

## WIDE BAND 3-INPUT 1-OUTPUT 3-CIRCUIT VIDEO AMPLIFIER

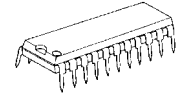
### ■GENERAL DESCRIPTION

The **NJM2586A** is a wide band 3-input 1-output 3-circuit video amplifier. It is suitable for Y, Pb, and Pr signal because frequency range is 50MHz. The **NJM2586A** is suitable for AV receiver, STB, and other high quality AV systems.

### ■PACKAGE OUTLINE



**NJM2586AM**

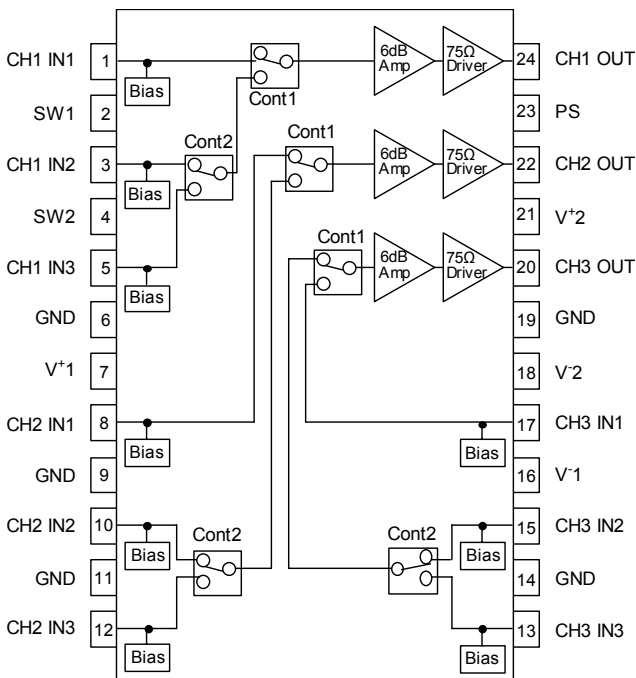


**NJM2586AL**

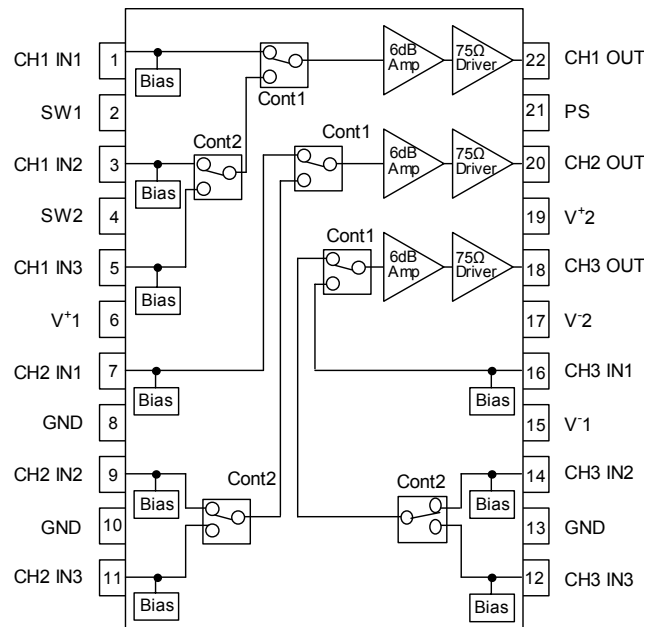
### ■ FEATURES

- Operating Voltage ±4.5 to ±5.5V
- Wide frequency range 0dB at 50MHz typ.
- Internal 3 input-1output 3-circuit video switch
- Internal 6dB Amplifier
- Internal 75Ω Driver Circuit
- Power Save Circuit
- Bipolar Technology
- Package Outline DMP24, SDIP22

### ■BLOCK DIAGRAM



**DMP24**



**SDIP22**

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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup>	12.0	V
Power Dissipation	P <sub>D</sub>	500 (DMP24) 700 (SDIP22)	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +125	°C

**■ELECTRICAL CHARACTERISTICS (Ta=25°C, V<sup>+</sup>1=5V, V<sup>+</sup>2=5V, V<sup>-</sup>1=-5V, V<sup>-</sup>2=-5V, R<sub>L</sub>=150Ω)**

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I <sub>CC</sub>	V <sup>+</sup> 1, V <sup>+</sup> 2, No Signal	-	23.0	35.0	mA
Operating Current at Power Save	I <sub>save</sub>	V <sup>+</sup> 1, V <sup>+</sup> 2, No Signal, Power Save Mode	-	0.7	1.2	mA
Maximum Output Voltage Swing	V <sub>om</sub>	V <sub>in</sub> =100kHz, Sine Signal, THD=1%	2.4	8.0	-	Vp-p
Voltage Gain	G <sub>v</sub>	V <sub>in</sub> =1MHz, 1.0Vp-p, Sine Signal	5.8	6.2	6.6	dB
Gain Difference Between channel	ΔG <sub>vI</sub>	(IN1, IN2, IN3) V <sub>in</sub> =1MHz, 1.0Vp-p, Sine Signal	-0.2	0	+0.2	dB
Gain Difference Between Block	ΔG <sub>vB</sub>	(CH1, CH2, CH3) V <sub>in</sub> =1MHz, 1.0Vp-p, Sine Signal	-0.2	0	+0.2	dB
Band Width	f		-	50	-	MHz
Frequency Characteristic	G <sub>f</sub>	V <sub>in</sub> =50MHz/1MHz, 1.0Vp-p, Sine signal	-	0	-	dB
Channel Cross talk 1	CT-I1	V <sub>in</sub> =4.43MHz, 1.0Vp-p, Sine signal (IN1, IN2, IN3)	-	-60	-50	dB
Channel Cross talk 2	CT-I2	V <sub>in</sub> =50MHz, 1.0Vp-p, Sine signal (IN1, IN2, IN3)	-	-40	-	dB
Block Cross talk 1	CT-B1	V <sub>in</sub> =4.43MHz, 1.0Vp-p, Sine signal (CH1, CH2, CH3)	-	-60	-50	dB
Block Cross talk 2	CT-B2	V <sub>in</sub> =50MHz, 1.0Vp-p, Sine signal (CH1, CH2, CH3)	-	-40	-	dB
Differential Gain	DG	V <sub>in</sub> =1.0Vp-p, 10step Video Signal	-	0.3	-	%
Differential Phase	DP	V <sub>in</sub> =1.0Vp-p, 10step Video Signal	-	0.3	-	deg
S/N Ratio	SN	V <sub>in</sub> =1.0Vp-p, 100KHz to 6MHz 100% White Video Signal,	-	+65	-	dB
Output Voltage	V <sub>o</sub>	No Signal	-100	0	100	mV
Output Offset Voltage	V <sub>os</sub>	No Signal (Note1)	-60	0	60	mV
Power Save SW Change Voltage High Level	V <sub>thPH</sub>	PS	2.0	-	V <sup>+</sup>	V
Power Save SW Change Voltage Low Level	V <sub>thPL</sub>	PS	0	-	0.6	V
Input Select SW Change Voltage High Level	V <sub>thSH</sub>	SW1, SW2	2.0	-	V <sup>+</sup>	V
Input Select SW Change Voltage Low Level	V <sub>thSL</sub>	SW1, SW2	0	-	0.6	V

(Note1)

Measure the output DC voltage difference when changing IN1-IN2, IN1-IN3, and IN2-IN3 at CH1, CH2 and CH3.

## ■CONTROL TERMINAL

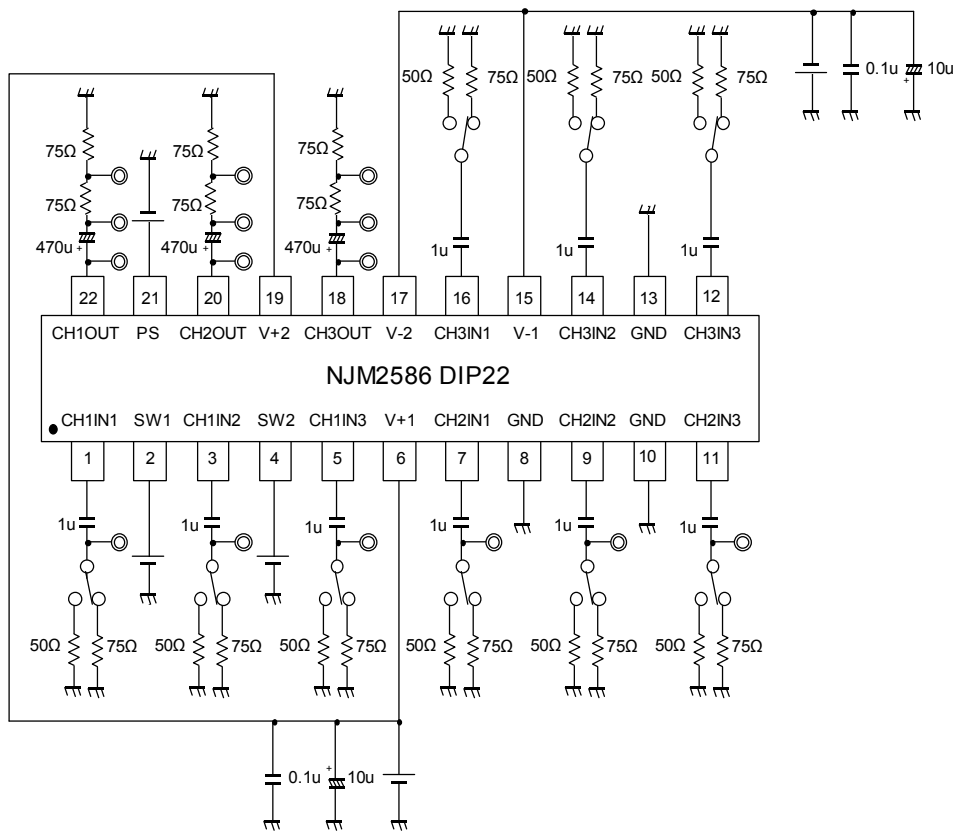
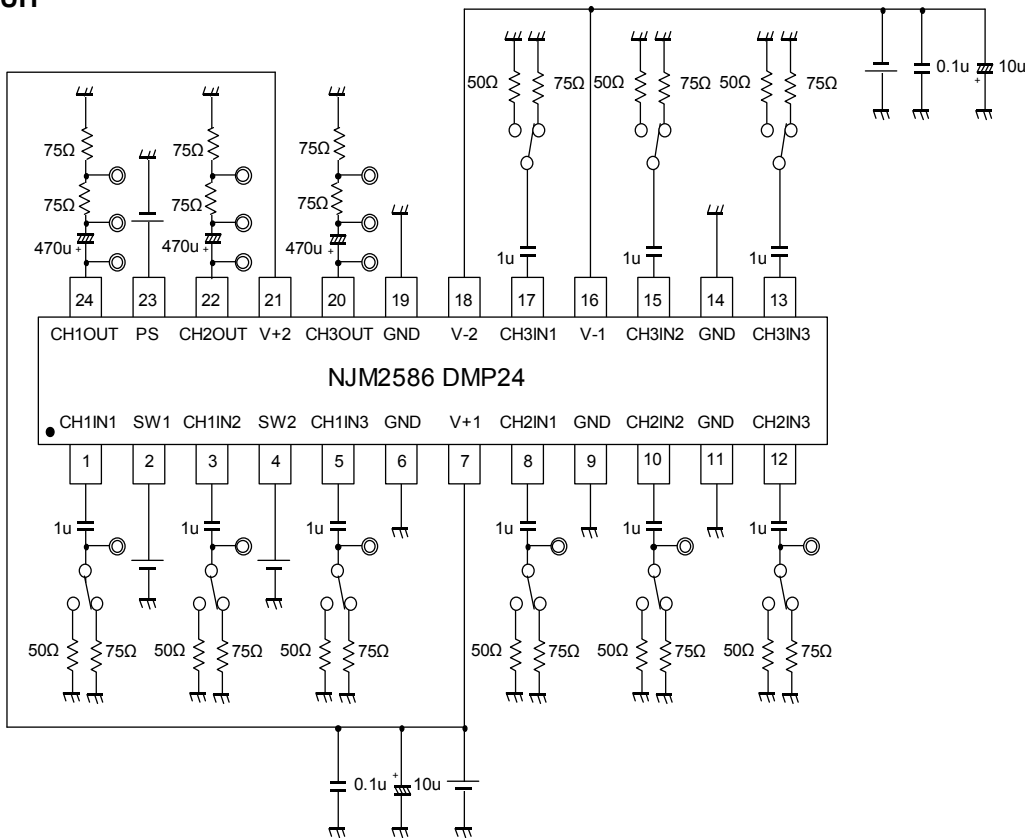
PARAMETER	STATUS	NOTE
PS	H	Power Save: OFF
	L	Power Save: ON
	OPEN	Power Save: ON

PARAMETER	STATUS		NOTE
	SW1	SW2	
SW1, SW2I	L, OPEN	X	IN1 (X=don't care)
	H	L, OPEN	IN2
	H	H	IN3

## ■ TERMINAL DESCRIPTION

No.	SYMBOL	VOLTAGE	EQUIVALENT CIRCUIT
1 3 5 8 10 12 13 15 17	CH1 IN1 CH1 IN2 CH1 IN3 CH2 IN1 CH2 IN2 CH2 IN3 CH3 IN1 CH3 IN2 CH3 IN3	0V	
20 22 24	CH1 OUT CH2 OUT CH3 OUT	0V	
2 4	SW1 SW2	0V	
23	Power Save	0V	

## TEST CIRCUIT

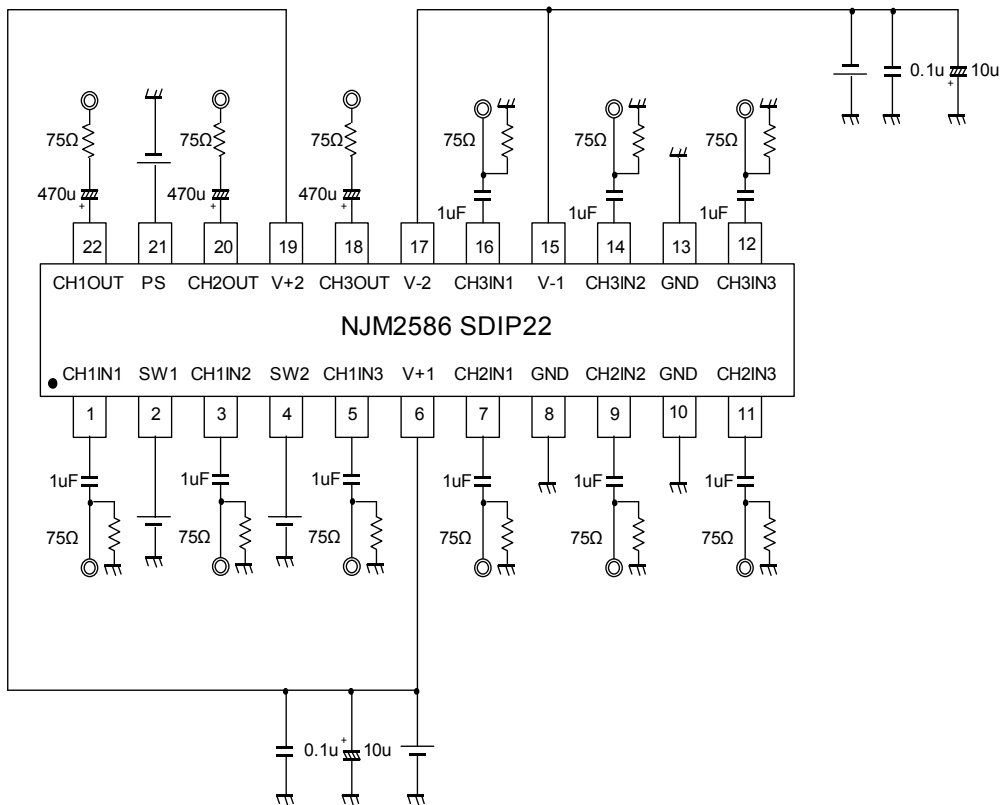
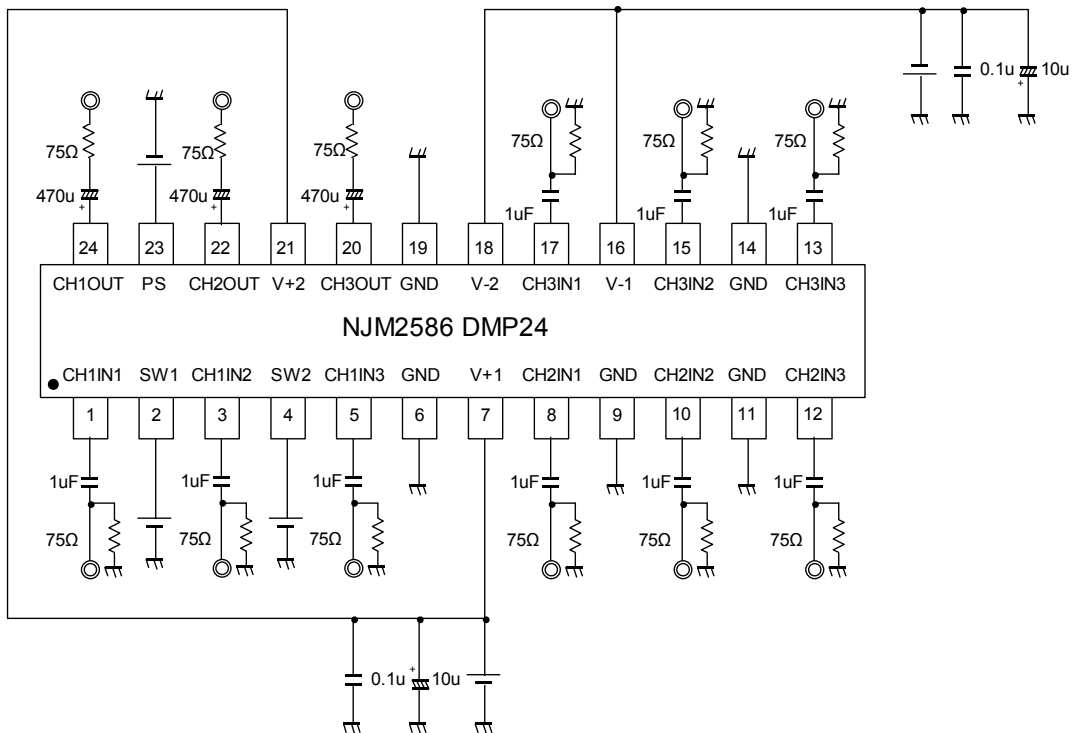


### NOTE

Please ground all GND terminals.

## APPLICATION CIRCUIT

(Note) When there is no problem in offset voltage, it is possible to remove the capacitor of 470uF of an output.  
 The values of an output capacitor are a reference value. Please determine a value after sufficient evaluation.

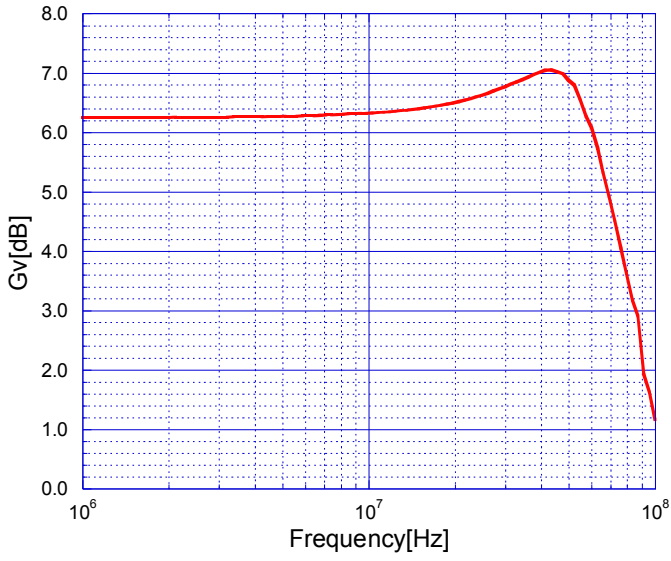


## NOTE

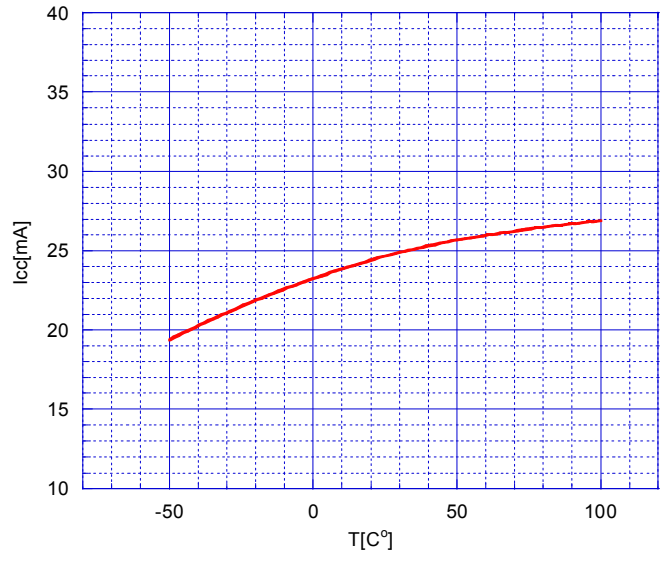
Please ground all GND terminals.

■ TYPICAL CHARACTERISTICS

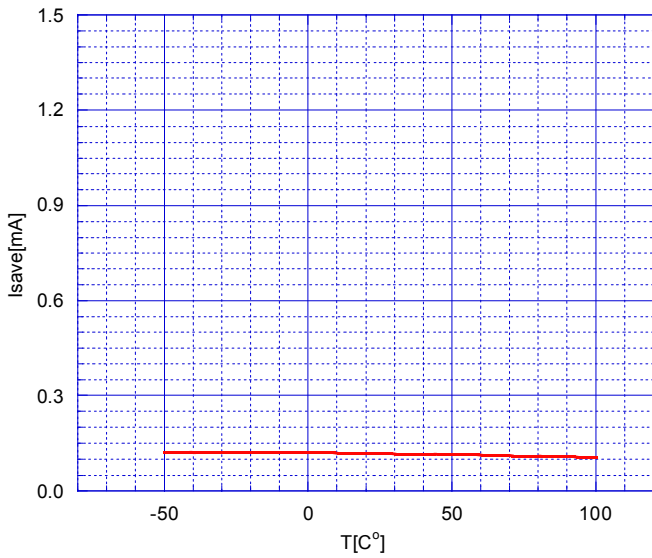
Voltage Gain vs. Frequency



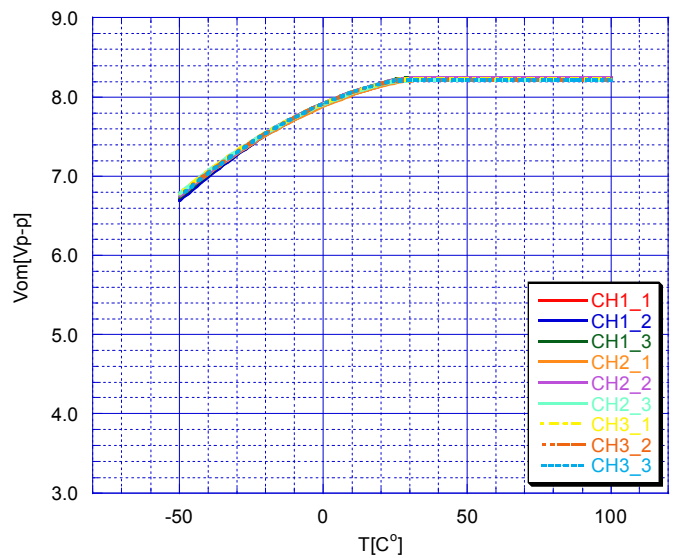
T vs Icc



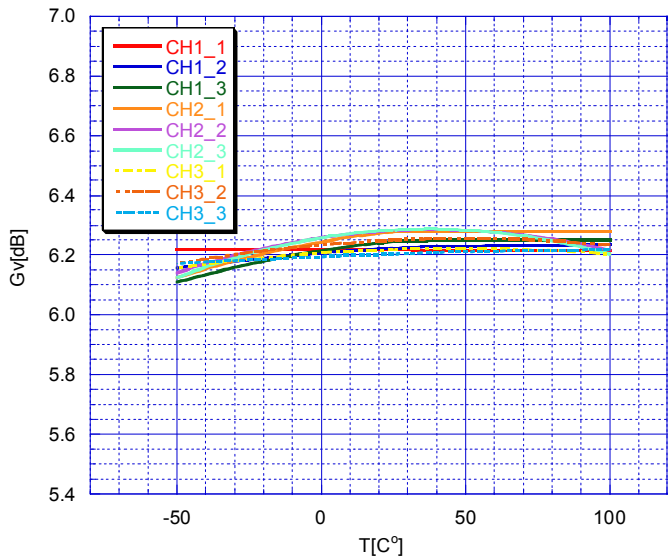
T vs Isave



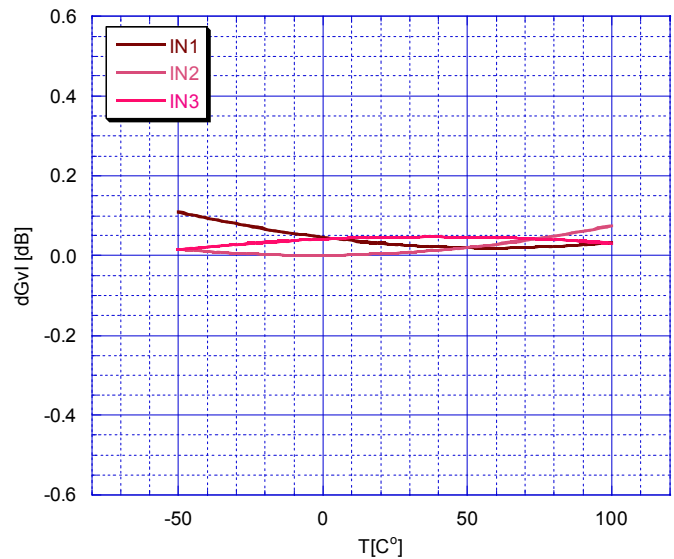
T vs Vom



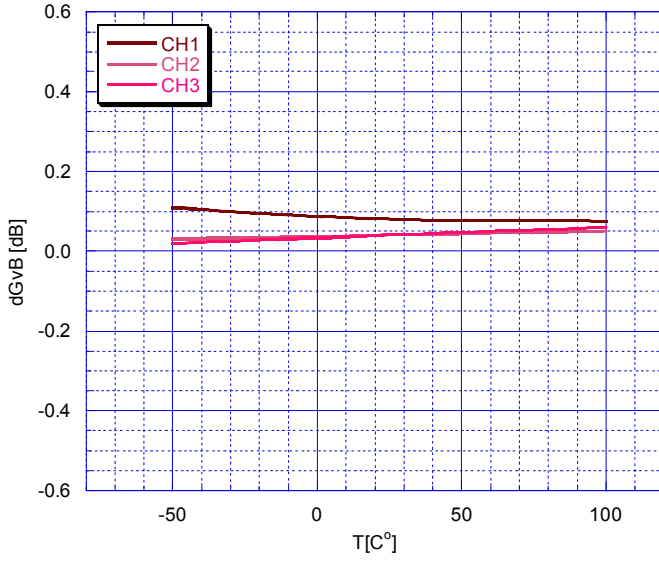
T vs Gv



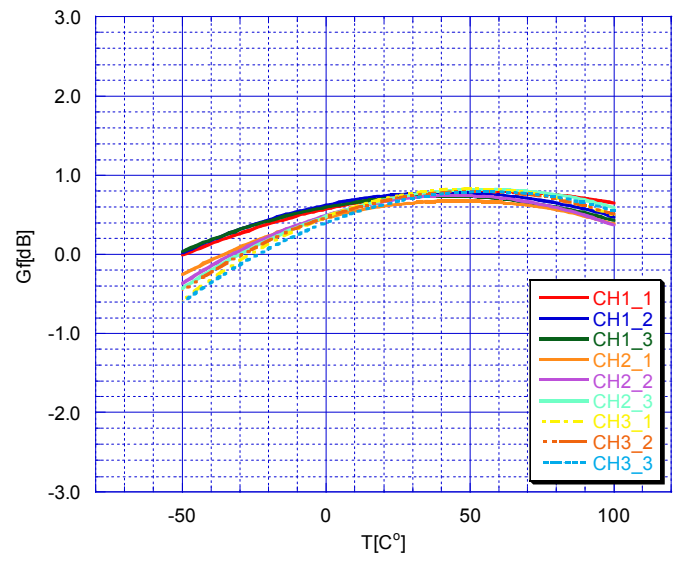
T vs dGvI



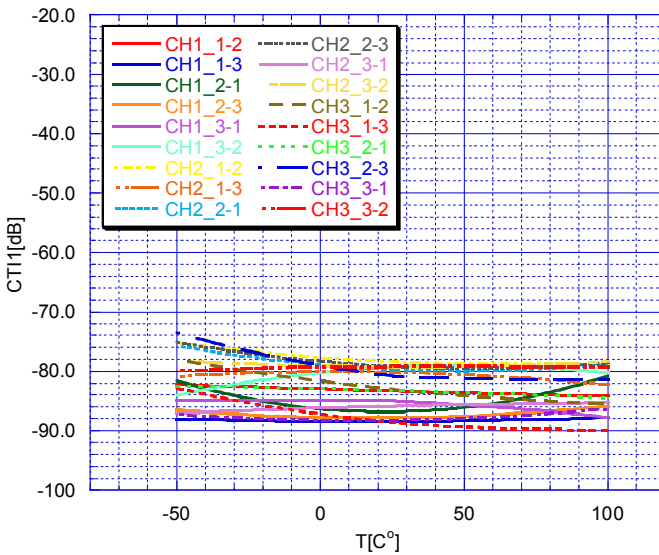
### T vs dGvB



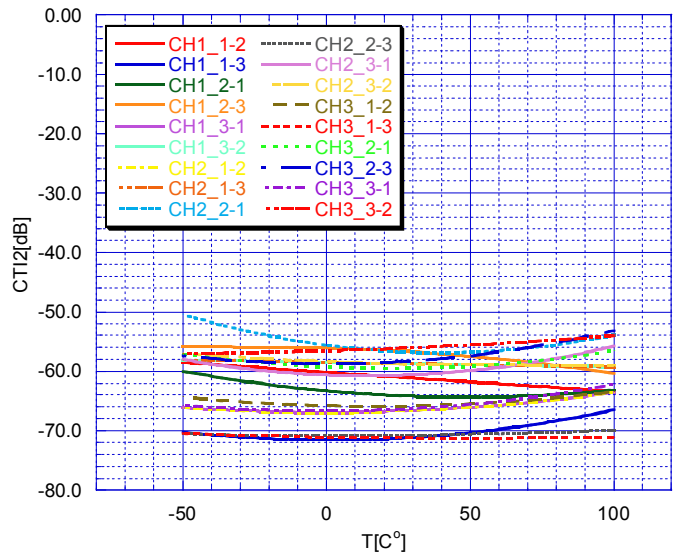
### T vs Gf



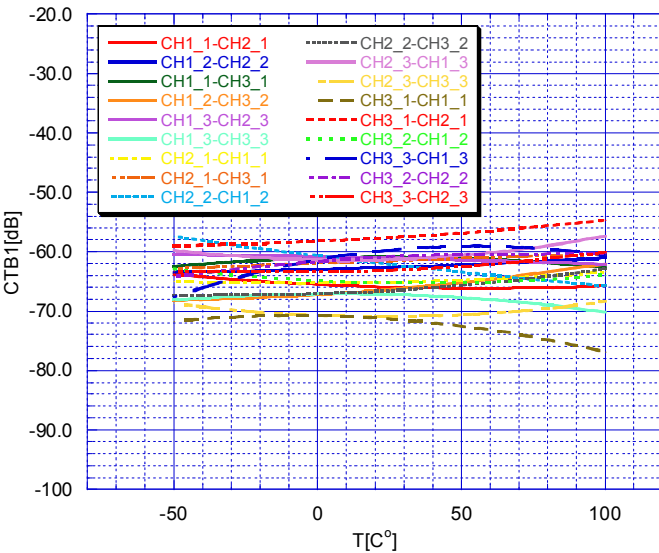
### T vs CTI1



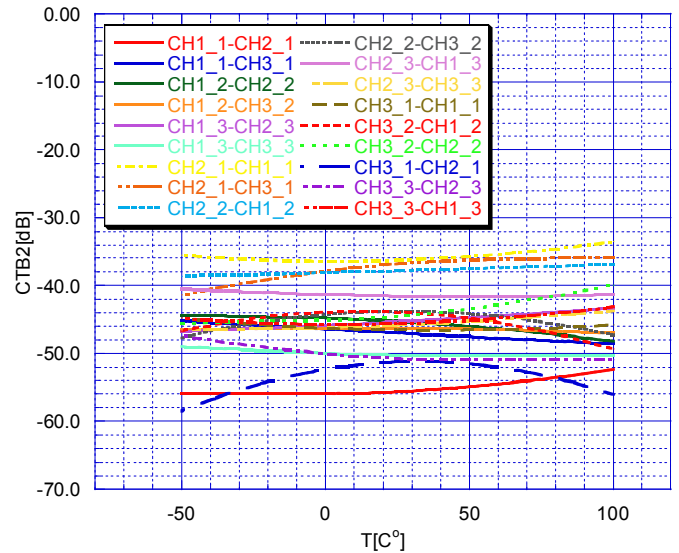
### T vs CTI2



### T vs CTB1



### T vs CTB2





**[CAUTION]**

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