LOW VOLTAGE VIDEO AMPLIFIER WITH LPF

■GENERAL DESCRIPTION

The **NJM2561A** is a low voltage single video amplifier with low pass filter.

The **NJM2561A** features low power and small package. It is suitable for any video application.

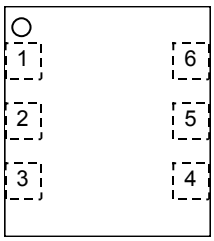
■PACKAGE OUTLINE

NJM2561AKG1

■FEATURES

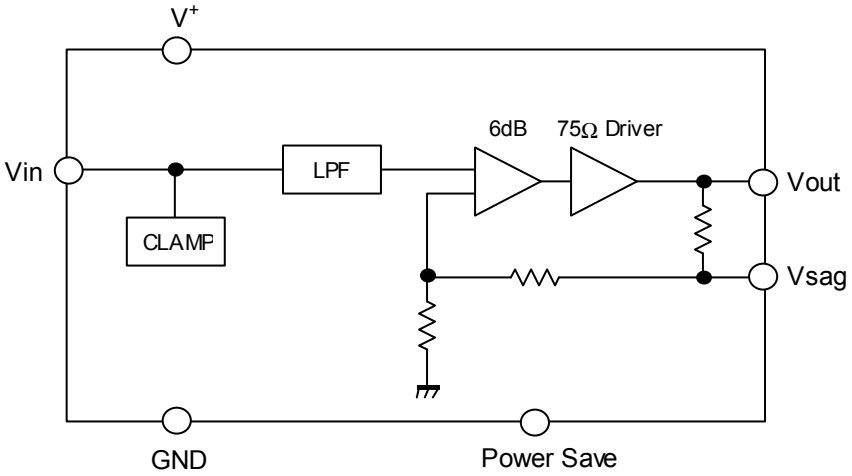
- Operating Voltage 2.6 to 5.5V
- 6^{th} Order LPF -33dB at 19MHz typ.
- 6dB Amplifier
- 75Ω Driver Circuit
- Power Save Circuit
- Bipolar Technology
- Package Outline ESON6 (1.6 x 1.6 x 0.4 mm)

■PIN CONFIGURATION



1. Vsag
2. GND
3. Power Save
4. V+
5. Vout
6. Vin

■BLOCK DIAGRAM



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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	7.0	V
Power Dissipation	P_D	TBD Note1	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +125	°C

(Note1) At on a board of EIA/JEDEC specification. (101.5 x 114.5 x 1.6mm 2 layers, FR-4)

■ **RECOMMENDED OPEARATING CONDITION** (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	Vopr		2.6	3.0	5.5	V

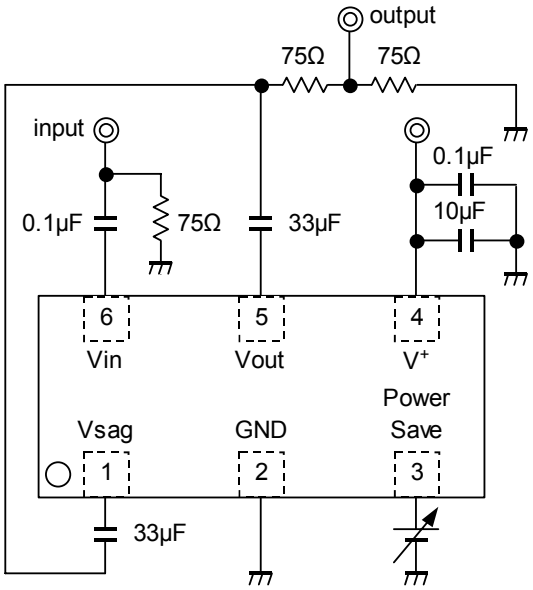
■**ELECTRICAL CHARACTERISTICS** (V^+=3.0V,R_L=150Ω,Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I_{CC}	No Signal	-	8.0	12.0	mA
Operating Current at Power Save	Isave	No Signal, Power Save Mode	-	30	50	μA
Maximum Output Voltage Swing	Vom	f=100kHz, Sine Signal, THD=1%	2.2	2.5	-	Vp-p
Voltage Gain	Gv	Vin=100kHz, 1.0Vp-p, Sine Signal	6.1	6.5	6.9	dB
Low Pass Filter Characteristic	Gfy4.5M	Vin=4.5MHz/100kHz, 1.0Vp-p	-0.6	-0.1	0.4	dB
	Gfy19M	Vin=19MHz/100kHz, 1.0Vp-p	-	-33	-23	
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
S/N Ratio	SNv	Vin=1.0Vp-p, R_L=75Ω 100% White Video Signal, f= 100kHz to 6MHz	-	65	-	dB
2nd. Distortion	Hv	Vin=1.0Vp-p, 3.58MHz, Sine Signal, R_L=75Ω	-	-50	-	dB
SW Change Voltage High Level	VthPH	Active	1.8	-	V^+	V
SW Change Voltage Low Level	VthPL	Non-active	0	-	0.3	

■**CONTROL TERMINAL**

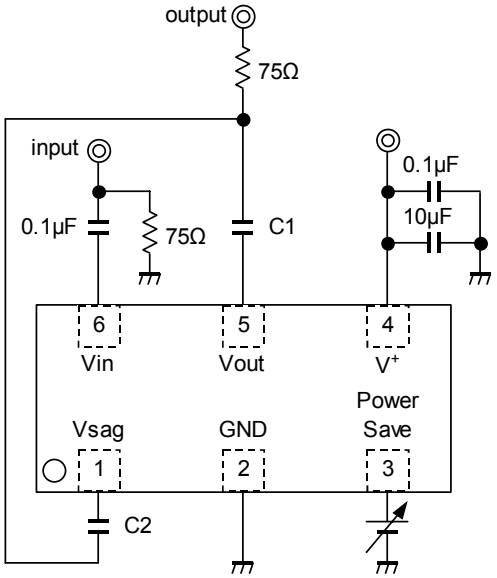
PARAMETER	STATUS	NOTE
Power Save	H	Power Save: OFF(Active)
	L	Power Save: ON (Mute)
	OPEN	Power Save: ON (Mute)

■TEST CIRCUIT

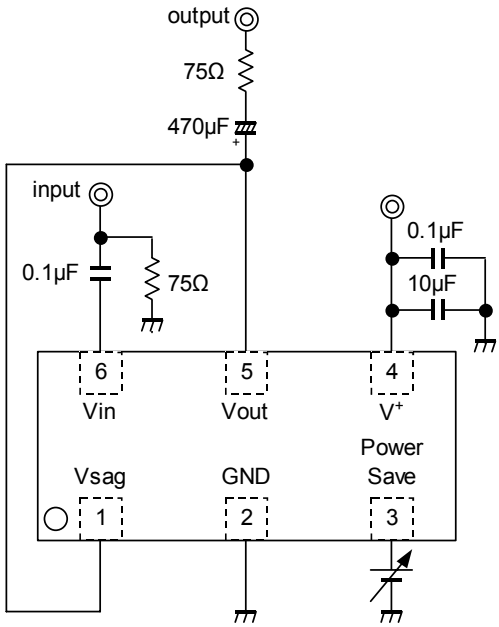


■ APPLICATION CIRCUIT

(1) Standard circuit



(2) SAG correction unused circuit



■ INSTRUCTIONS AND DIRECTIONS FOR USE

(1) Standard circuit

The SAG correction circuit reduces output coupling capacitor values.
However, this circuit may cause to SAG deterioration, and lose synchronization by luminance fluctuation.
Checking the waveform containing a lot of low frequency components like a bounce waveform (Worst condition waveform of SAG). Refer to Figure 1 and Figure 2.

(2) SAG correction unused circuit

To stabilize the synchronized signal, we recommend this circuit.
Connect the coupling capacitor after connecting the Vout pin and Vsag pin. The recommended value is 470µF or more. Refer to Figure 3 and Figure 4.

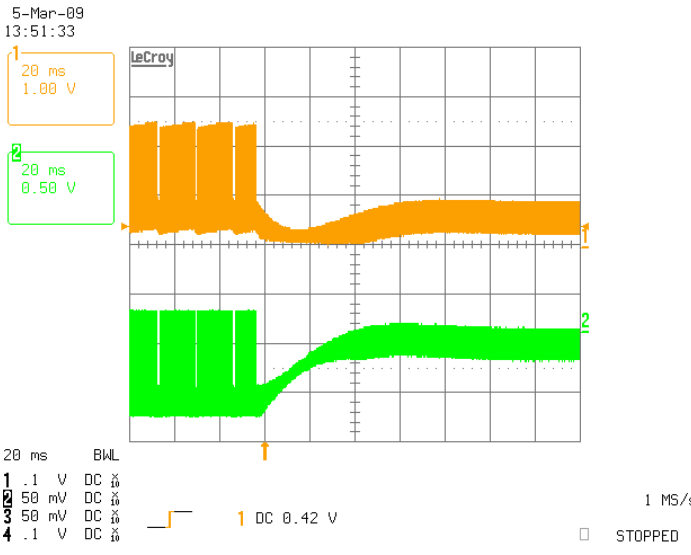


Figure 1
C1: 100µF, C2: 22µF
Input Signal: 1Vp-p, White → Black Waveform
Orange: Vout Pin Waveform
Green: waveform after output capacitor

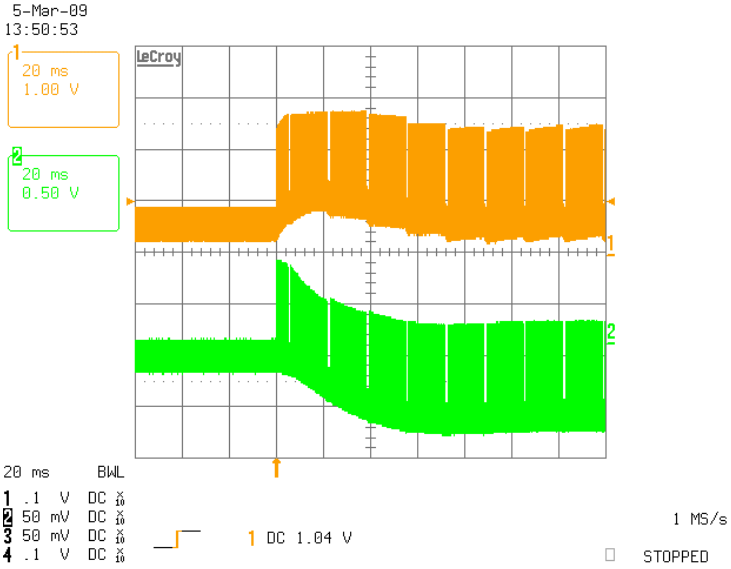


Figure 2
C1: 100µF, C2: 22µF
Input Signal: 1Vp-p, Black → White Waveform
Orange: Vout Pin Waveform
Green: waveform after output capacitor

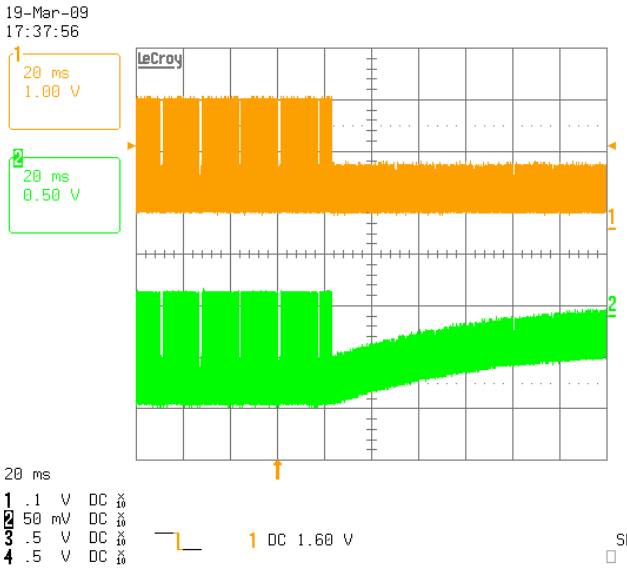


Figure 3
Output coupling capacitor:470µF
Input Signal: 1Vp-p, White → Black Waveform
Orange: Vout Pin Waveform
Green: waveform after output capacitor

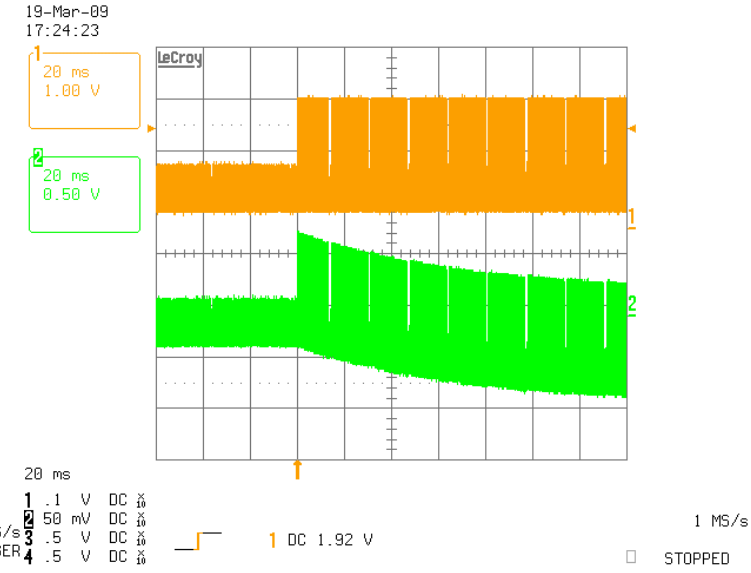


Figure 4
Output coupling capacitor:470µF
Input Signal: 1Vp-p, Black → White Waveform
Orange: Vout Pin Waveform
Green: waveform after output capacitor

[CAUTION]
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