

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

### ■GENERAL DESCRIPTION

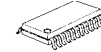
The **NJM2585** is a wide band 3-input 1-output 3-circuit video amplifier. It is suitable for Y, Pb, and Pr signal because frequency range is 50MHz.

The **NJM2585** is suitable for AV receiver, STB, and other high quality AV systems.

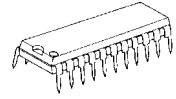
### ■ FEATURES

- Operating Voltage 4.5 to 9.0V
- 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

### ■PACKAGE OUTLINE

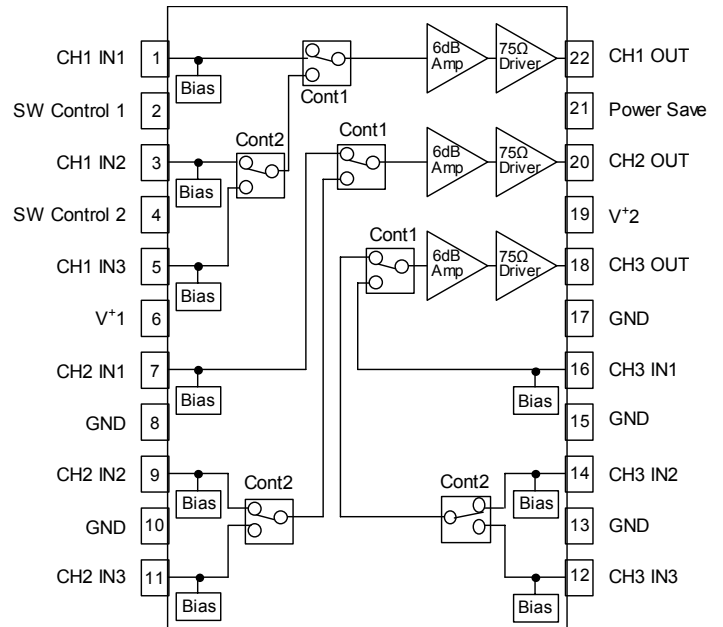
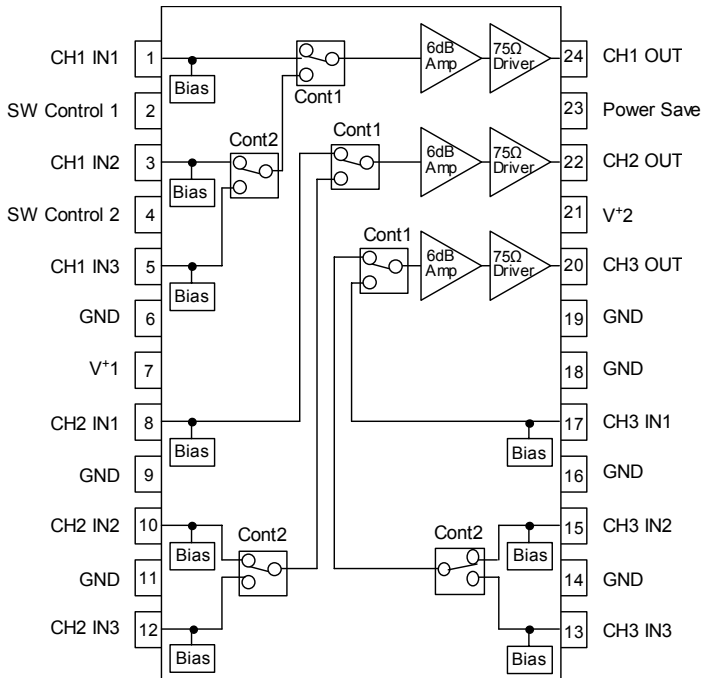


**NJM2585M**



**NJM2585L**

### ■BLOCK DIAGRAM



**■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, R<sub>L</sub>=150Ω)**

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I <sub>CC</sub>	No Signal	-	23.0	35.0	mA
Operating Current at Power Save	I <sub>save</sub>	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	3.0	-	V <sub>p-p</sub>
Voltage Gain	G <sub>v</sub>	V <sub>in</sub> =1MHz, 1.0V <sub>p-p</sub> , Sine Signal	5.8	6.2	6.6	dB
Gain Difference Between Channel	ΔG <sub>vI</sub>	V <sub>in</sub> =1MHz, 1.0V <sub>p-p</sub> , Sine Signal (IN1, IN2, IN3)	-0.2	0	+0.2	dB
Gain Difference Between Block	ΔG <sub>vB</sub>	V <sub>in</sub> =1MHz, 1.0V <sub>p-p</sub> , Sine Signal (CH1, CH2, CH3)	-0.2	0	+0.2	dB
Band Width	f		-	50	-	MHz
Frequency Characteristic	G <sub>f</sub>	V <sub>in</sub> =50MHz/1MHz, 1.0V <sub>p-p</sub> , Sine signal	-	0	-	dB
Channel Cross talk 1	CTI1	V <sub>in</sub> =4.43MHz, 1.0V <sub>p-p</sub> , Sine signal	-	-60	-50	dB
Channel Cross talk 2	CTI2	V <sub>in</sub> =50MHz, 1.0V <sub>p-p</sub> , Sine signal	-	-40	-	dB
Block Cross talk 1	CTB1	V <sub>in</sub> =4.43MHz, 1.0V <sub>p-p</sub> , Sine signal	-	-60	-50	dB
Block Cross talk 2	CTB2	V <sub>in</sub> =50MHz, 1.0V <sub>p-p</sub> , Sine signal	-	-40	-	dB
Differential Gain	DG	V <sub>in</sub> =1.0V <sub>p-p</sub> , 10step Video Signal	-	0.3	-	%
Differential Phase	DP	V <sub>in</sub> =1.0V <sub>p-p</sub> , 10step Video Signal	-	0.3	-	deg
S/N Ratio	SN <sub>v</sub>	V <sub>in</sub> =1.0V <sub>p-p</sub> , 100kHz to 6MHz 100% White Video Signal	-	65	-	dB
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

## ■CONTROL TERMINAL

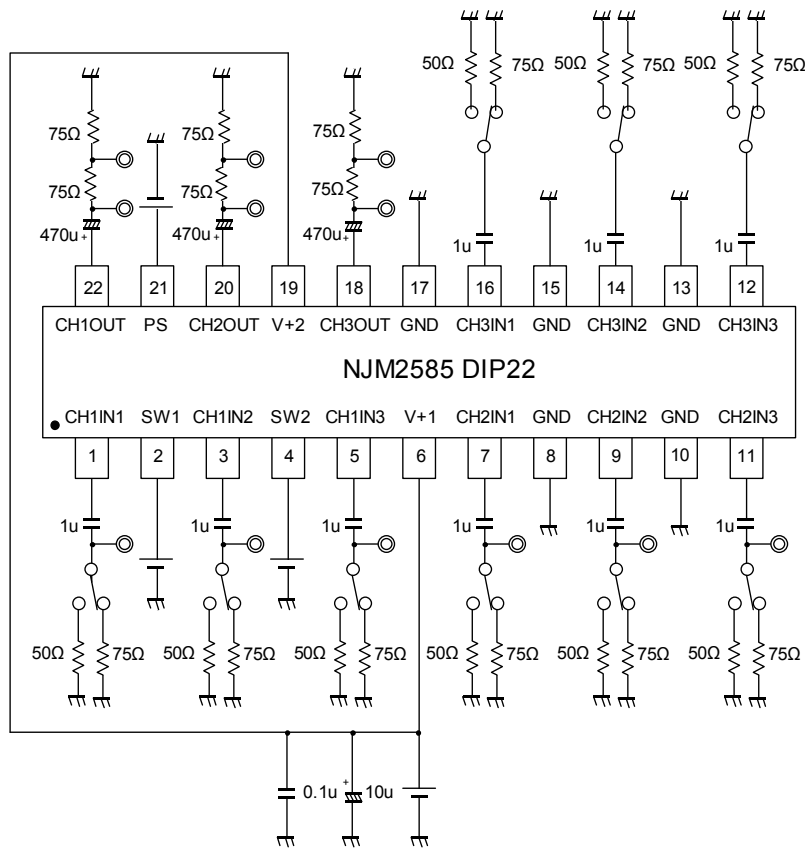
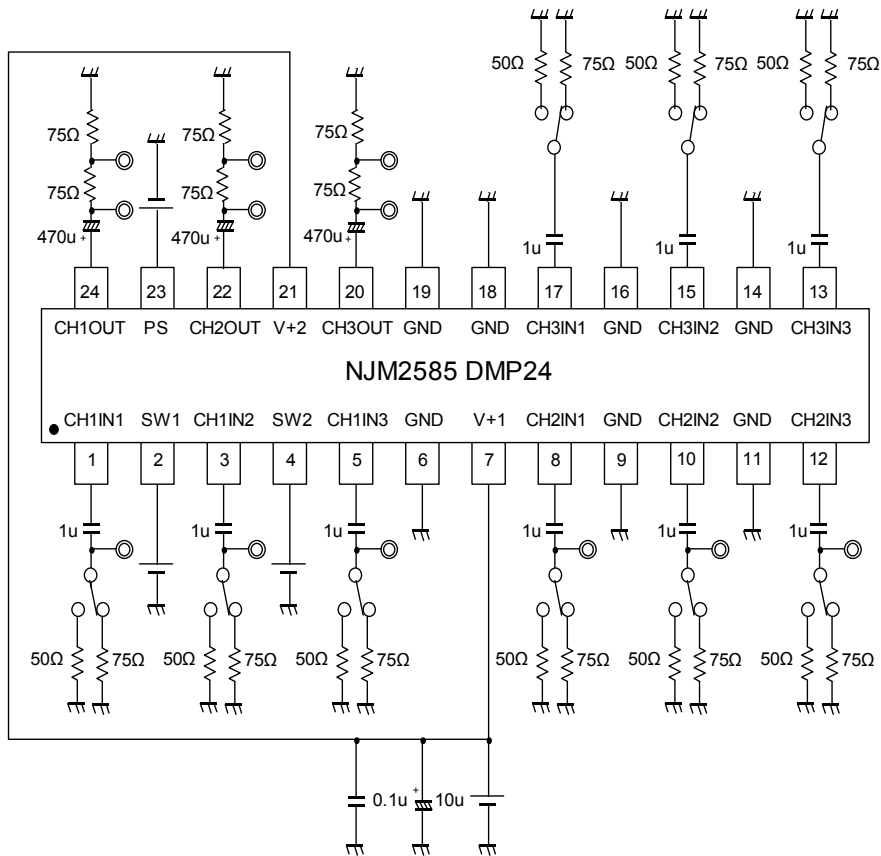
PARAMETER	STATUS	NOTE
Power Save	H	Power Save: OFF
	L	Power Save: ON
	OPEN	Power Save: ON

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

■ TERMINAL FUNCTION

PIN NO.	PIN NAME	EQUIVALENT CIRCUIT	DC VOLTAGE (V+=5V)	NOTE
1 3 5 8 10 12 13 15 17	CH1IN1 CH1IN2 CH1IN3 CH2IN1 CH2IN2 CH2IN3 CH3IN1 CH3IN2 CH3IN3		2.5V	
20 22 24	CH3OUT CH2OUT CH1OUT		2.5V	
2 4	SW1 SW2		0V	
23	PowerSave		0V	

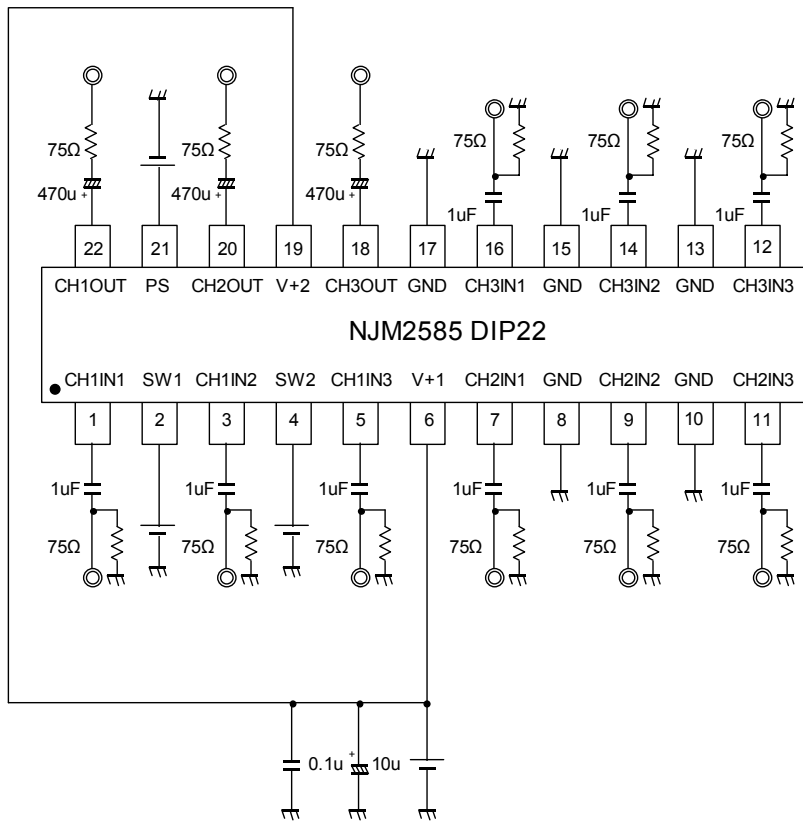
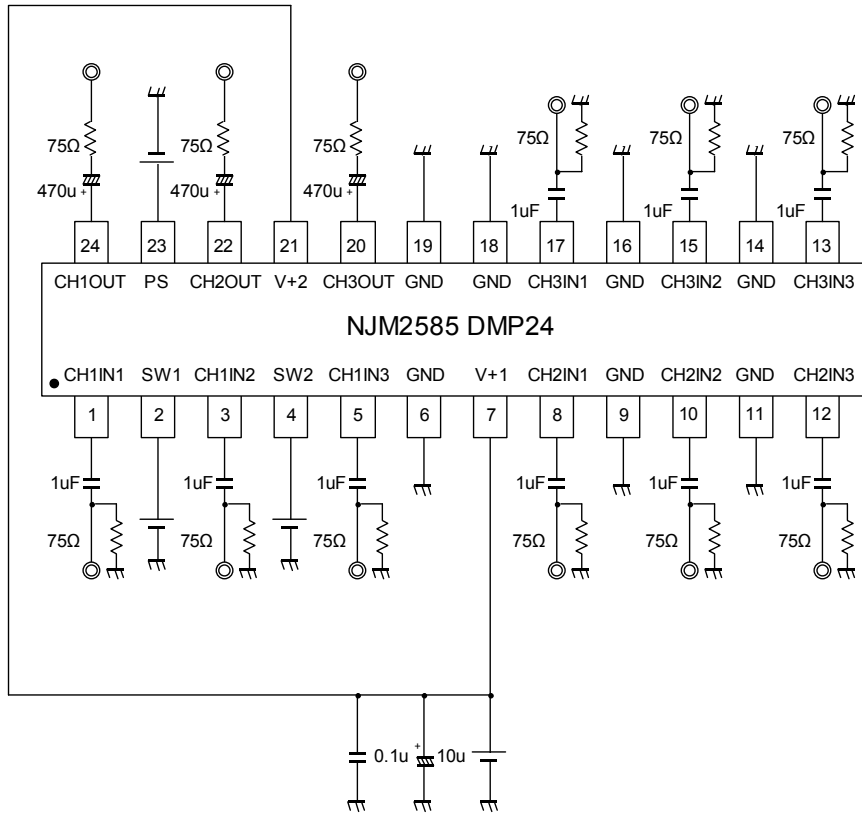
## TEST CIRCUIT



### NOTE

Please ground all GND terminals.

■APPLICATION CIRCUIT

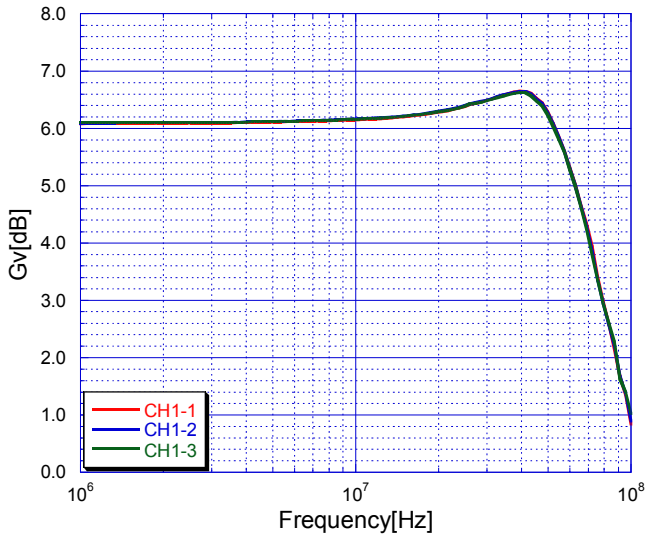


■NOTE

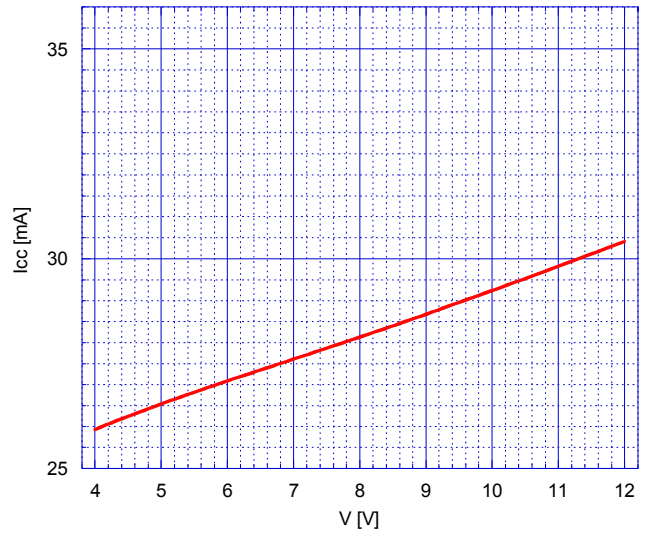
Please ground all GND terminals.

■ TYPICAL CHARACTERISTICS

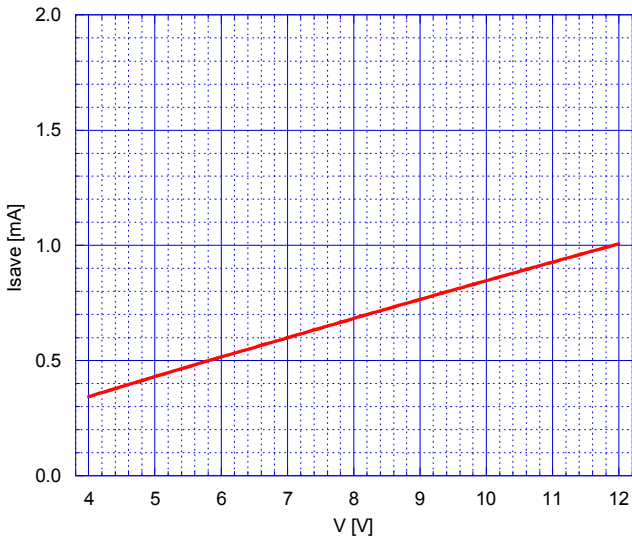
Voltage Gain vs Frequency



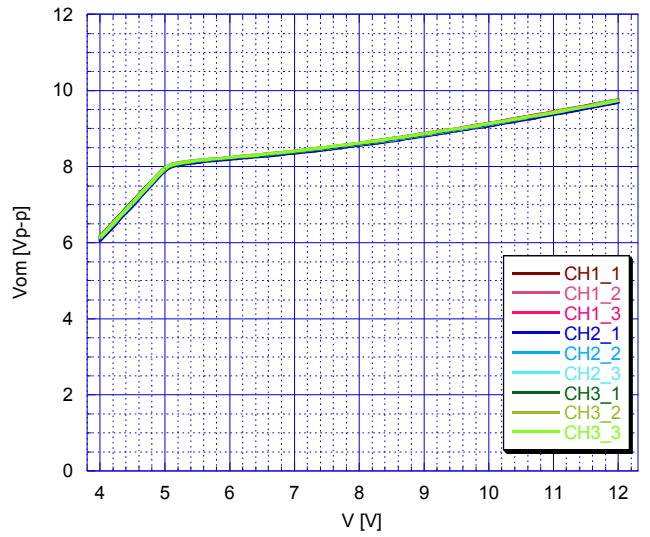
V vs Icc



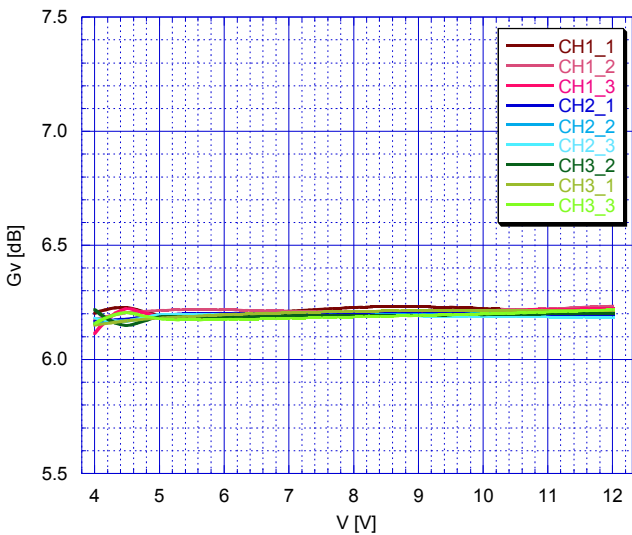
V vs Isave



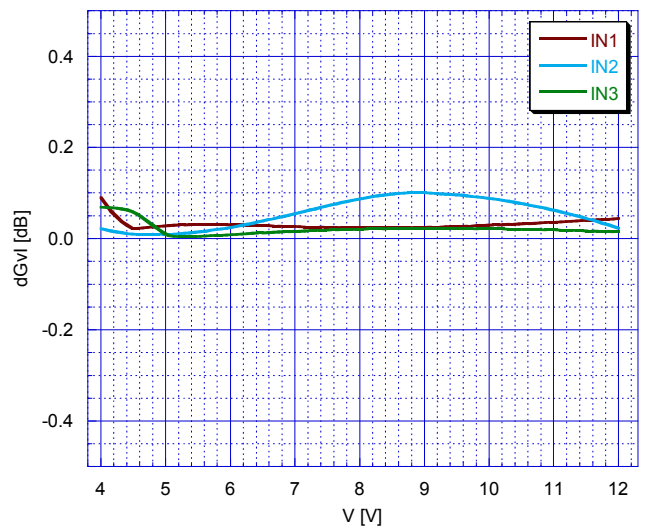
V vs Vom



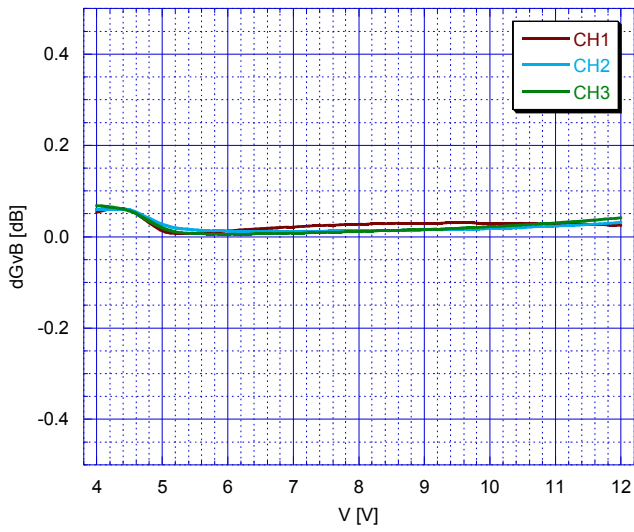
V vs Gv



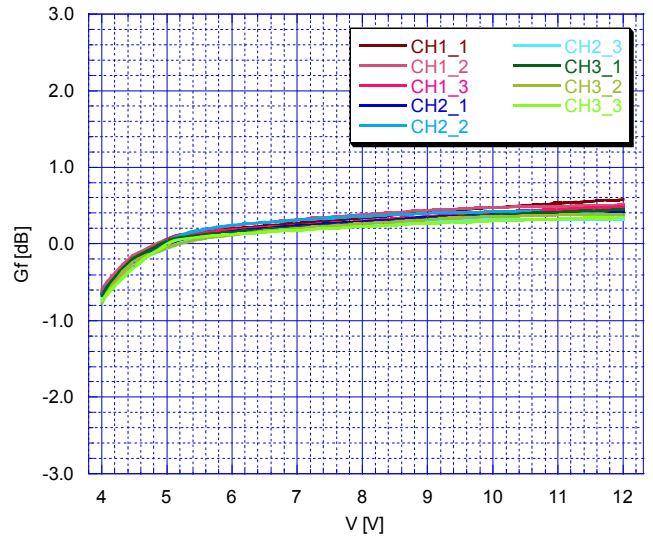
V vs dGvI



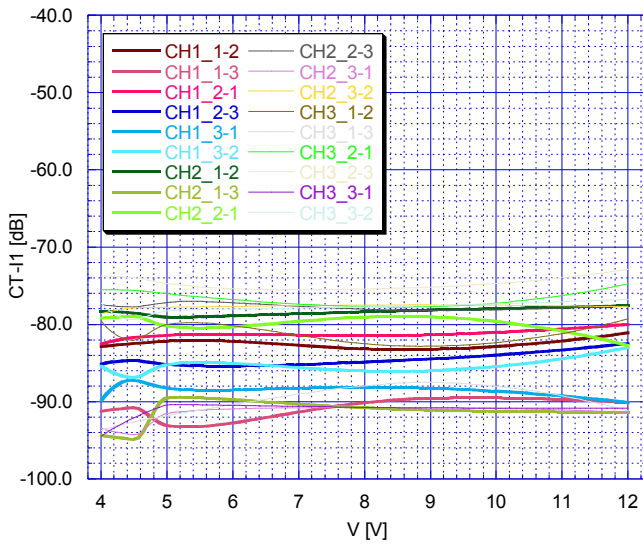
### V vs dGvB



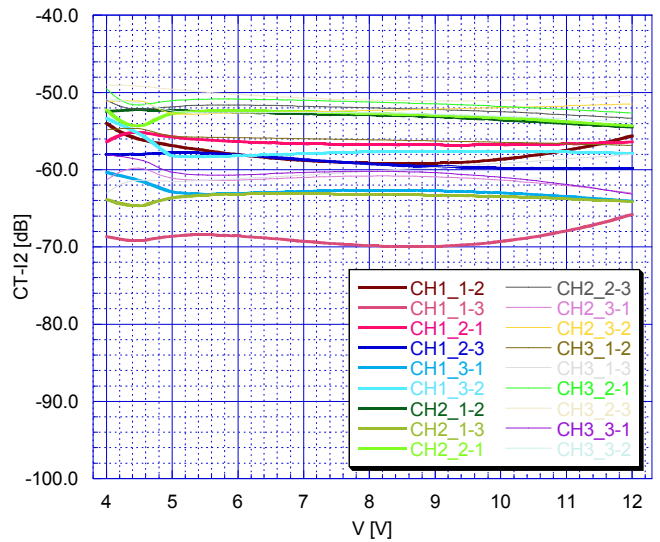
### V vs Gf



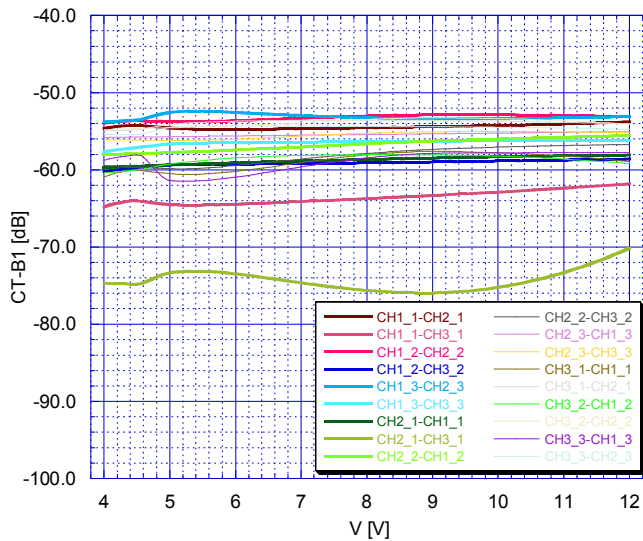
### V vs CT- I1



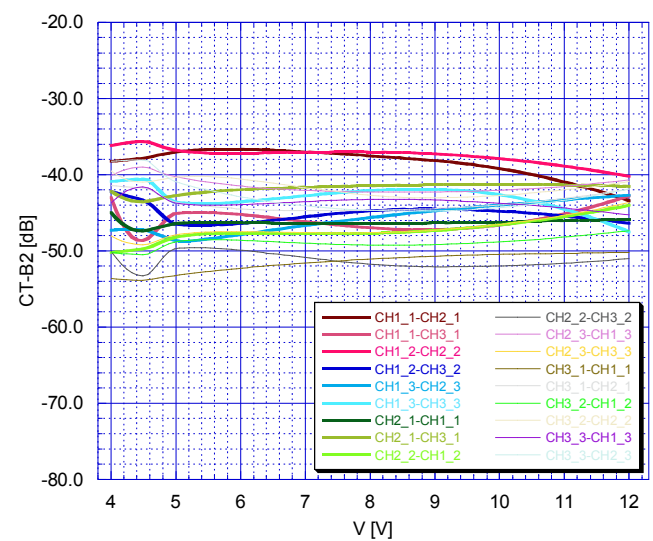
### V vs CT- I2



### V vs CT- B1

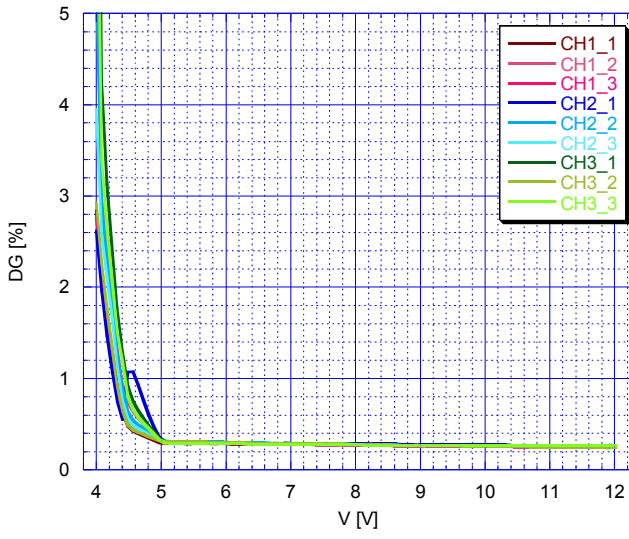


### V vs CT- B2

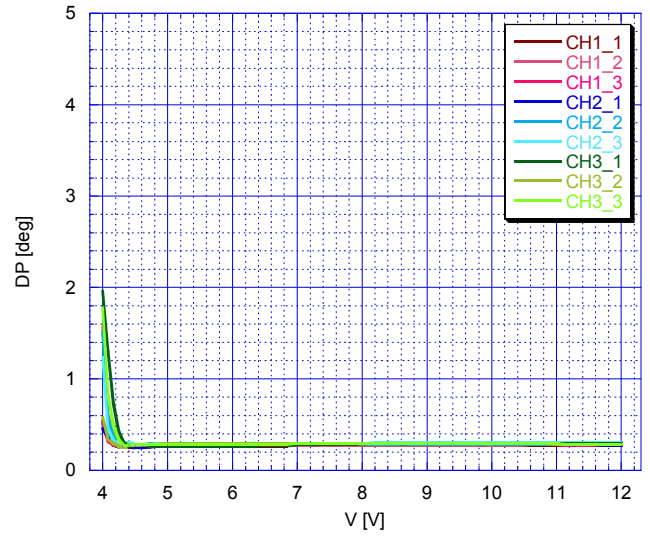




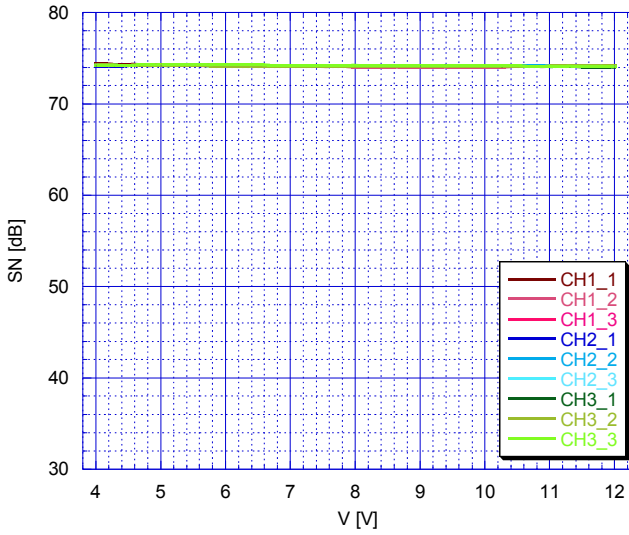
### V vs DG



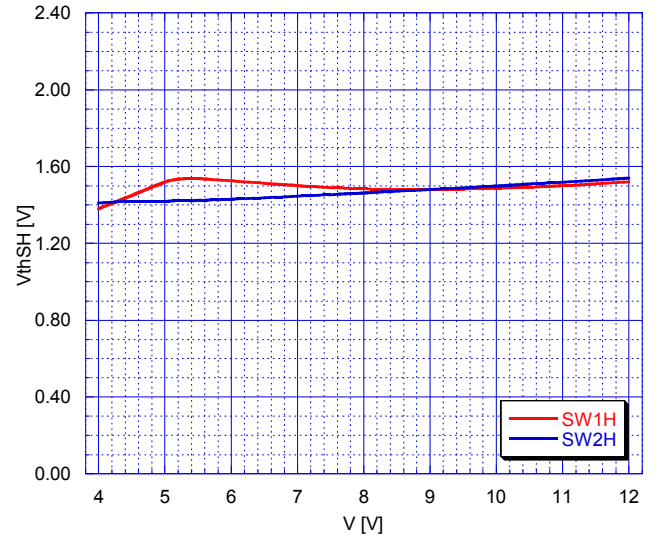
### V vs DP



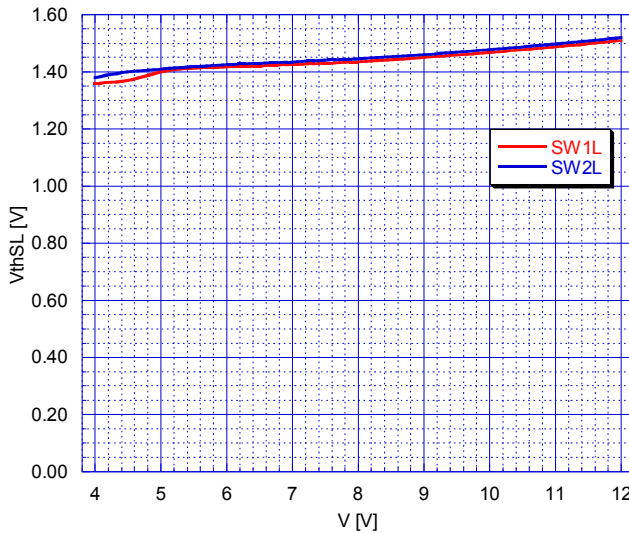
### V vs SN



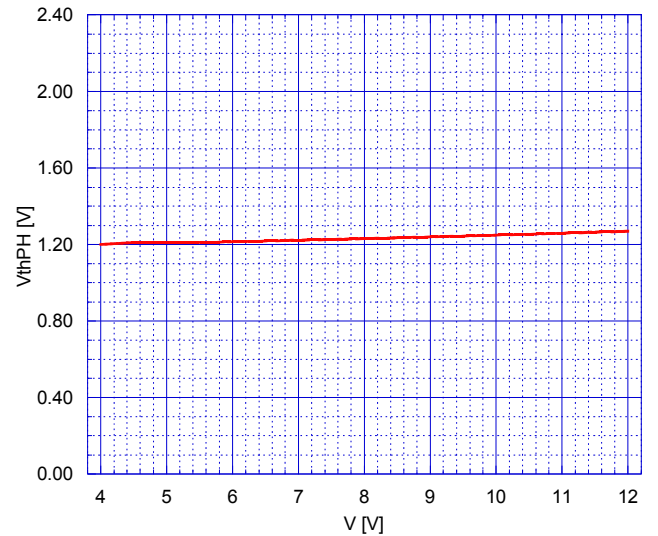
### V vs VthSH



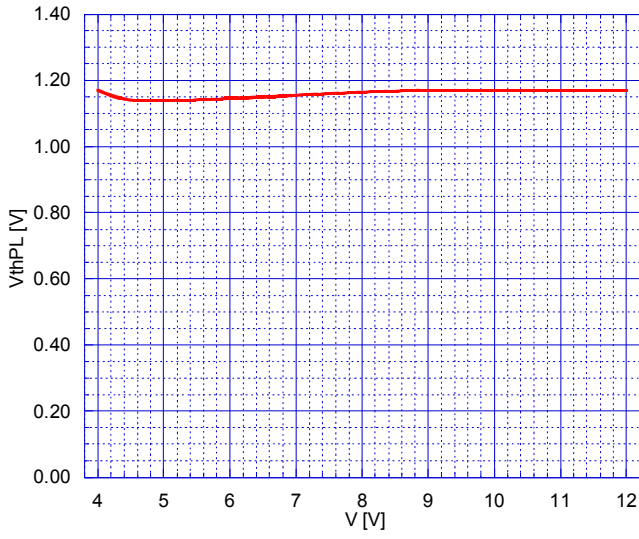
### V vs VthSL



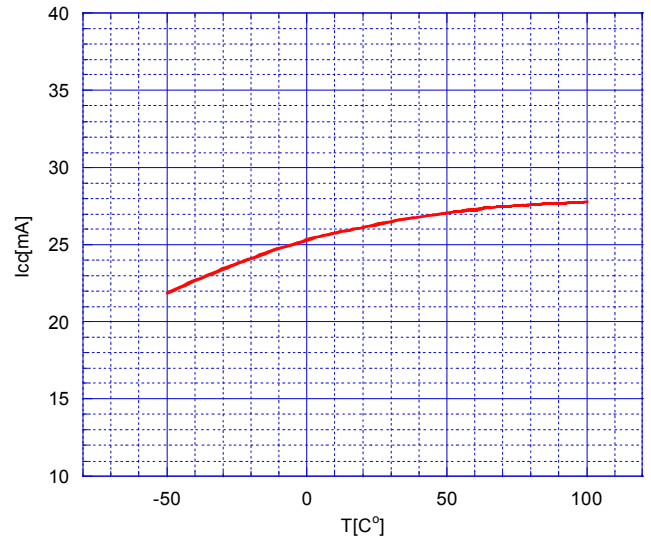
### V vs VthPH



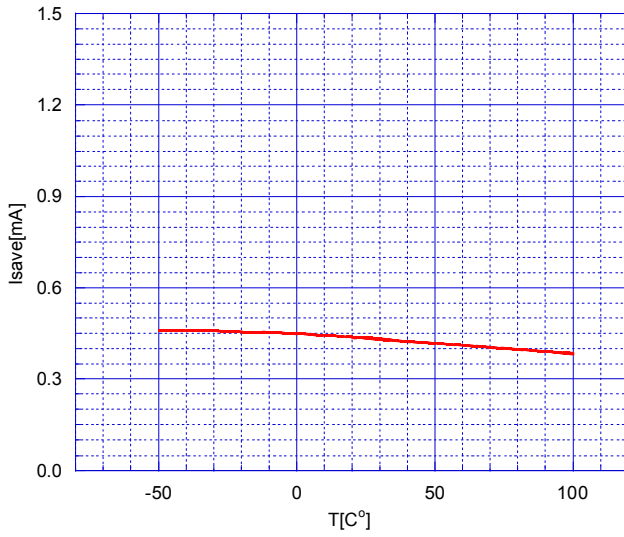
### V vs VthPL



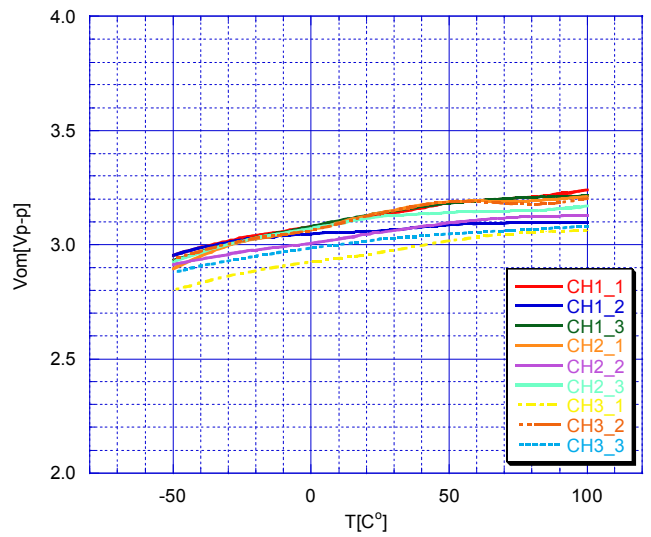
### T vs Icc



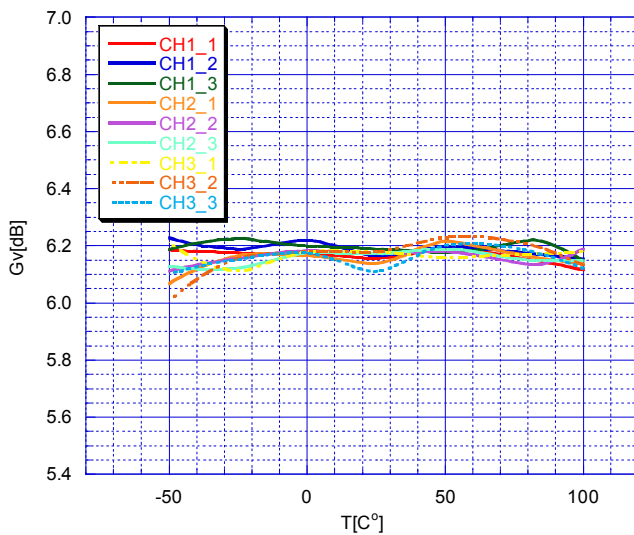
### T vs Isave



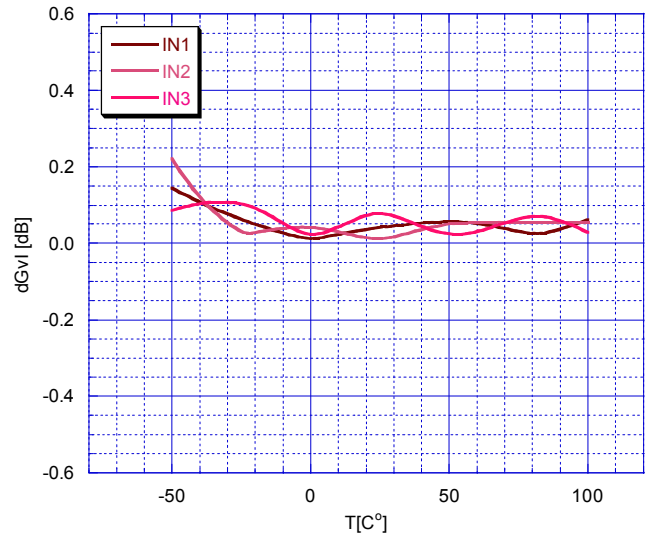
### T vs Vom



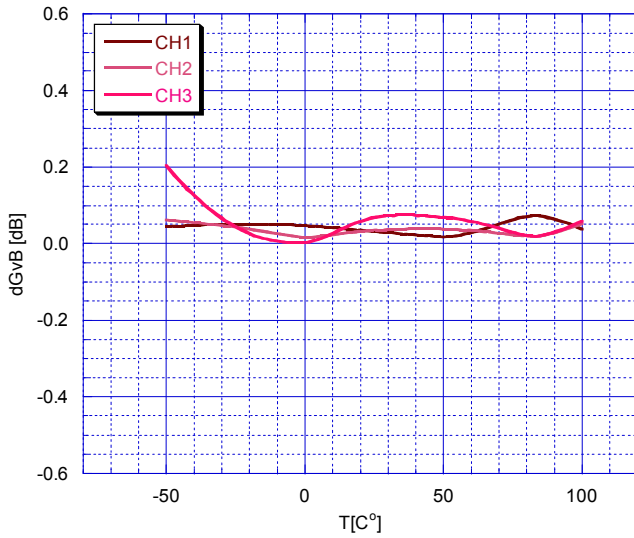
### T vs Gv



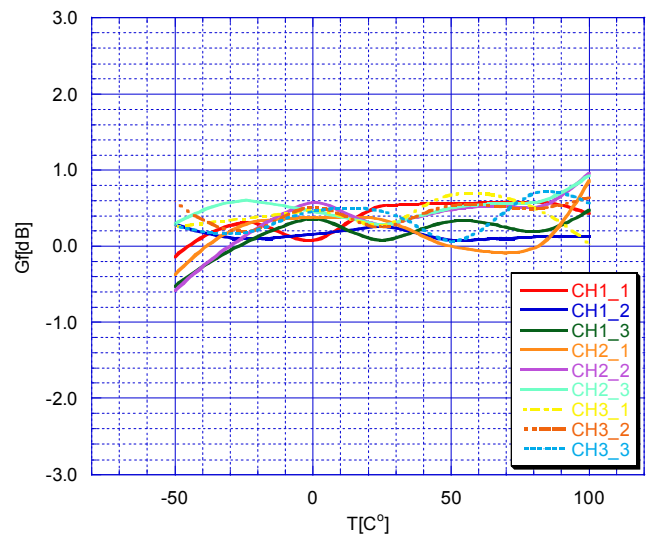
### T vs dGvI



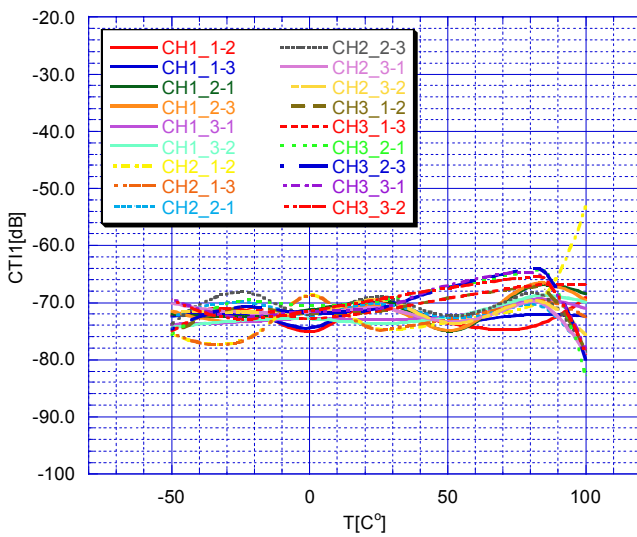
### T vs dGvB



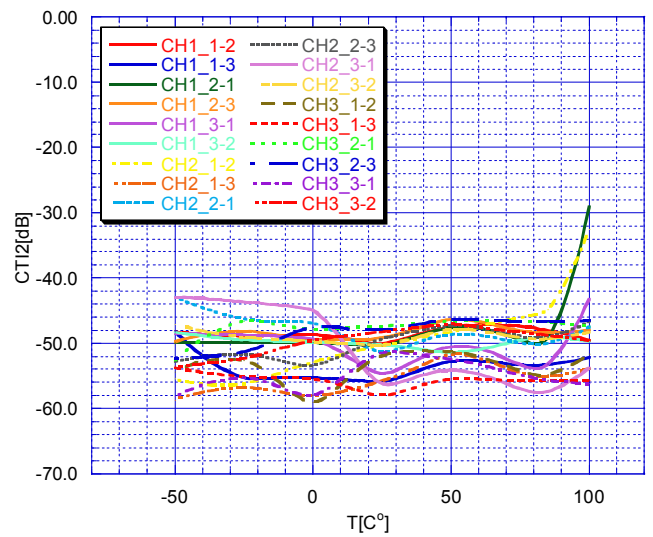
### T vs Gf



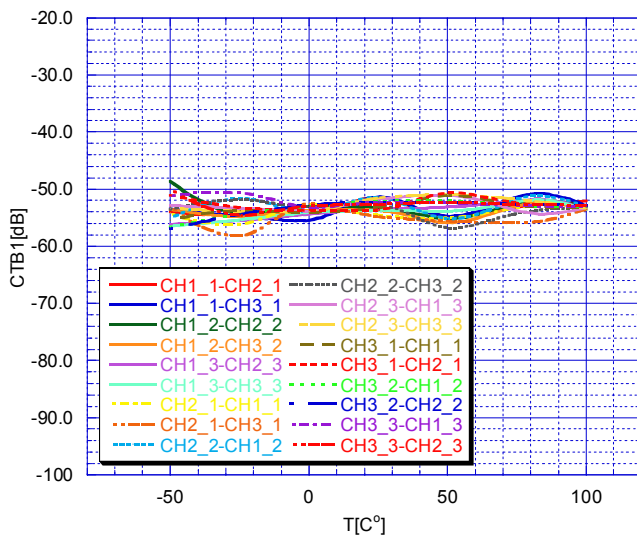
### T vs CTI1



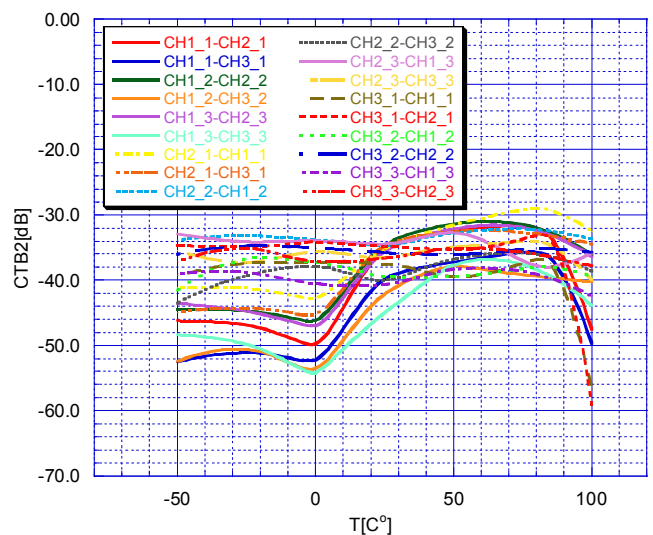
### T vs CTI2



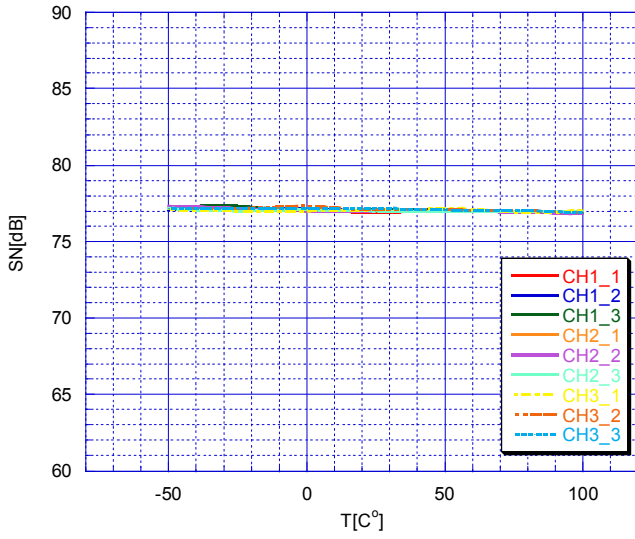
### T vs CTB1



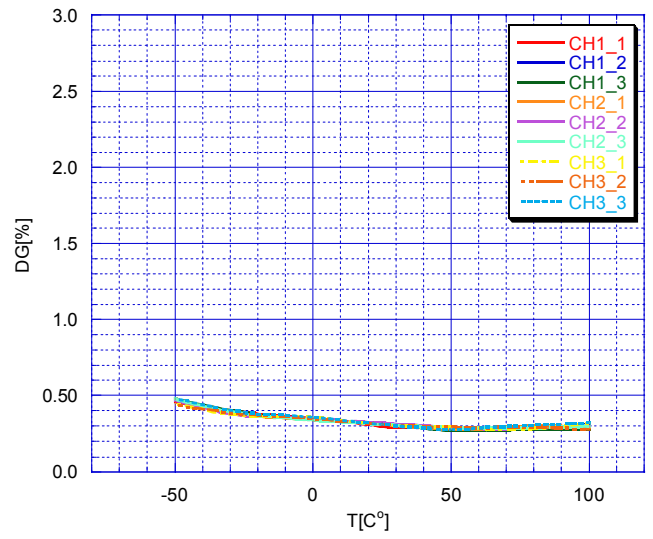
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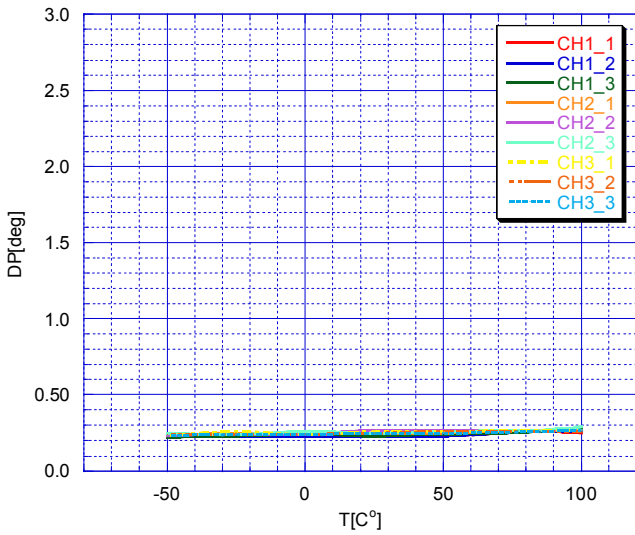
T vs SN



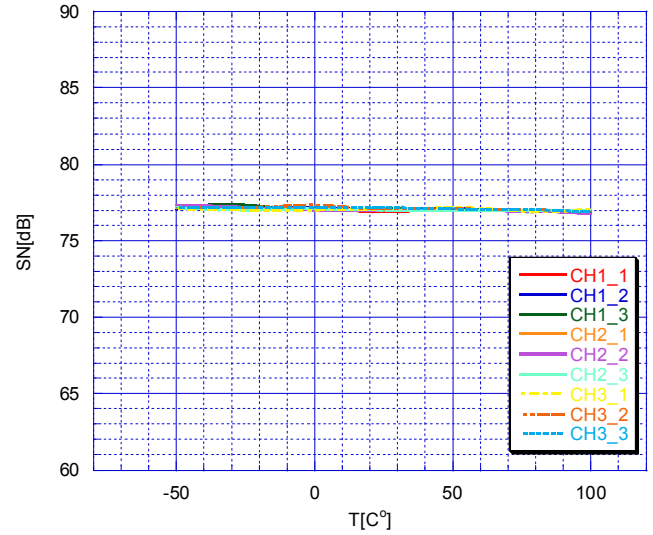
T vs DG



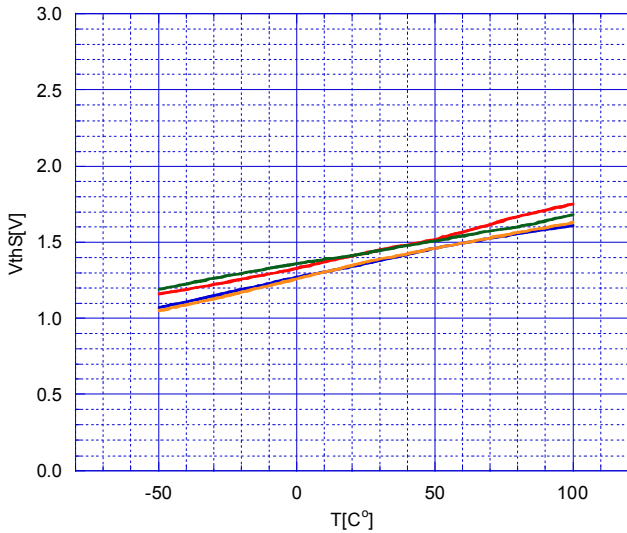
T vs DP



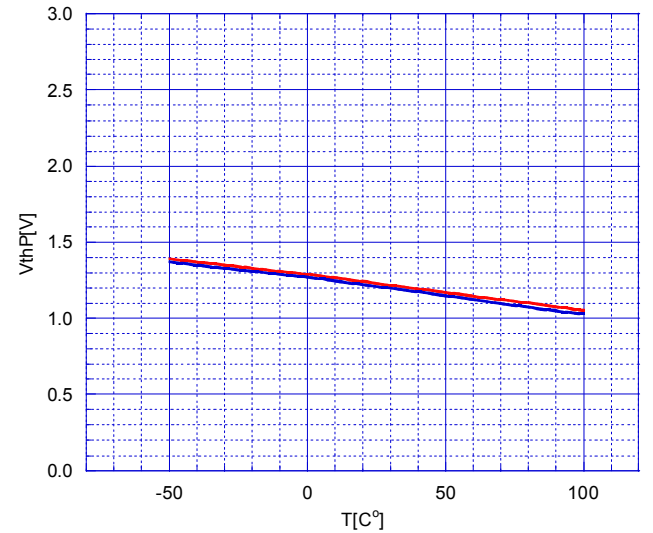
T vs SN



T vs VthS



T vs VthP





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