

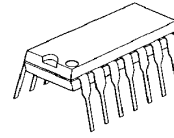
## SINGLE SUPPLY WIDE BAND 3ch VIDEO AMPLIFIER

### ■ GENERAL DESCRIPTION

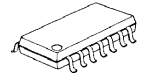
The **NJM2580** is a wide band 3ch video amplifier, operated on a single supply voltage. It is suitable for Y, Pb, and Pr signal because frequency range is 50MHz.

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

### ■ PACKAGE OUTLINE



**NJM2580D**

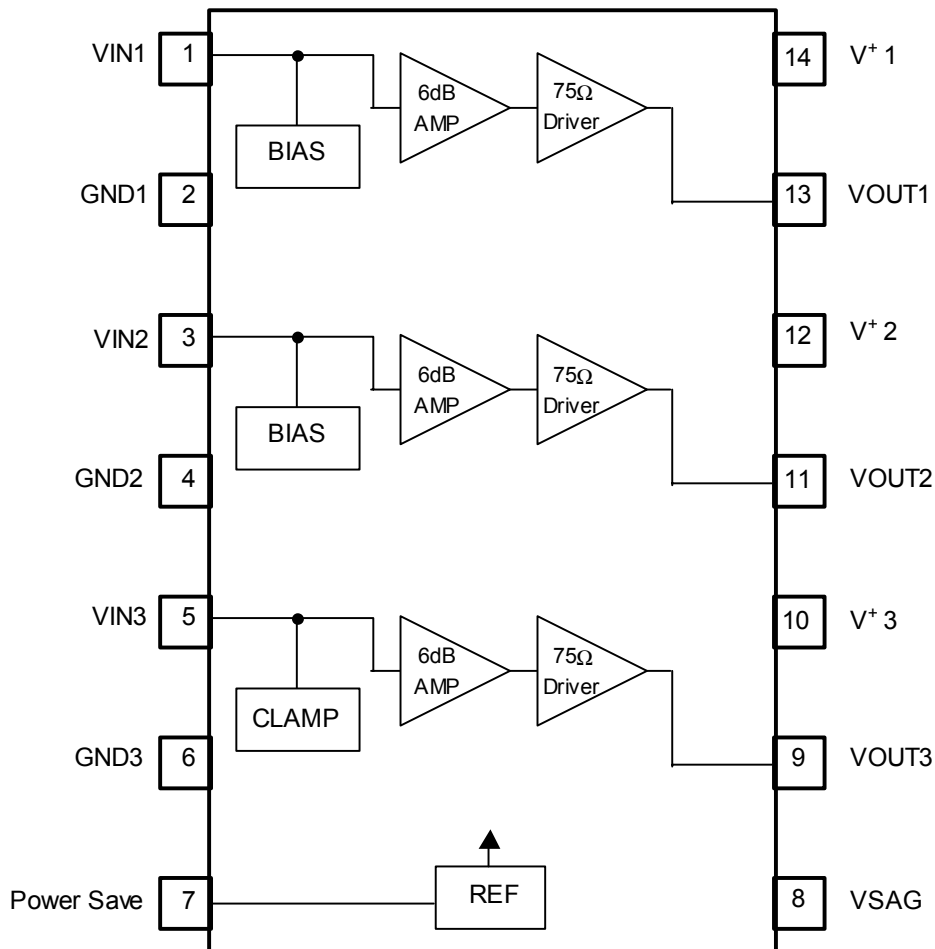


**NJM2580M**

### ■ FEATURES

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

### ■ 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) 500 (DMP) 350	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +125	°C

## ■ 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
	OPEN	Power Save: ON

■ EQUIVALENT CIRCUIT (V+=5V)

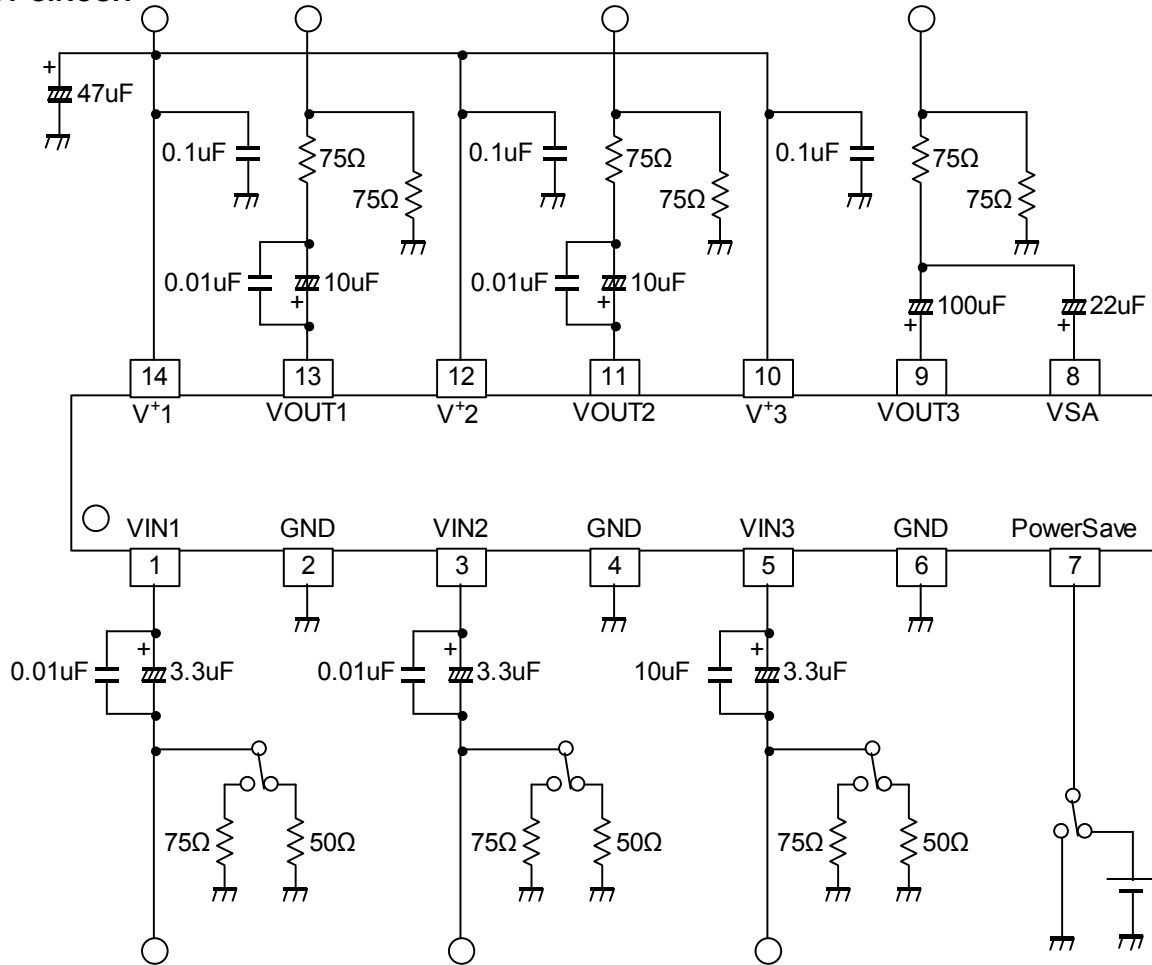
PIN No.	NAME	INSIDE EQUIVALENT CIRCUIT	VOLTAGE
1 3	VIN1 VIN2		2.60V
5	VIN3		1.70V
13 11	VOUT1 VOUT2		2.55V
9	VOUT3		1.35V

# NJM2580

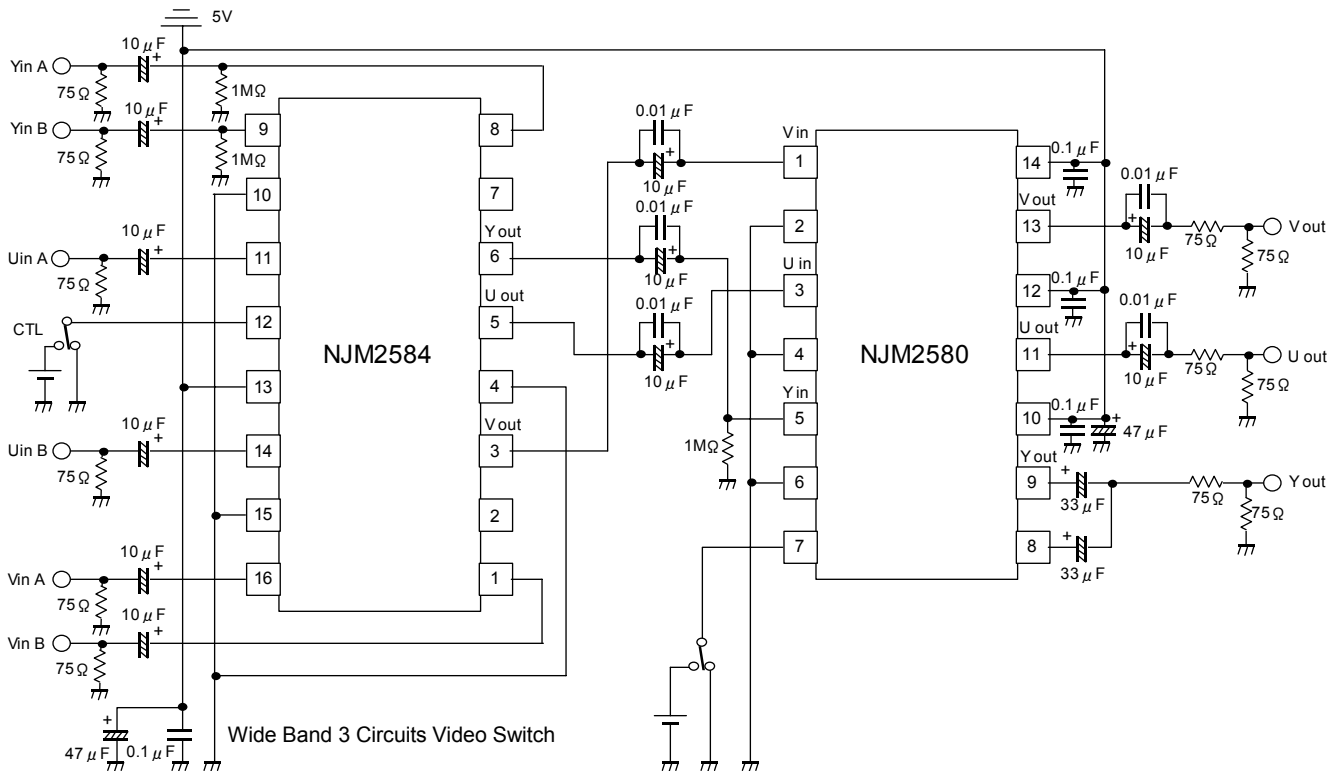
## ■ EQUIVALENT CIRCUIT (V+=5V)

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

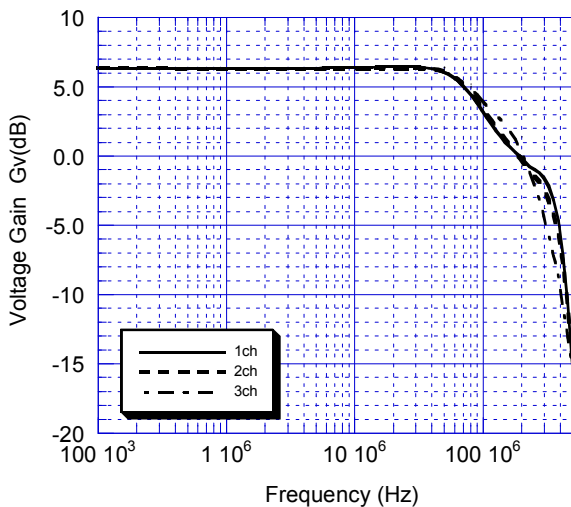


## APPLICATION CIRCUIT

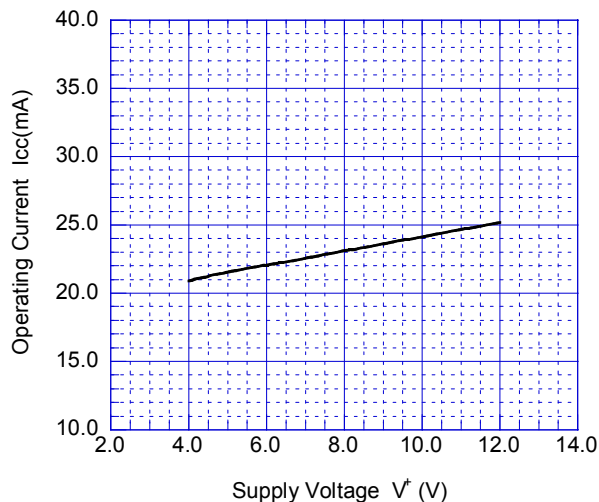


## TYPICAL CHARACTERISTICS

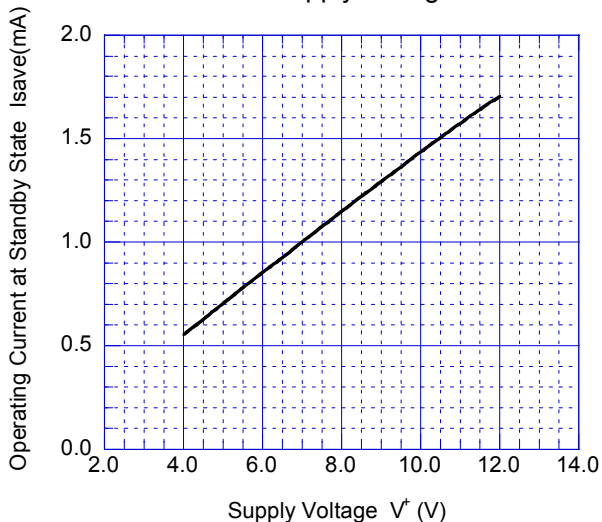
Voltage Gain vs. Frequency



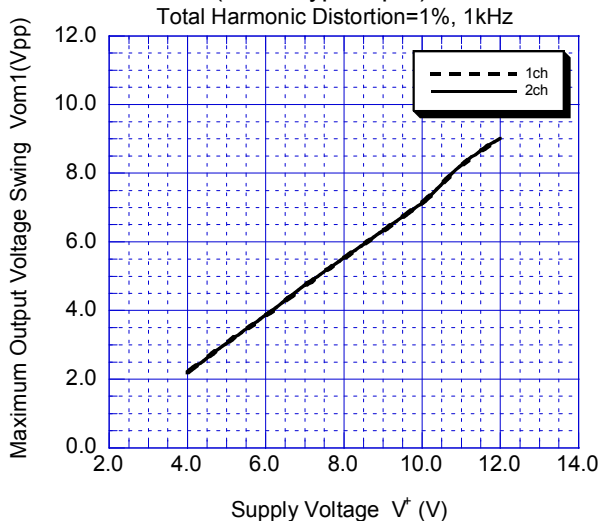
Operating Current vs. Supply Voltage



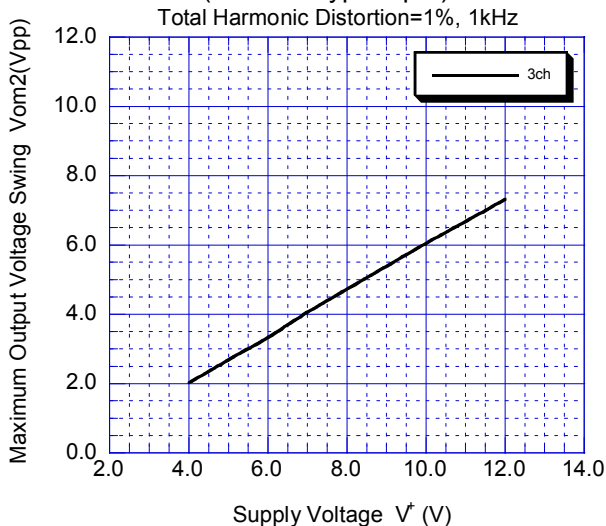
Operating Current at Standby State vs. Supply Voltage



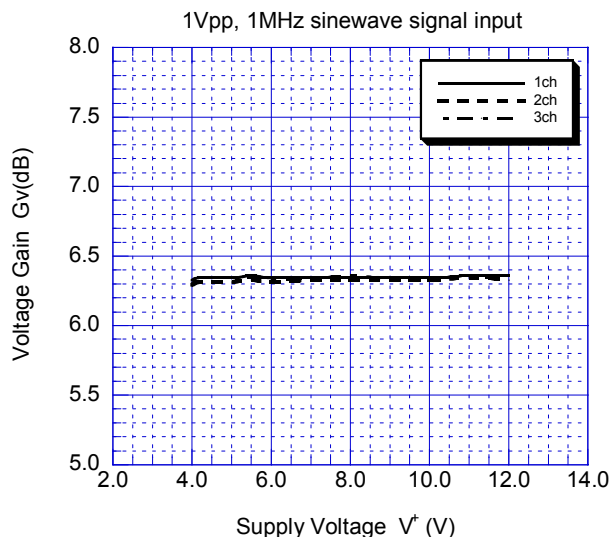
Maximum Output Voltage Swing vs. Supply Voltage (BIAS Type Input)



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

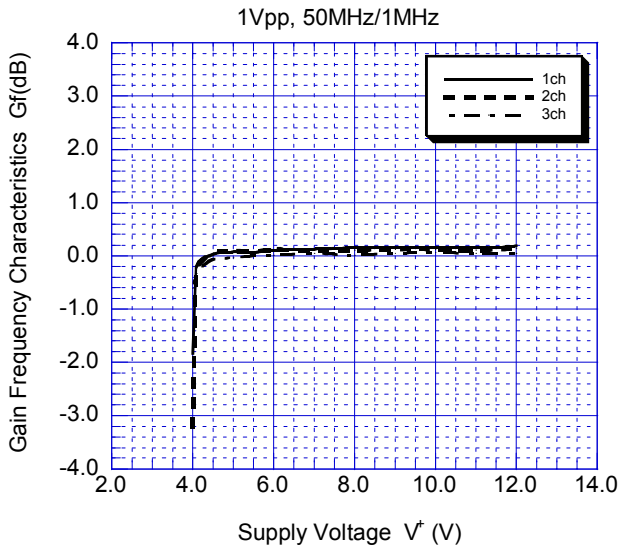


Voltage Gain vs. Supply Voltage

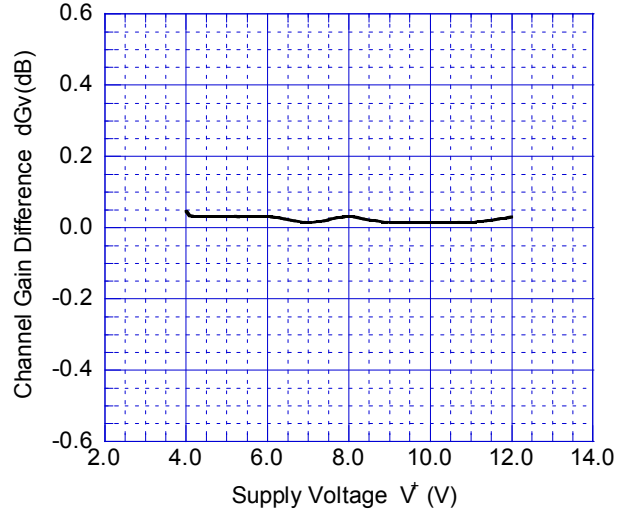


## TYPICAL CHARACTERISTICS

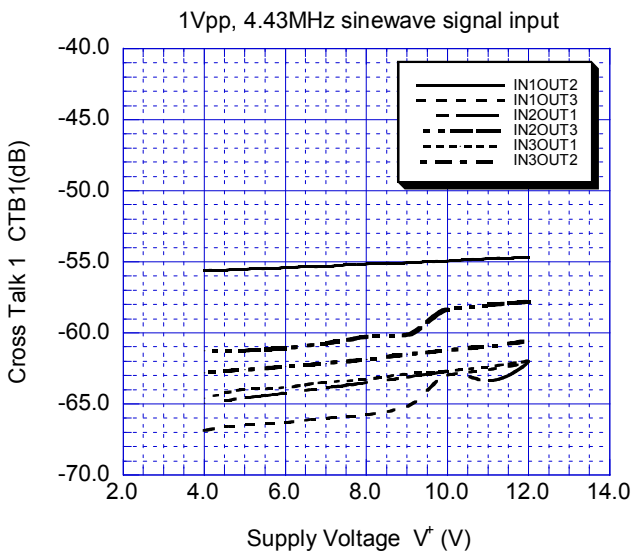
### Gain Frequency Characteristics vs. Supply Voltage



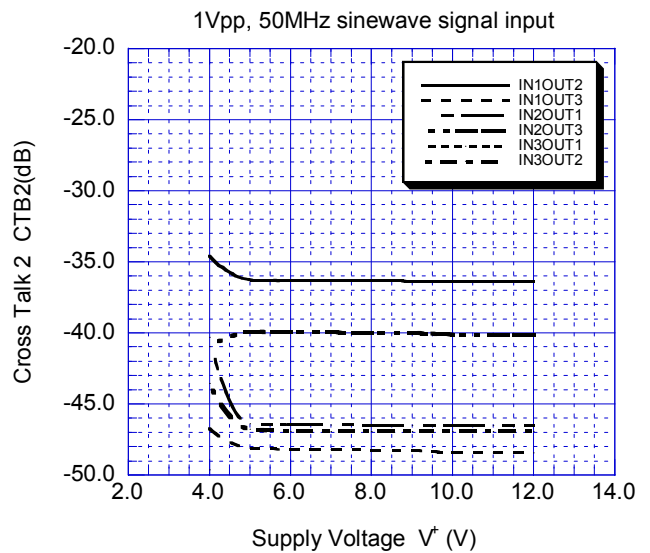
### Channel Gain Difference vs. Supply Voltage



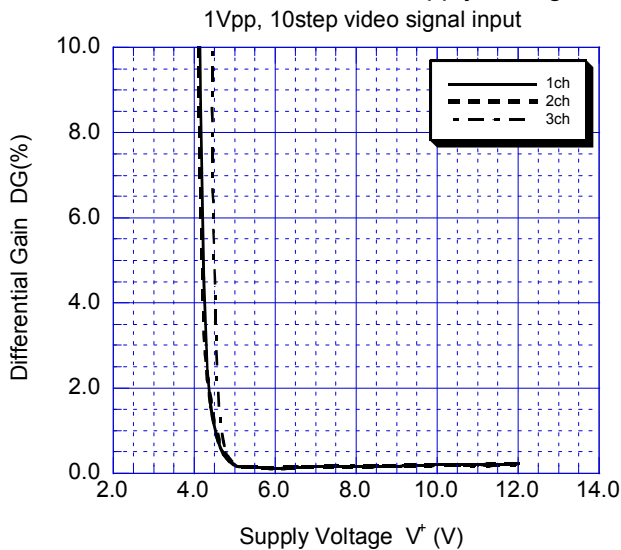
### Cross Talk 1 vs. Supply Voltage



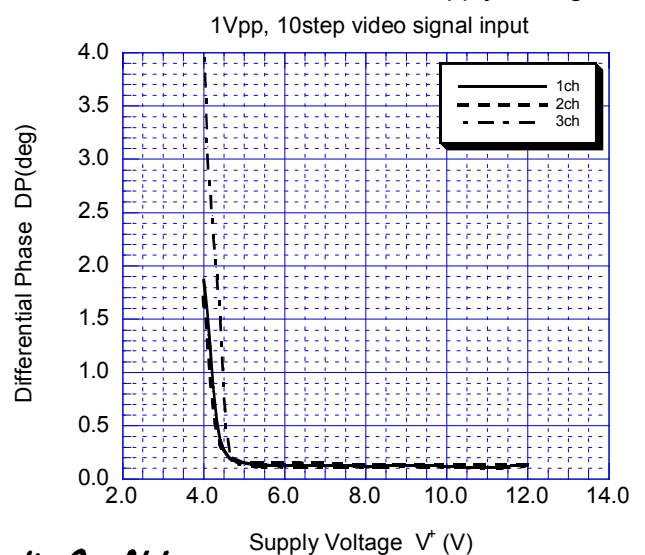
### Cross Talk 2 vs. Supply Voltage



### Differential Gain vs. Supply Voltage

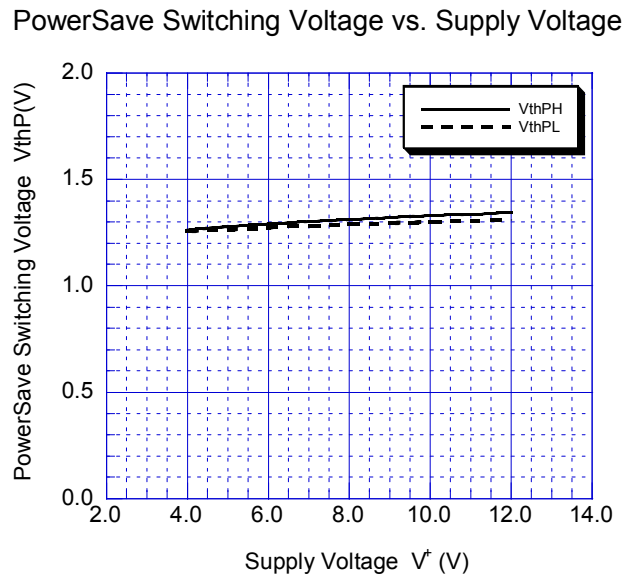
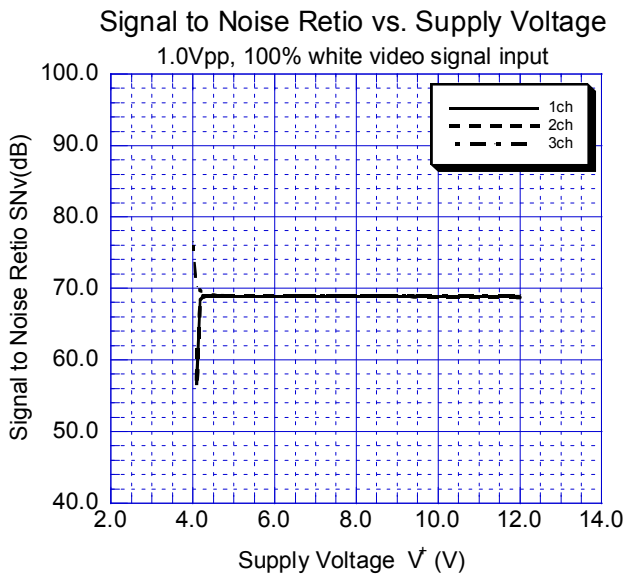


### Differential Phase vs. Supply Voltage



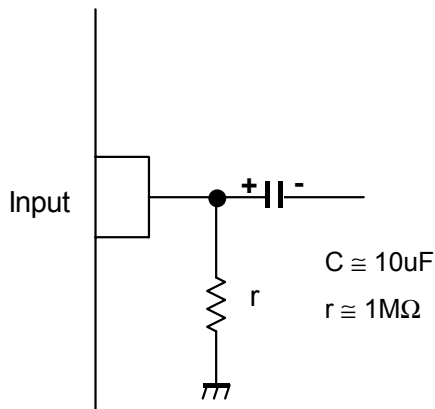
# NJM2580

## ■ TYPICAL CHARACTERISTICS



## ■ APPLICATION

This IC requires  $1M\Omega$  resistance between INPUT and GND pin for clamp type input since the minute current causes an unstable pin voltage.



**[CAUTION]**  
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