

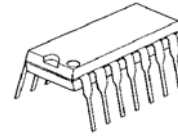
## SINGLE SUPPLY WIDE BAND 3ch VIDEO AMPLIFIER

### ■ GENERAL DESCRIPTION

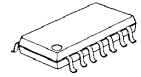
The **NJM2580** is a wide band 3ch video amplifier, operated on a single supply voltage. It is suitable for Y, Pb, and Pr signal because frequency range is 50MHz.

The **NJM2580** is suitable for Set Top Box, AV amplifier, and other high quality AV systems.

### ■ PACKAGE OUTLINE



**NJM2580D**



**NJM2580M**

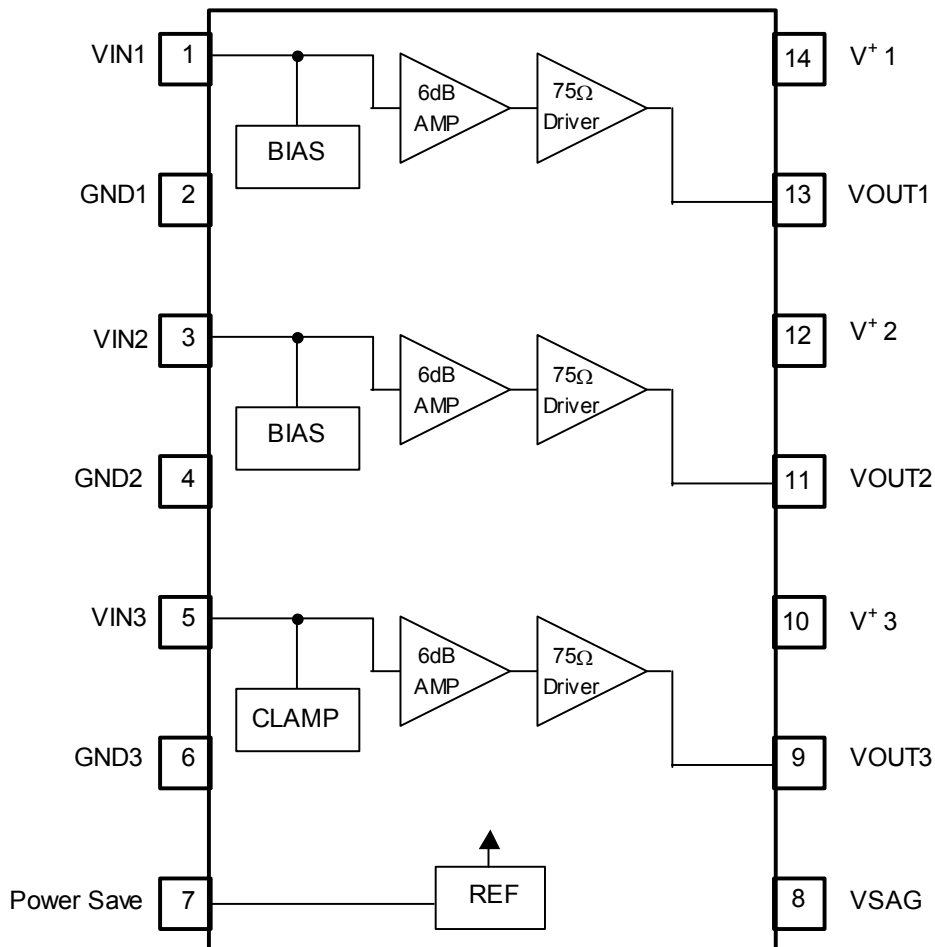


**NJM2580V**

### ■ FEATURES

- Operating Voltage                   4.5 to 5.5V
- Wide frequency range            0dB at 50MHz typ.
- Internal 6dB Amplifier
- Internal 75Ω Driver Circuit (2-system drive)
- Power Save Circuit
- Bipolar Technology
- Package Outline                   DIP14, DMP14, SSOP14

### ■ BLOCK DIAGRAM



# NJM2580

## ■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETERS	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup>	12.0	V
Power Dissipation	P <sub>D</sub>	(DIP) 620 (DMP) 430 (SSOP)520 *	mW
Operating Temperature Range	Topr	-40 to +85	°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

(V<sup>+</sup>=5.0V, R<sub>L</sub>=150Ω, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I <sub>CC</sub>	No signal	-	23.0	33.0	mA
Operating Current (Power Save)	I <sub>save</sub>	No signal, Power Save	-	-	1.2	mA
Maximum Output Voltage1	V <sub>om1</sub>	BIAS input Vin=1kHz, Sin signal, THD=1%,	2.4	3.0	-	Vp-p
Maximum Output Voltage2	V <sub>om2</sub>	CLAMP input Vin=1kHz, Sin signal, THD=1%,	2.2	2.4	-	Vp-p
Voltage Gain	G <sub>v</sub>	Vin=1MHz, 1.0Vp-p Sin signal	6.0	6.4	6.8	dB
Band Width	f		-	50	-	MHz
Frequency Characteristic	G <sub>f</sub>	Vin=50MHz / 1MHz, 1.0Vp-p, Sin signal	-	0	-	dB
Cross talk 1	CTB1	Vin=4.43MHz, 1.0Vp-p, Sin signal	-	-60	-50	dB
Cross talk 2	CTB2	Vin=50MHz, 1.0Vp-p, Sin signal	-	-40	-	dB
Differential Gain	DG	Vin=1.0Vpp 10step Video signal	-	0.3	-	%
Differential Phase	DP	Vin=1.0Vpp 10step Video signal	-	0.3	-	deg
S/N	SN <sub>v</sub>	Vin=1.0Vpp, 100% White Video signal	-	65	-	dB
Power Save Switch Change Voltage H Level	V <sub>thPH</sub>	IC Operating	2.0	-	V <sup>+</sup>	V
Power Save Switch Change Voltage L Level	V <sub>thPL</sub>	IC Waiting	0	-	0.6	V

## ■ MODE SWITCH FUNCTION

PIN	MODE	NOTES
Power Save	H	Power Save: OFF
	L	Power Save: ON (Mute)
	OPEN	Power Save: ON (Mute)

■ EQUIVALENT CIRCUIT (V+=5V)

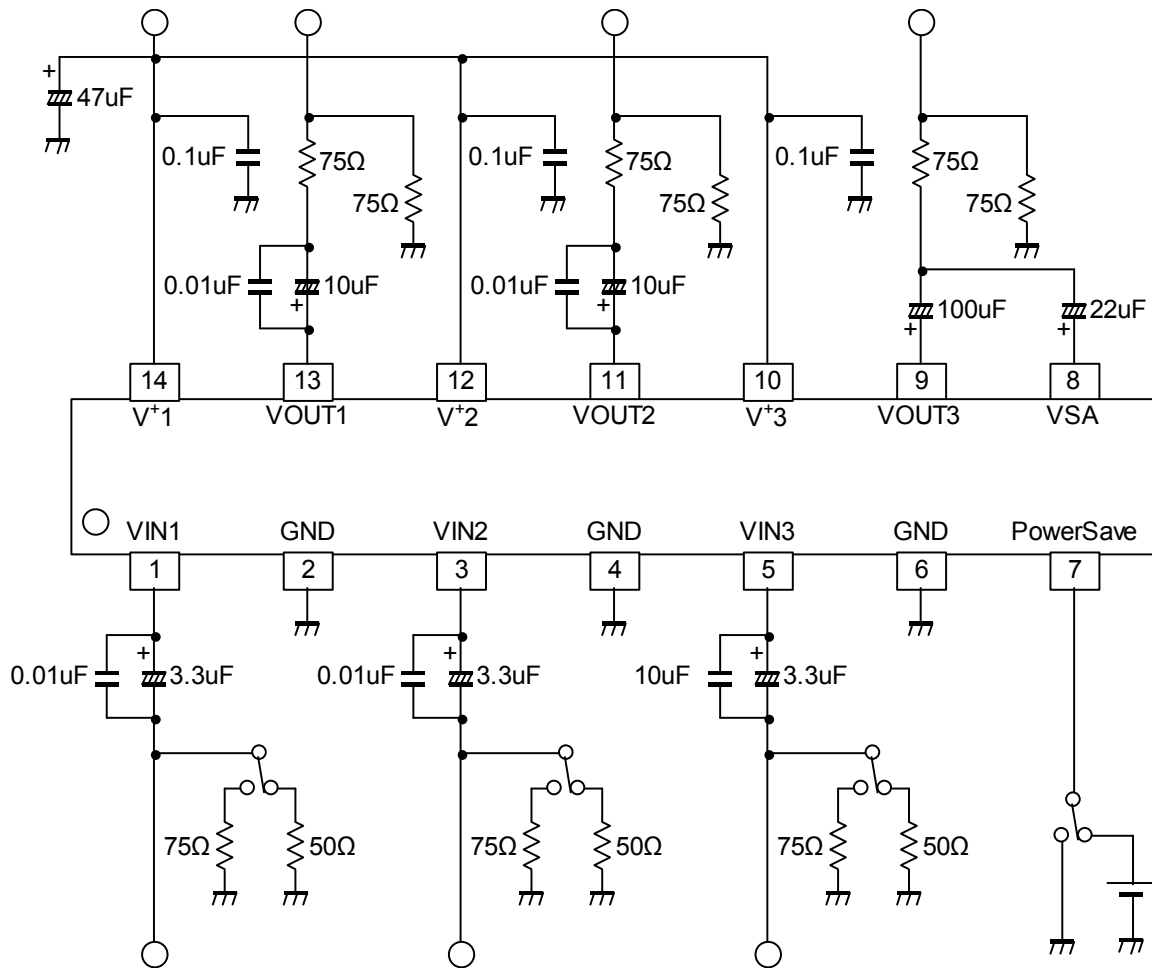
PIN No.	NAME	INSIDE EQUIVALENT CIRCUIT	VOLTAGE
1 3	VIN1 VIN2		2.60V
5	VIN3		1.70V
13 11	VOUT1 VOUT2		2.55V
9	VOUT3		1.35V

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## ■ EQUIVALENT CIRCUIT (V+=5V)

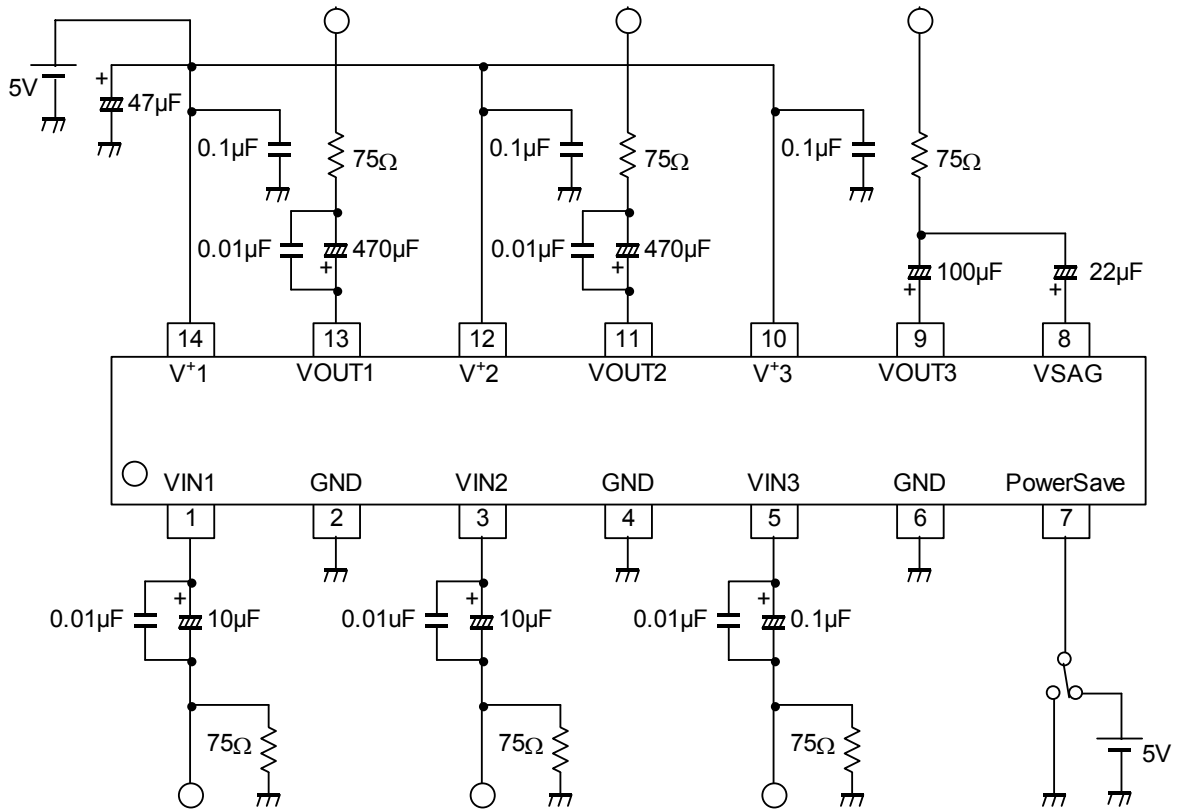
PIN No.	NAME	INSIDE EQUIVALENT CIRCUIT	VOLTAGE
7	Power Save		0V
8	VSAG		1.40V
14 12 10	V <sup>+</sup> 1 V <sup>+</sup> 2 V <sup>+</sup> 3		5V
2 4 6	GND1 GND2 GND3		0V

## TEST CIRCUIT

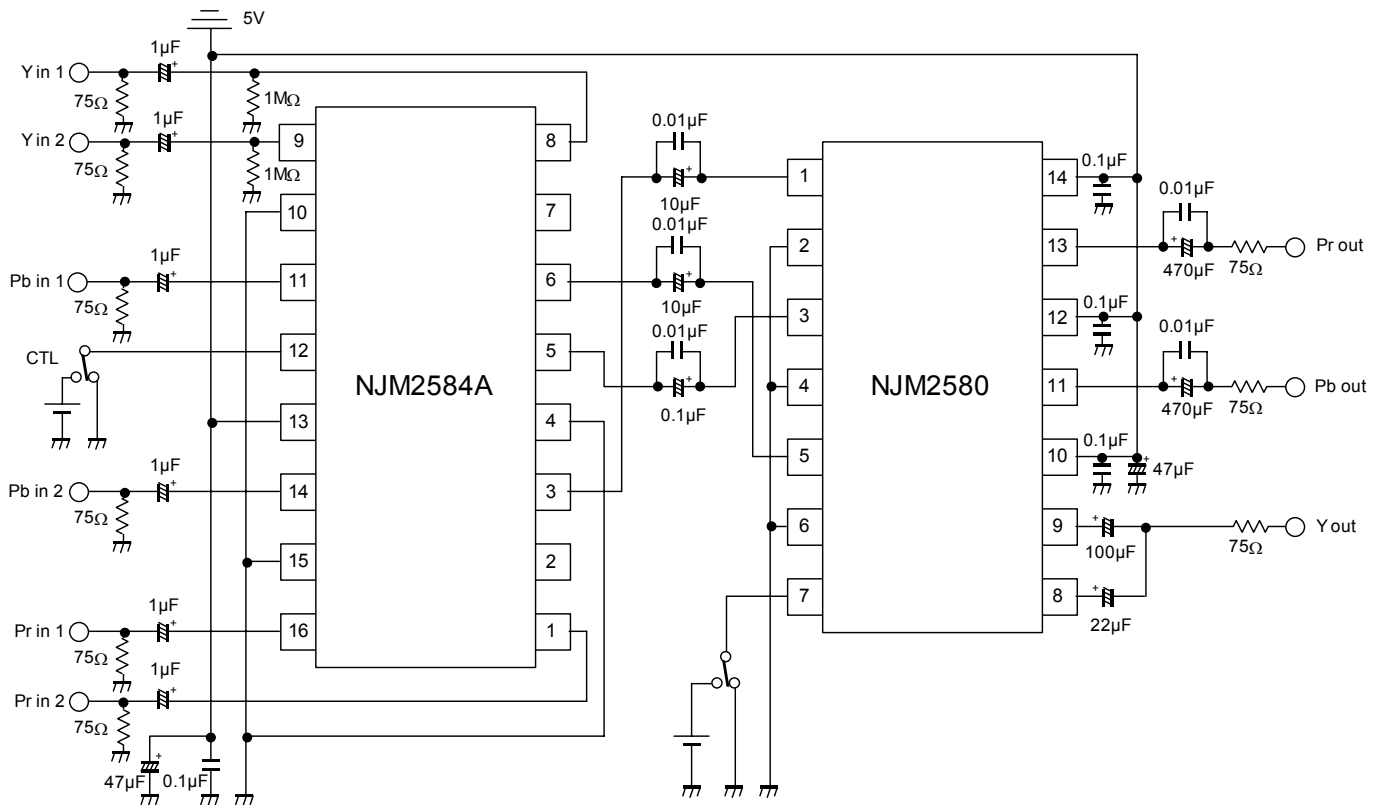


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## APPLICATION CIRCUIT 1

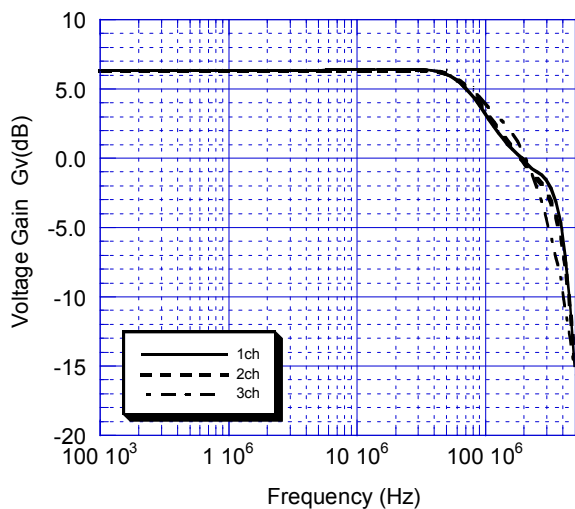


## APPLICATION CIRCUIT 2

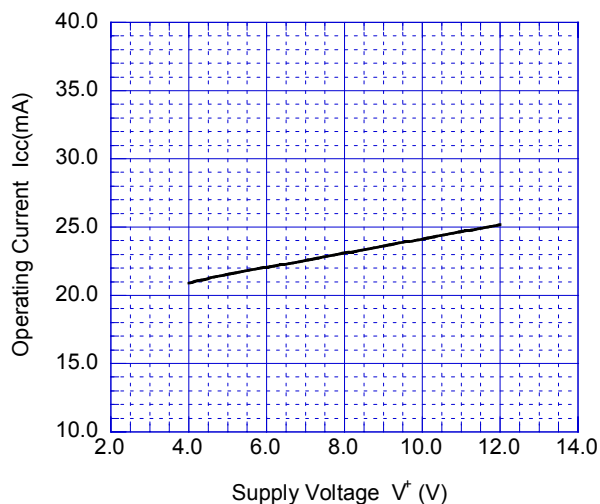


## ■ TYPICAL CHARACTERISTICS

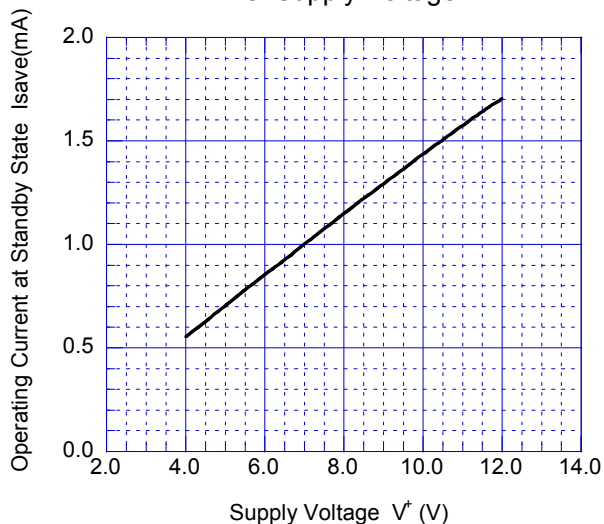
### Voltage Gain vs. Frequency



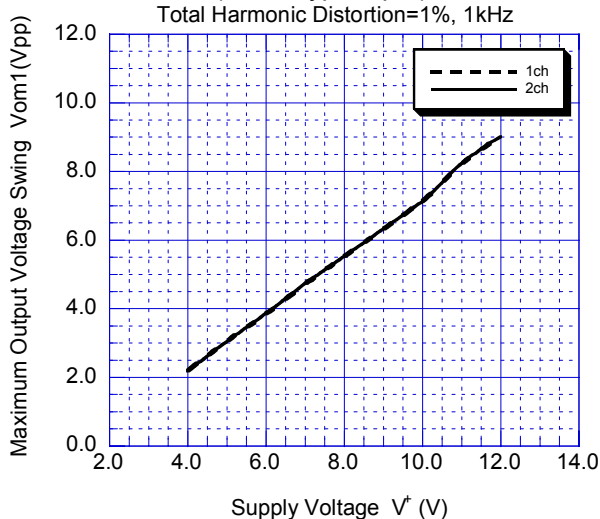
### Operating Current vs. Supply Voltage



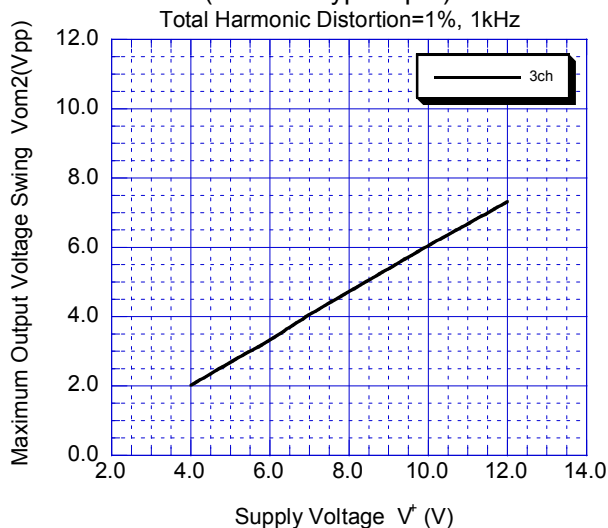
### Operating Current at Standby State vs. Supply Voltage



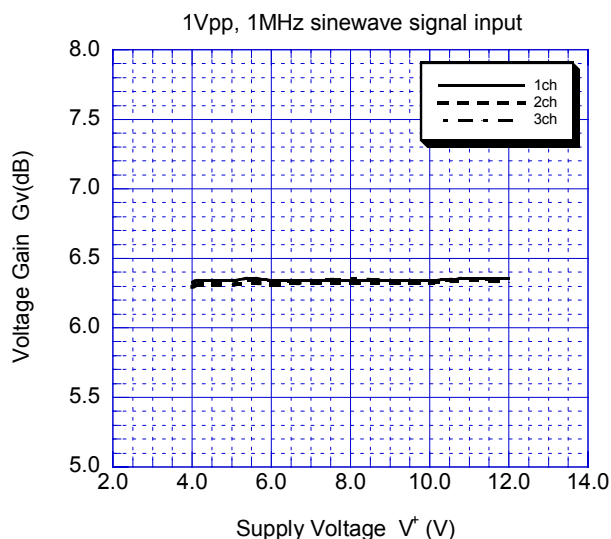
### Maximum Output Voltage Swing vs. Supply Voltage (BIAS Type Input)



### Maximum Output Voltage Swing vs. Supply Voltage (CLAMP Type Input)

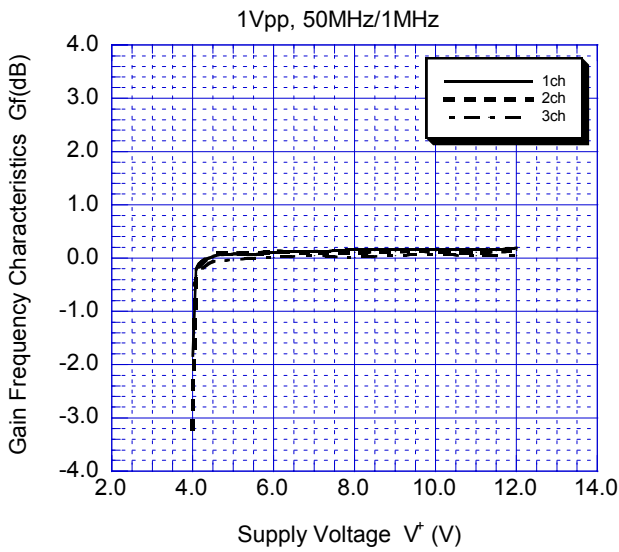


### Voltage Gain vs. Supply Voltage

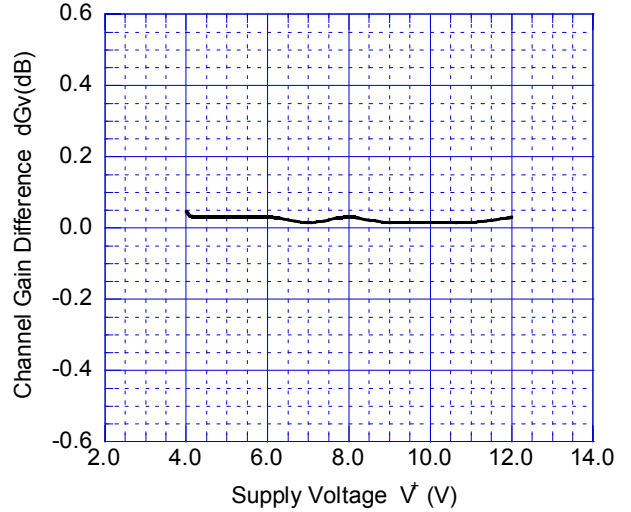


## TYPICAL CHARACTERISTICS

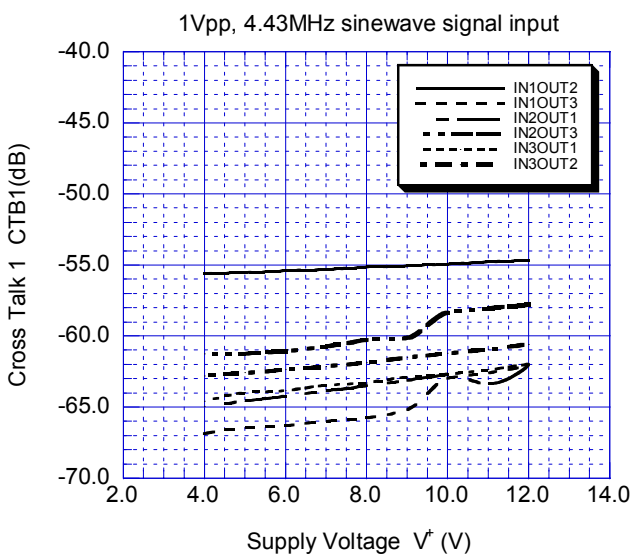
### Gain Frequency Characteristics vs. Supply Voltage



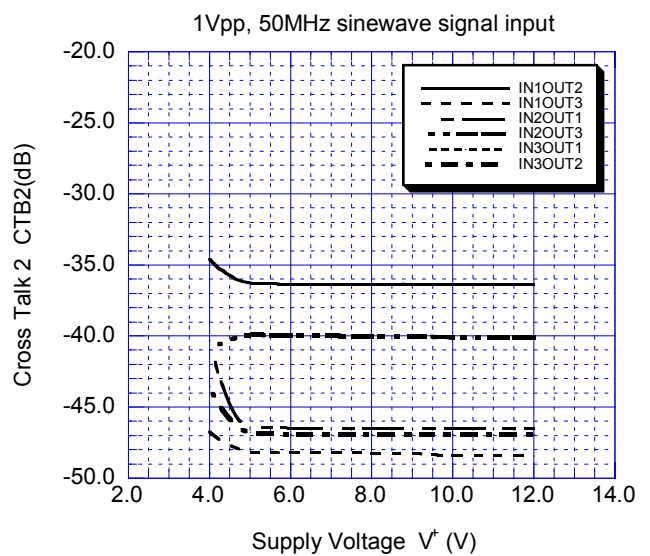
### Channel Gain Difference vs. Supply Voltage



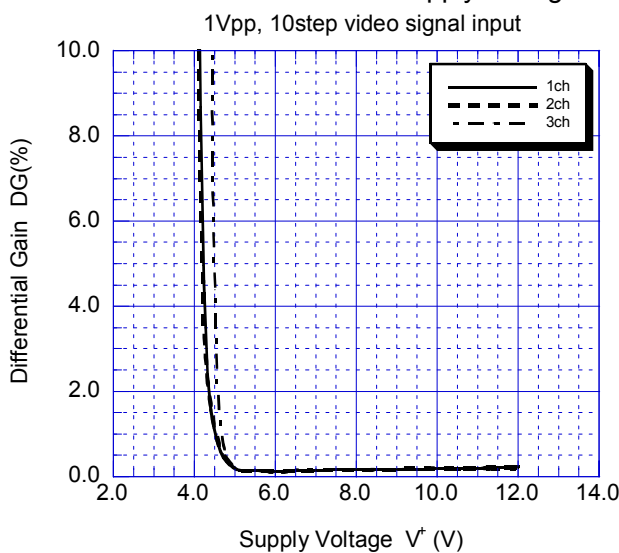
### Cross Talk 1 vs. Supply Voltage



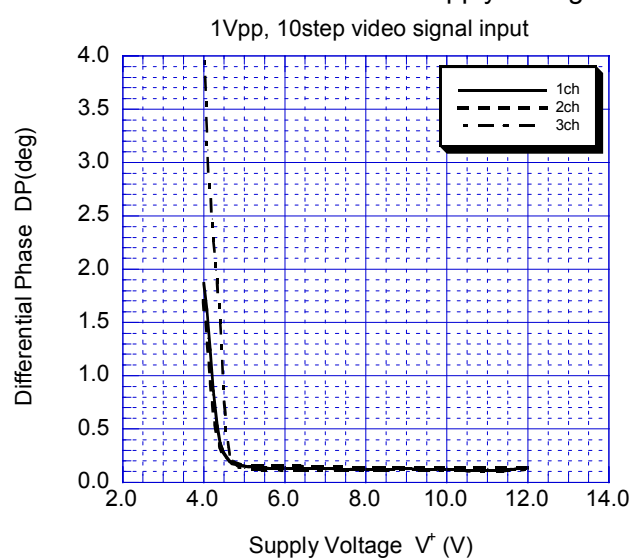
### Cross Talk 2 vs. Supply Voltage



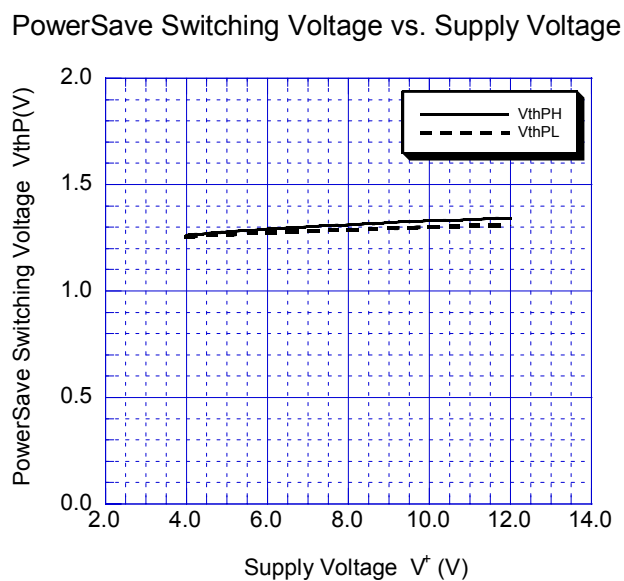
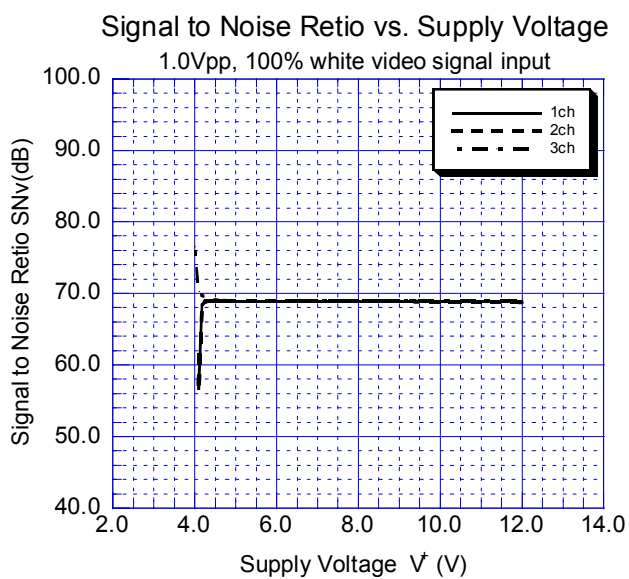
### Differential Gain vs. Supply Voltage



### Differential Phase vs. Supply Voltage





## ■ TYPICAL CHARACTERISTICS



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