

## 6CH VIDEO AMPLIFIER FOR DVD

### ■GENERAL DESCRIPTION

The NJM2588 is a dual supply voltage 6ch Video Amplifier. It includes 8dB amplifier and 75Ω driver, Low Pass Filter.

The input corresponds to the composite signal, the Y/C signal, and the component signal.

The NJM2588 is suitable for the DVD player and DVD recorder corresponding to the progressive video signal.

### ■PACKAGE OUTLINE

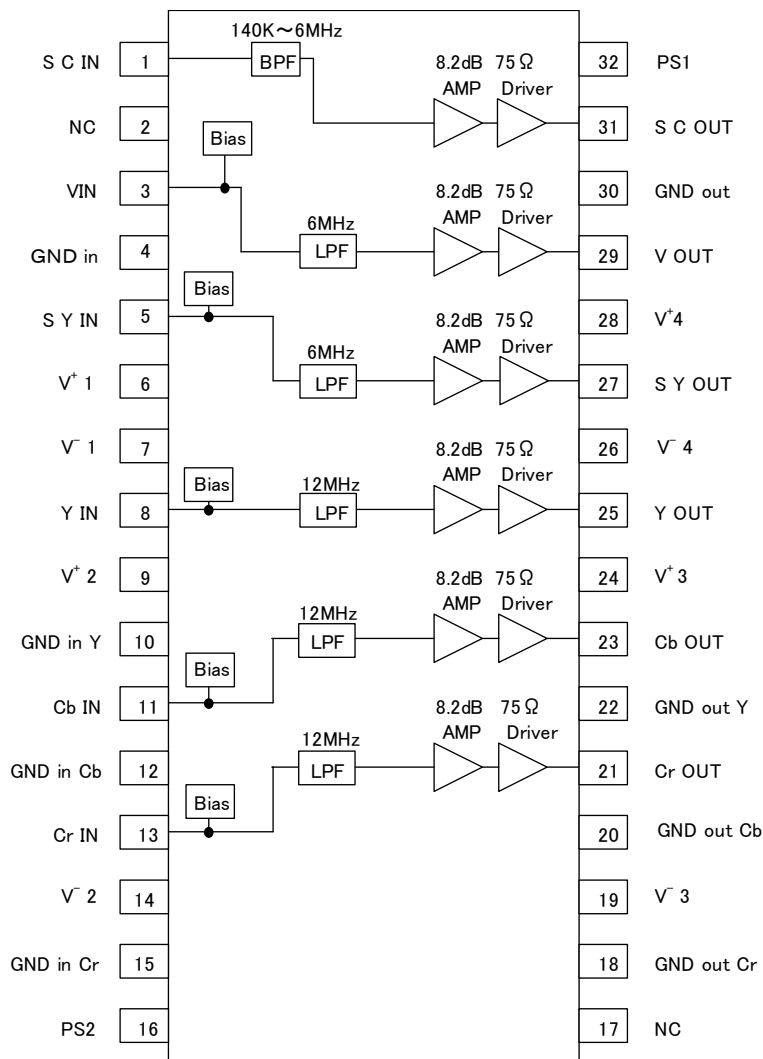


NJM2588V

### ■FEATURES

- Operating Voltage ±4.5 to ±5.5V
- 8dB amplifier
- Internal LPF
- Internal 75Ω Driver Circuit (2-system drive)
- Power Save Circuit
- Bipolar Technology
- Package Outline SSOP32

### ■BLOCK DIAGRAM



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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup> /V <sup>-</sup>	±6.5	V
Power Dissipation	P <sub>D</sub>	1250(Note)	mW
Operating Temperature Range	Topr	-40 to +80	°C
Storage Temperature Range	Tstg	-40 to +150	°C

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

**■ELECTRICAL CHARACTERISTICS** (Ta=25°C, V<sup>+</sup>1 to V<sup>+</sup>4=5V, V<sup>-</sup>1 to V<sup>-</sup>4=-5V, R<sub>L</sub>=150Ω)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current 1	I <sub>CC</sub>	V <sup>+</sup> 1 to V <sup>+</sup> 4, No Signal	-	46.0	65.0	mA
Operating Current 2	I <sub>EE</sub>	V <sup>-</sup> 1 to V <sup>-</sup> 4, No Signal	-95.0	-73.0	-	mA
Operating Current at Power Save	I <sub>SAVE</sub>	No Signal, Power Save Mode	-	0.2	0.7	mA
Maximum Output Voltage Swing	V <sub>OM</sub>	(SYIN, VIN, YIN, CbIN, CrIN) Vin=100kHz, Sine Signal, THD=1%	3.0	4.0	-	Vp-p
Voltage Gain1	G <sub>V1</sub>	(SYIN, VIN, YIN, CbIN, CrIN) Vin=1MHz, 0.7Vp-p, Sine Signal	7.9	8.3	8.7	dB
Voltage Gain2	G <sub>V2</sub>	(SCIN) Vin=3.58MHz, 0.23Vp-p, Sine Signal	8.1	8.5	8.9	dB
Gain Difference Between channel	ΔG <sub>V1</sub>	(SYIN, VIN, YIN, CbIN, CrIN) Vin=1MHz, 0.7Vp-p, Sine Signal	-0.2	0	+0.2	dB
Low Pass Filter Characteristic 1	G <sub>fy6.75M</sub>	(SYIN, VIN) 6.75MHz/1MHz, 0.7Vp-p, Sine Signal	-1.0	-0.3	0.5	dB
	G <sub>fy27M</sub>	(SYIN, VIN) 27MHz/1MHz, 0.7Vp-p, Sine Signal	-	-21.0	-12.0	dB
Low Pass Filter Characteristic 2	G <sub>fc6.75M</sub>	(SCIN) 6.75MHz/3.58MHz, 0.23Vp-p, Sine Signal	-1.0	0.0	0.5	dB
	G <sub>fc27M</sub>	(SCIN) 27MHz/3.58MHz, 0.23Vp-p, Sine Signal	-	-21.0	-12.0	dB
Low Pass Filter Characteristic 3	G <sub>fp13.5M</sub>	(YIN, CbIN, CrIN) 13.5MHz/1MHz, 0.7Vp-p, Sine Signal	-3.0	-1.2	0.0	dB
	G <sub>fp27M</sub>	(YIN, CbIN, CrIN) 27MHz/1MHz, 0.7Vp-p, Sine Signal	-	-8.0	-4.0	dB
Cross talk	CT	(SYIN, VIN, YIN, CbIN, CrIN) 4.43MHz, 0.7Vp-p, Sine Signal (SCIN) 4.43MHz, 0.23Vp-p, Sine Signal	-	-70	-	dB
Differential Gain	DG	(SYIN, VIN, YIN, CbIN, CrIN) Vin=0.7Vp-p, 10step Video Signal	-	0.3	-	%
Differential Phase	DP	(SYIN, VIN, YIN, CbIN, CrIN) Vin=0.7Vp-p, 10step Video Signal	-	0.3	-	deg
S/N Ratio	SN	(SYIN, VIN, YIN, CbIN, CrIN) Vin=0.7Vp-p, 100% White video signal, RL=75Ω, 100KHz to 6MHz	-	80	-	dB
Power Save SW Change Voltage High Level	V <sub>thPH</sub>	PS1, PS2	2.5	-	V <sup>+</sup>	V
Power Save SW Change Voltage Low Level	V <sub>thPL</sub>	PS1, PS2	0	-	1.0	V

## ■CONTROL TERMINAL

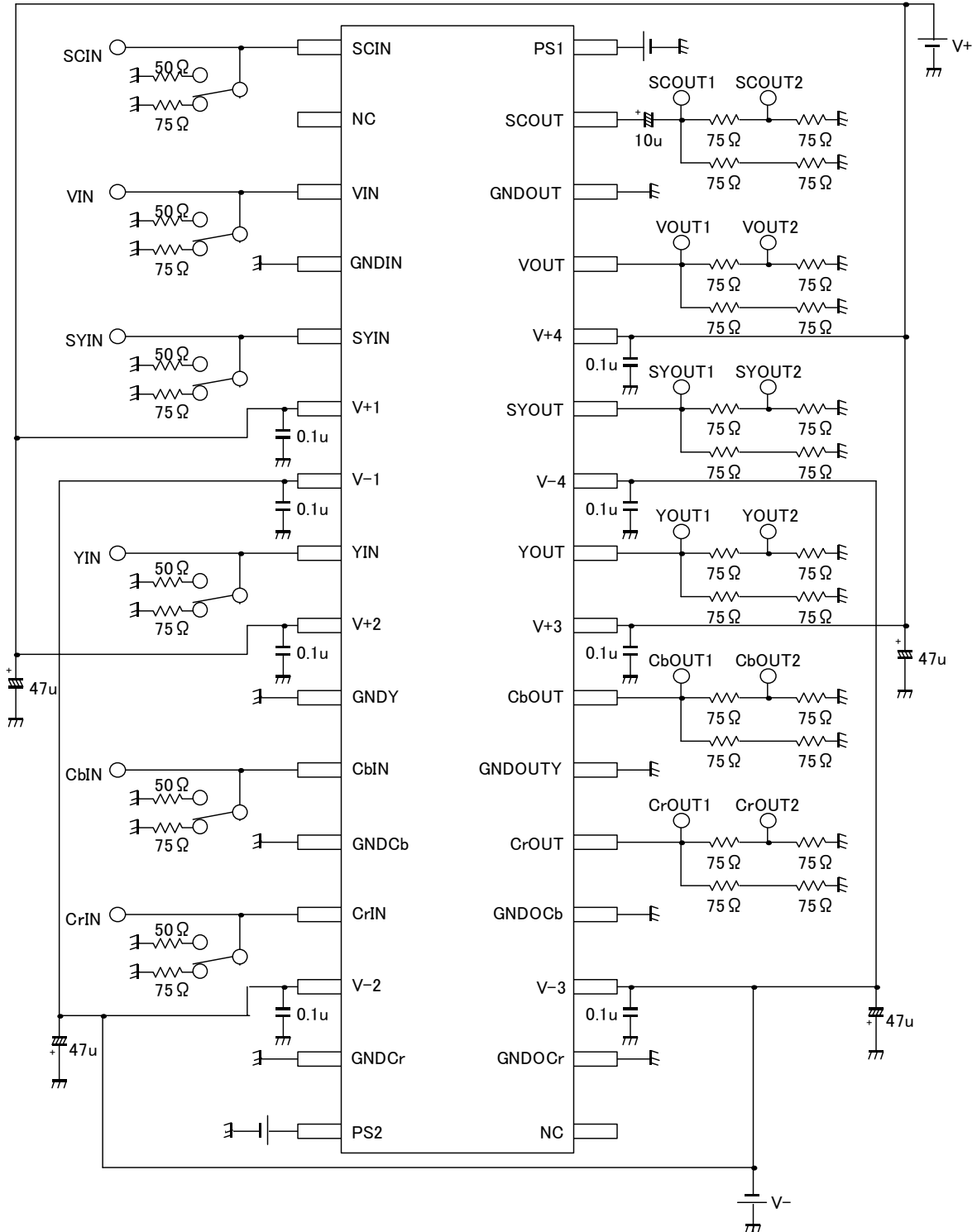
PARAMETER			STATUS	NOTE
P	S	1	H	(SYOUT, VOUT, SCOUT) Power Save: OFF
			L	(SYOUT, VOUT, SCOUT) Power Save: ON
			OPEN	(SYOUT, VOUT, SCOUT) Power Save: ON
P	S	2	H	(YOUT, CbOUT, CrOUT) Power Save: OFF
			L	(YOUT, CbOUT, CrOUT) Power Save: ON
			OPEN	(YOUT, CbOUT, CrOUT) Power Save: ON

## ■ TERMINAL DESCRIPTION

No.	SYMBOL	EQUIVALENT CIRCUIT	VOLTAGE	NOTE
1	SCIN		-	
3 5 8 11 13	VIN SYIN YIN CbIN CrIN		0V	
4 10 12 15	GNDIN GNDINY GNDINCb GNDINCr		0V	
18 20 22 30	GNDOUTCr GNDOUTCb GNDOUTY GNDOUT		0V	

No.	SYMBOL	EQUIVALENT CIRCUIT	VOLTAGE	NOTE
25 27 29	YOUT SYOUT VOUT		-0.6V	
31	SCOUT		0.7V	
16 32	PS2 PS1		0V	
21 23	CrOUT CbOUT		-1.2V	

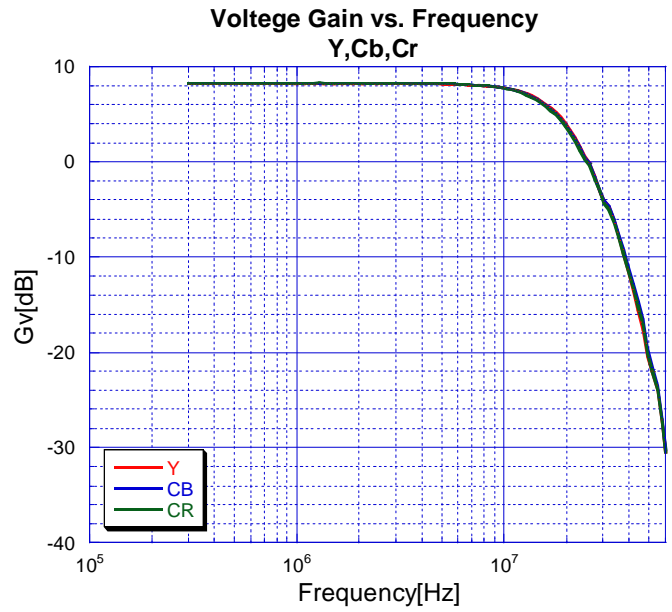
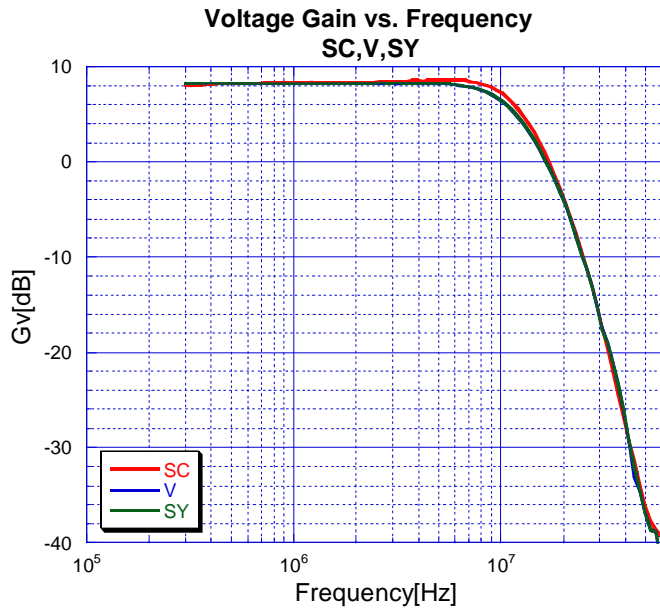
## TEST CIRCUIT



## NOTE

1. NJM2588 is dual power supply specification. The capacitor of NJM2588 is unnecessary excluding SC OUT.
2. NJM2588 has the DC offset voltage in each output terminal.
3. Please adjust the sync chip level of the input signal to 0V.
4. Please connect the capacitor of 10uF with each input pin other than 1pin when there is DC offset in the input.  
And, please connect the output capacitor of 470uF or more.
5. Please ground all GND terminals.

## TYPICAL CHARACTERISTICS



**[CAUTION]**

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