75ohm Driver
- Internal SAG Correction Circuit
- Bipolar Technology
- Package Outline TVSP8

### ■PIN CONNECTION



- 1: V+
- 2: Power Save
- 3: VIN
- 4: GND
- 5: Vsagn
- 6: Voutn
- 7: Vsagp
- 8: Voutp

### ■BLOCK DIAGRAM



# NJM2504

## ■ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup>	10	V
Power Dissipation	P <sub>D</sub>	580(Note1)	mW
Operating Temperature Range	Topr	-40 to +85(Note2)	°C
Storage Temperature Range	Tstg	-40 to +150	°C

(Note 1) At on a board of EIA/JEDEC specification. (114.3 x 76.2 x 1.6mm 2 layers, FR-4)

(Note 2) It has high operating temperature range product. (-40 to +105°C)

## ■RECCOMENDED OPERATING CONDITIONS (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating voltage	Vopr		4.5	-	9.0	V

## ■ELECTRICAL CHARACTERISTICS (V<sup>+</sup> =5V, RL=150ohm, Ta=25°C)

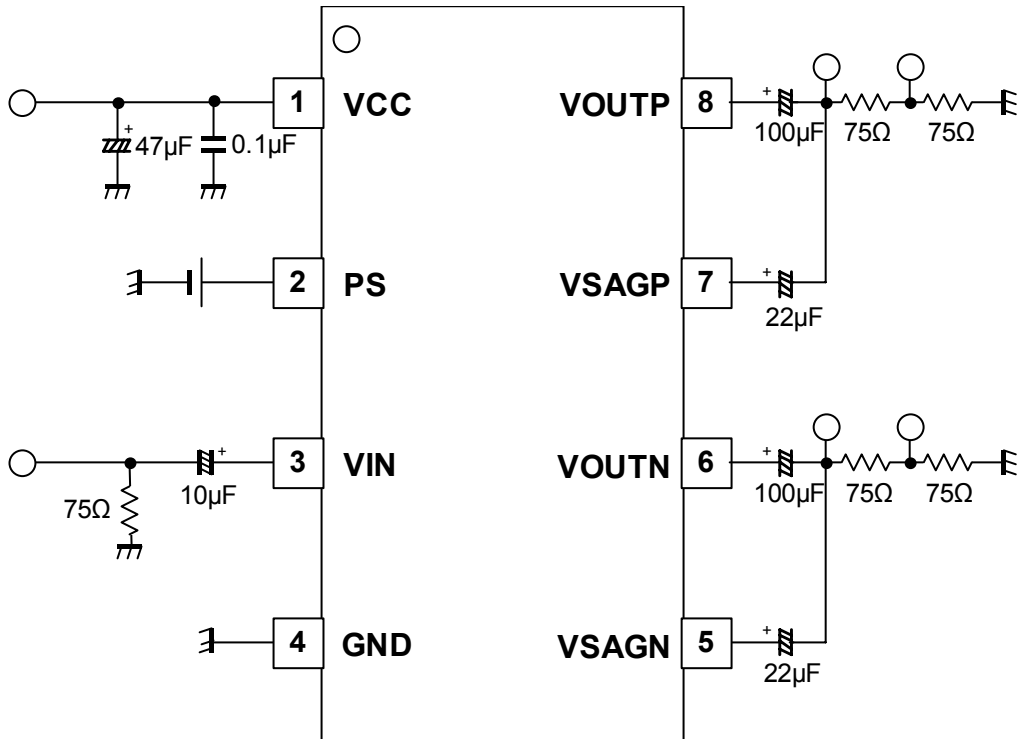
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	I <sub>CC</sub>	No signal	-	16	20	mA
Supply Current at Power Save Mode	I <sub>save</sub>	Power save mode	-	0.3	0.5	mA
Maximum Output Level	V <sub>om</sub>	Vin=100kHz, sin-signal, THD=1%,	2.2	2.4	-	Vp-p
Voltage Gain	G <sub>v</sub>	Vin=1MHz, 1.0Vp-p sin-signal	5.7	6.2	6.7	dB
Frequency Characteristics	G <sub>f</sub>	Vin=10MHz/1MHz, 1.0Vpp sin-signal	-1.0	0	1.0	dB
Differential Gain	DG	Vin=1.0Vp-p 10step video signal	-	0.5	-	%
Differential Phase	DP	Vin=1.0Vp-p 10step video signal	-	0.5	-	deg
SW Voltage High Level	V <sub>thH</sub>		2.2	-	V <sup>+</sup>	V
SW Voltage Low Level	V <sub>thL</sub>		0	-	1.0	V
SW Sink Current High Level	I <sub>thH</sub>	V=5V	-	-	120	μA
SW Sink Current Low Level	I <sub>thL</sub>	V=0.3V	-	-	8.0	μA

## ■CONTROL CHARACTERISTIC

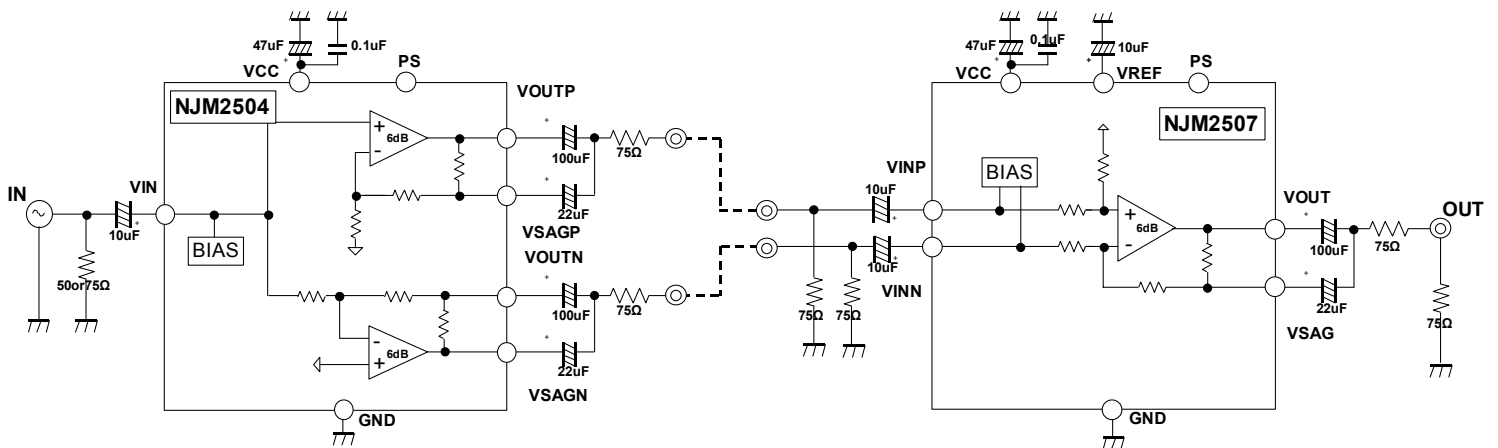
PARAMETER	STATUS	MODE	
Power Save	H	Power save: OFF	Active mode
	L	Power save: ON	Non-Active mode (Mute)
	OPEN	Power save: ON	Non-Active mode (Mute)

## TEST CIRCUIT

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## APPLICATION CIRCUIT



# NJM2504

## ■ EQUIVALENT CIRCUIT (V<sub>cc</sub>=5V)

PIN No.	PIN NAME	EQUIVALENT CIRCUIT	DC VOLTAGE
1	V <sub>cc</sub>		5V
2	Power Save		-
3	V <sub>IN</sub>		2.5V
4	GND		-
5	V <sub>SAGN</sub>		2.5V
6 8	V <sub>OUTN</sub> V <sub>OUTP</sub>		2.5V
7	V <sub>SAGP</sub>		2.5V

[CAUTION]  
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