

LOW VOLTAGE 3ch VIDEO AMPLIFIER WITH LPF

■ GENERAL DESCRIPTION

The **NJM2573** is a Low Voltage 3ch Video Amplifier with LPF. Internal 75Ω driver is easy to connect TV monitor directly.

The **NJM2573** corresponds to a clamp and bias inputs, and selection of a clamp/ bias is possible for one circuit, and it corresponds to various video signals.

The **NJM2573** features low power and small package, and is suitable for low power design on downsizing of DVC.

■ PACKAGE OUTLINE



NJM2573SE4

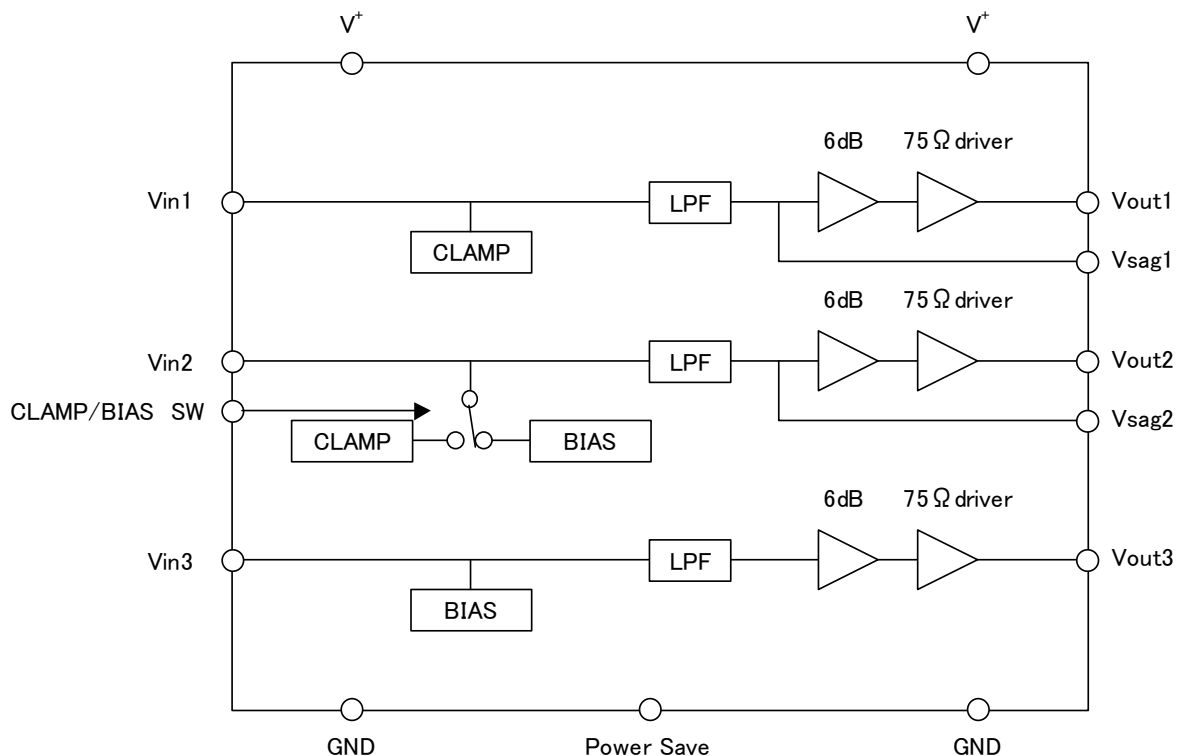


NJM2573V

■ FEATURES

- Operating Voltage 2.8 to 5.5V
- Input type Vin1: CLAMP
 Vin2: CLAMP/ BIAS
 Vin3: BIAS
- Internal LPF
- Internal 6dB amplifier
- Internal 75Ω Driver Circuit (2-system drive)
- Internal Power Saving Circuit
- Bipolar Technology
- Package Outline PCSP16, SSOP14

■ BLOCK DIAGRAM

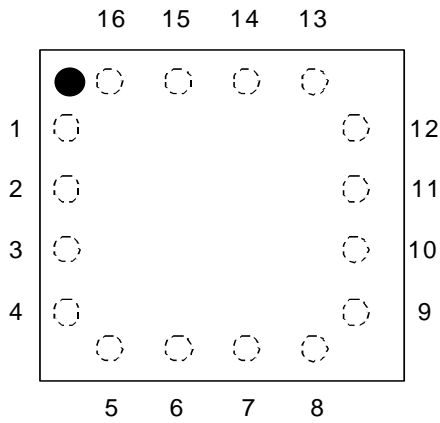


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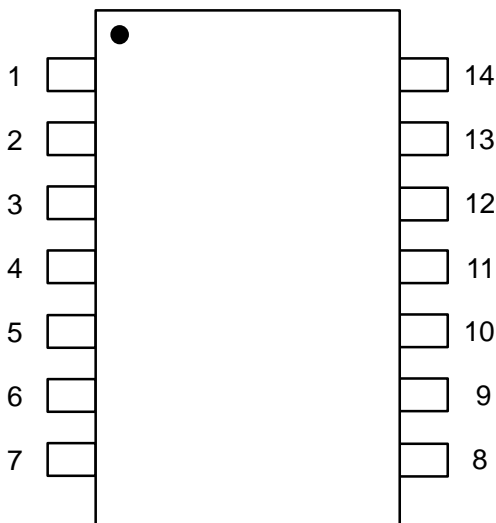
■ PIN CONFIGURATION

PCSP16



1. Vin1
2. Power Save
3. Vin2
4. NC
5. GND1
6. Vin3
7. CLAMP/BIAS SW
8. Vout3
9. GND2
10. Vout2
11. Vsag2
12. V⁺²
13. Vout1
14. Vsag1
15. NC
16. V⁺¹

SSOP14



1. Vsag1
2. V⁺¹
3. Vin1
4. Power Save
5. Vin2
6. GND1
7. Vin3
8. CLAMP/BIAS SW
9. Vout3
10. GND2
11. Vout2
12. Vsag2
13. V⁺²
14. Vout1

■ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	7.0	V
Power Dissipation	P _D	PCSP16 690 (Note) SSOP14 300	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +125	°C

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

■ELECTRICAL CHARACTERISTICS (V⁺=3.0V,R_L=150Ω,Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	Vopr		2.8	3.0	5.5	V
Operating Current	I _{CC}	No Signal	-	18.0	26.0	mA
Operating Current at Power Save	I _{save}	Power Save Mode	-	60	90	uA
Maximum Output Voltage Swing	Vomv	f=1kHz,THD=1%, CLAMP Input	2.2	2.4	-	Vp-p
	Vom RGB	f=1kHz,THD=1%, BIAS Input	1.4	2.2	-	
Voltage Gain	Gv	Vin=100kHz, 1.0Vp-p,Sin Signal (CLAMP) Vin=100kHz 0.7Vp-p,Sin Signal (BIAS)	6.0	6.4	6.8	dB
Low Pass Filter Characteristic	Gfy4.5M	Vin=4.5MHz/100kHz, 1.0Vp-p(CLAMP) Vin=4.5MHz/100kHz, 0.7Vp-p(BIAS)	-0.5	0.0	+0.5	dB
	Gfy8M	Vin=8MHz/100kHz, 1.0Vp-p(CLAMP) Vin=8MHz/100kHz, 0.7Vp-p(BIAS)	-	-2.0	-	
	Gfy16M	Vin=16MHz/100kHz, 1.0Vp-p(CLAMP) Vin=16MHz/100kHz, 0.7Vp-p(BIAS)	-	-12	-	
Cross talk	CT	Vin=4.43MHz, 1.0Vp-p,Sin Signal (CLAMP) Vin=4.43MHz 0.7Vp-p,Sin Signal (BIAS)	-	-65	-	dB
Differential Gain	DG	(CLAMP) Vin=1.0Vp-p Input 10step Video Signal	-	0.2	-	%
Differential Phase	DP	(CLAMP) Vin=1.0Vp-p Input 10step Video Signal	-	0.2	-	deg
S/N Ratio	SNv	(CLAMP) Vin=1.0Vp-p,100% White Video Signal (BIAS) Vin=0.7Vp-p,100% Red field Signal	-	+60	-	dB
2nd. Distortion	Hv	(CLAMP) Vin=1.0Vp-p, 3.58MHz, Sin Signal, R _L =75Ω (BIAS) Vin=0.7Vp-p, 3.58MHz, Sin Signal, R _L =75Ω	-	-40	-	dB
SW Change Voltage High Level	VthPH		1.8	-	V ⁺	V
SW Change Voltage Low Level	VthPL		0	-	0.3	

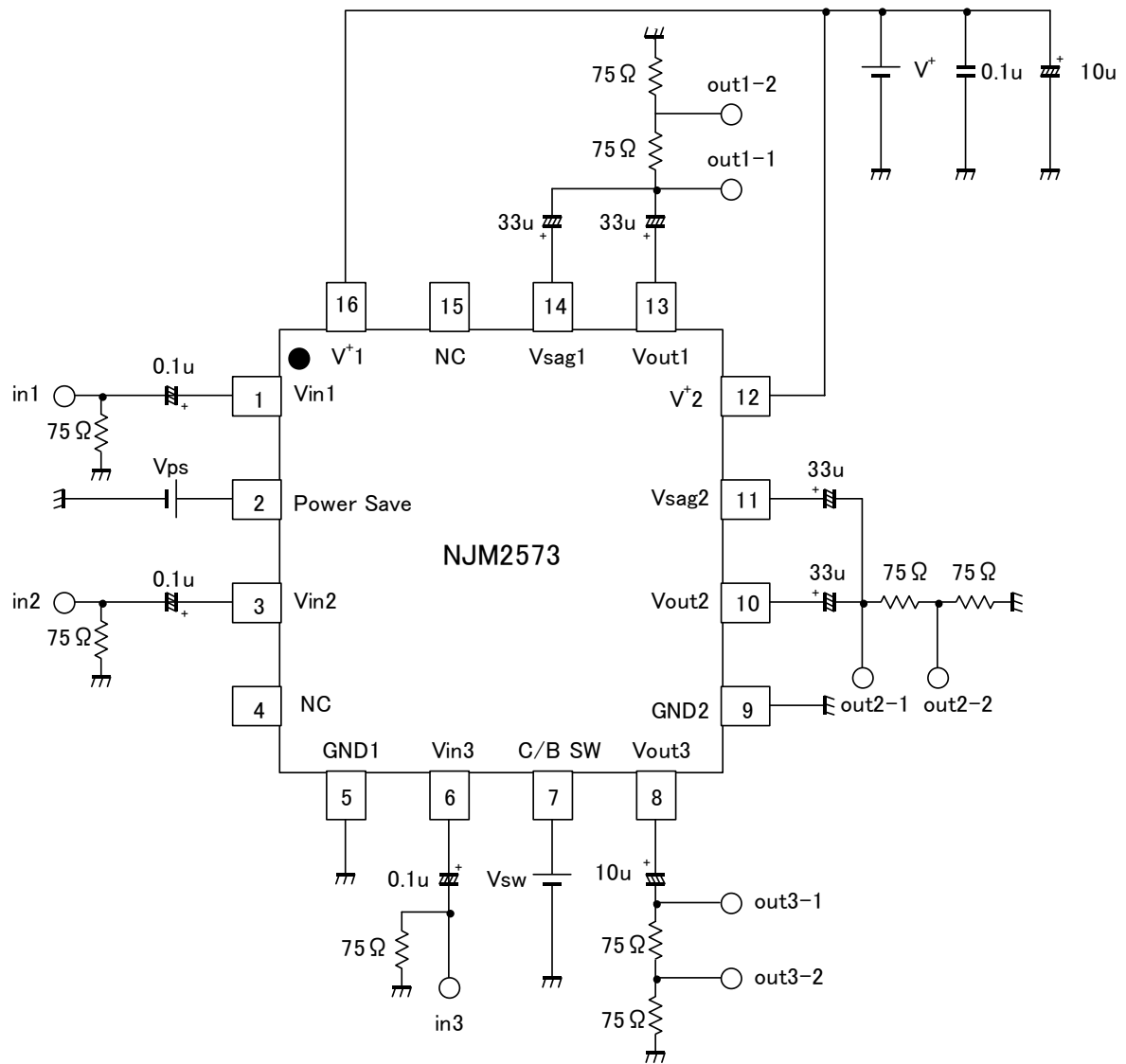
■CONTROL TERMINAL

PARAMETER	STATUS	NOTE
Power Save	H	Power Save: ON
	L	Power Save: OFF
	OPEN	Power Save: OFF
CLAMP/BIAS SW	H	BIAS
	L	CLAMP
	OPEN	CLAMP

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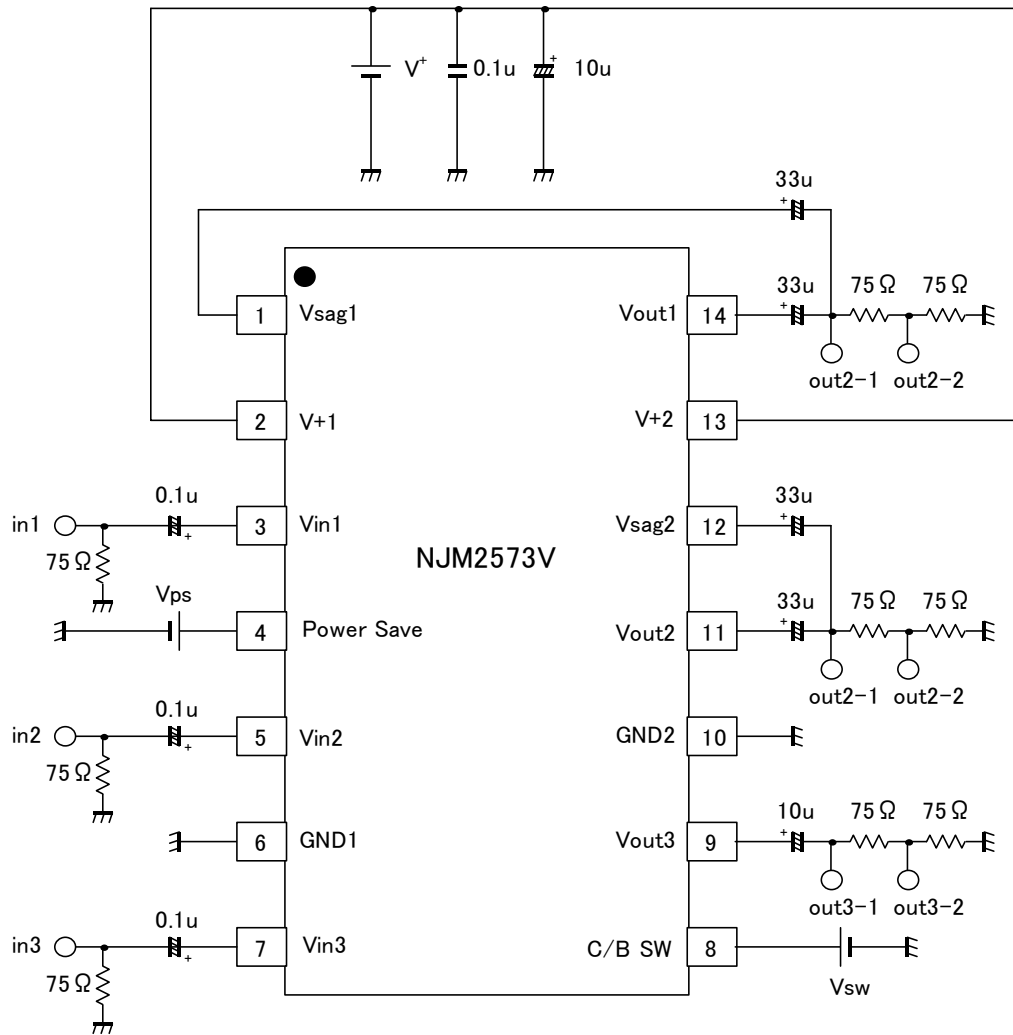
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■ TEST CIRCUIT (PCSP16)



Ver.4

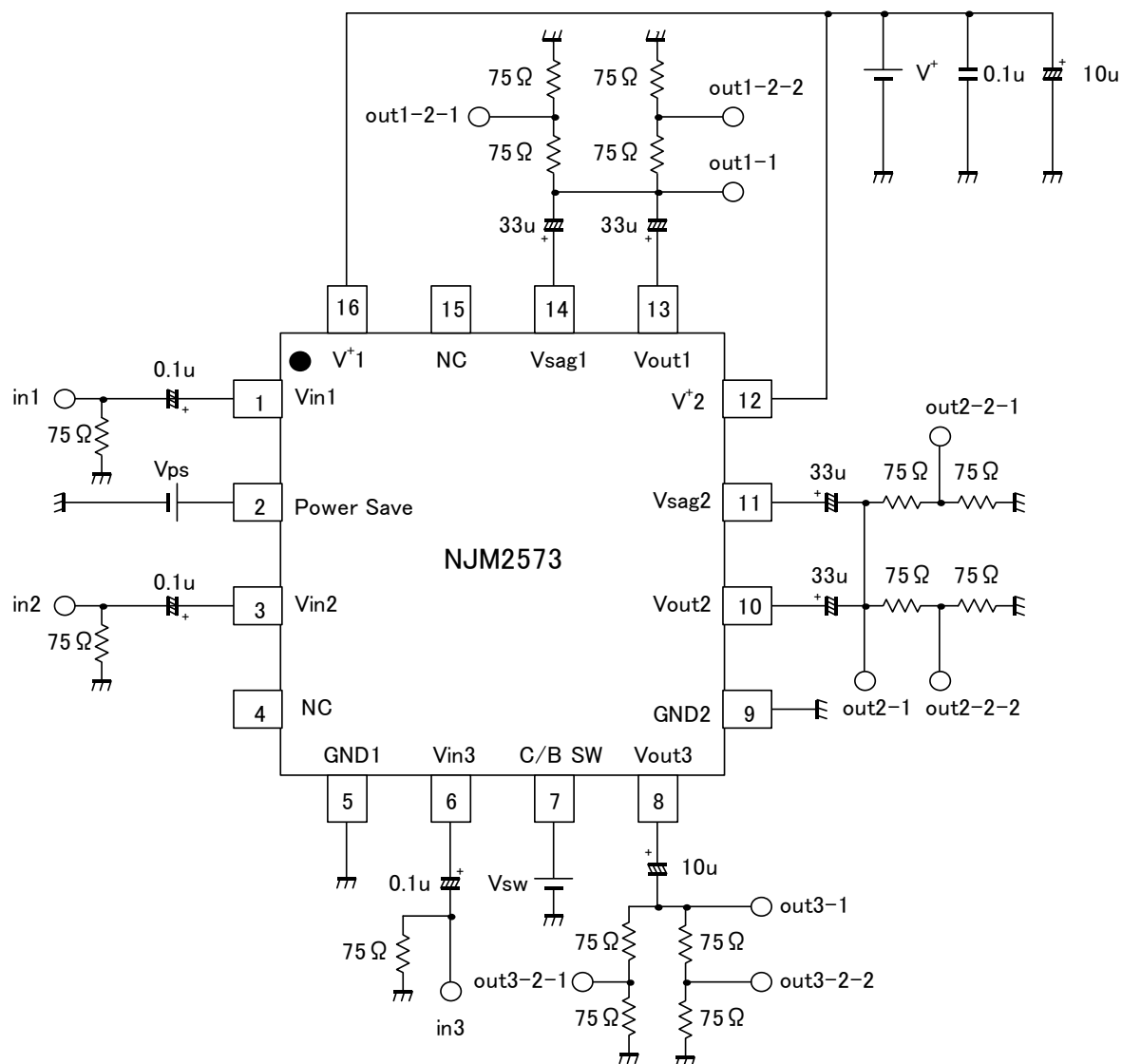
■ TEST CIRCUIT (SSOP14)



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APPLICATION CIRCUIT (PCSP16, 2-system drive)



Ver.4

■EQUIVALENT CIRCUIT

PCSP16 PIN No.	SSOP14 PIN No.	PIN NAME	FUNCTION	INSIDE EQUIVALENT CIRCUIT
1	3	VIN1	Clamp input	
2	4	Power Save	Power save	
3	5	Vin2	Clamp/Bias input	
4	-	NC	Non connection	
5	6	GND1	GND	
6	7	Vin3	Bias input	

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PCSP16 PIN No.	SSOP14 PIN No.	PIN NAME	FUNCTION	INSIDE EQUIVALENT CIRCUIT
7	8	CLAMP/ BIAS SW	Clamp/Bias switch	
8	9	Vout3	Bias output	
9	10	GND2	GND	
10	11	Vout2	Clamp/Bias output	
11	12	Vsag2	Sag compensation	
12	13	V+2	Power Supply	

Ver.4

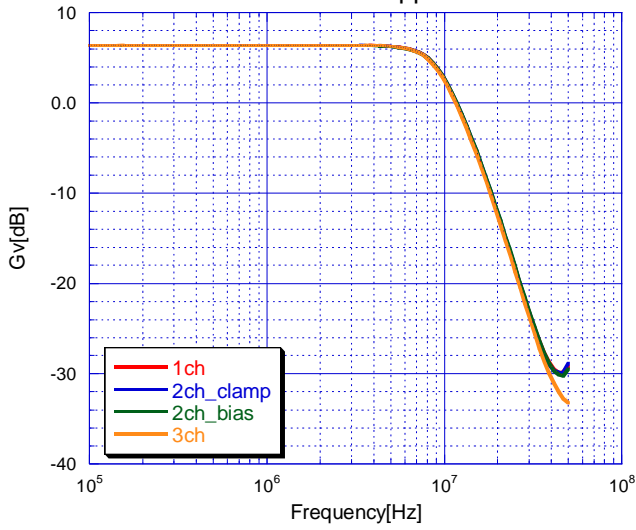
PCSP16 PIN No.	SSOP14 PIN No.	PIN NAME	FUNCTION	INSIDE EQUIVALENT CIRCUIT
13	14	Vout1	Clamp output	
14	1	Vsag1	Sag compensation	
15	-	NC	Non connection	
16	2	V+1	Power Supply	

APPLICATION

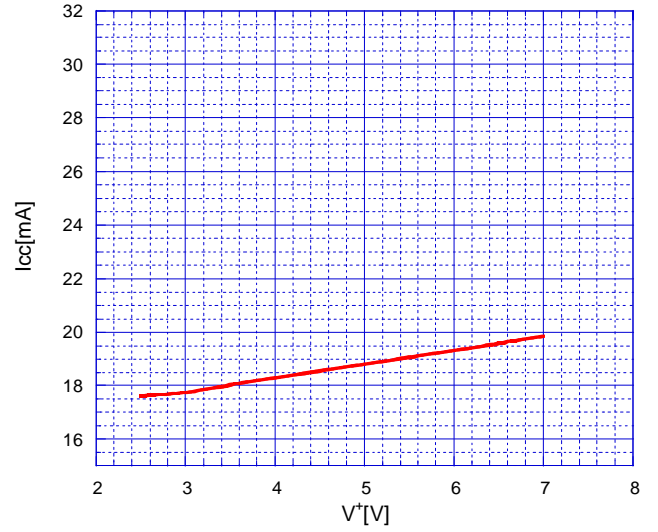
When the power supply voltage is not impressing, please don't impress voltage to the control terminal.

TYPICAL CHARACTERISTICS

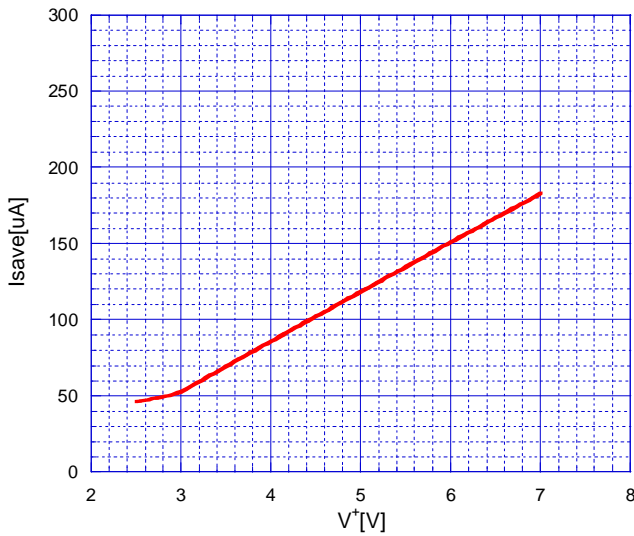
Voltage Gain vs. Frequency
Vin=1.0Vpp



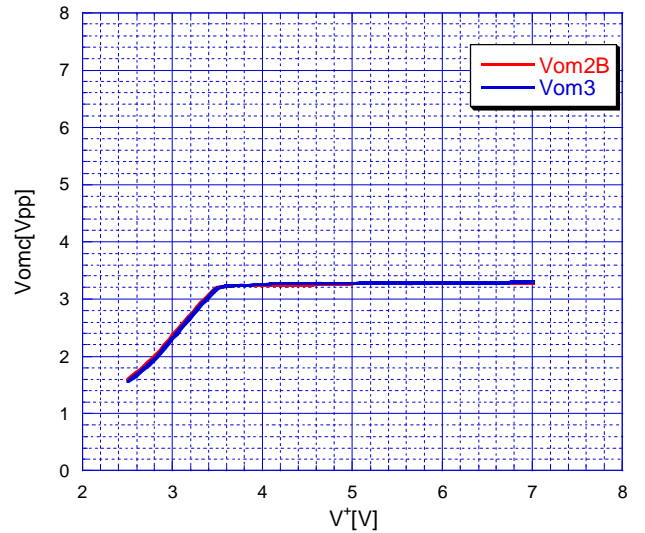
V⁺ vs I_{cc}



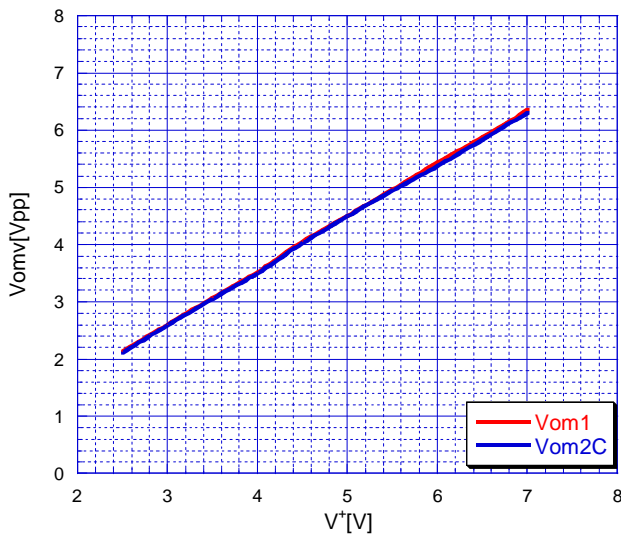
V⁺ vs I_{save}



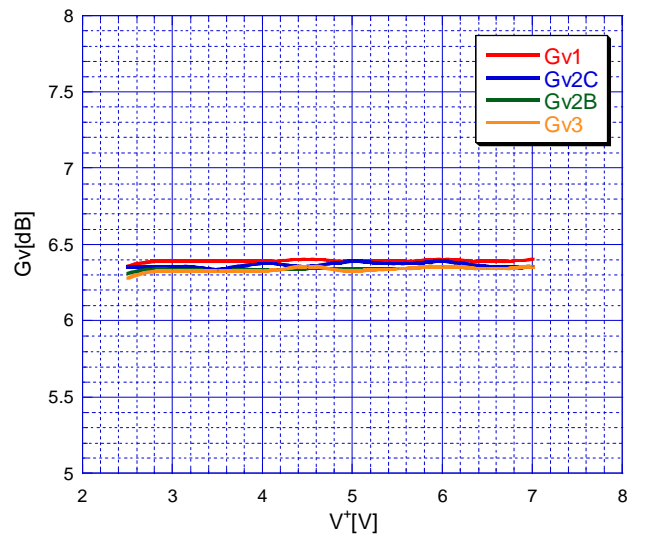
V⁺ vs Vomc



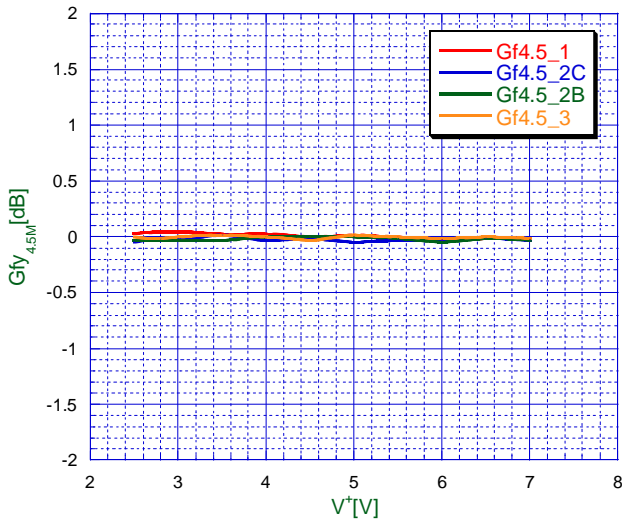
V⁺ vs Vomv



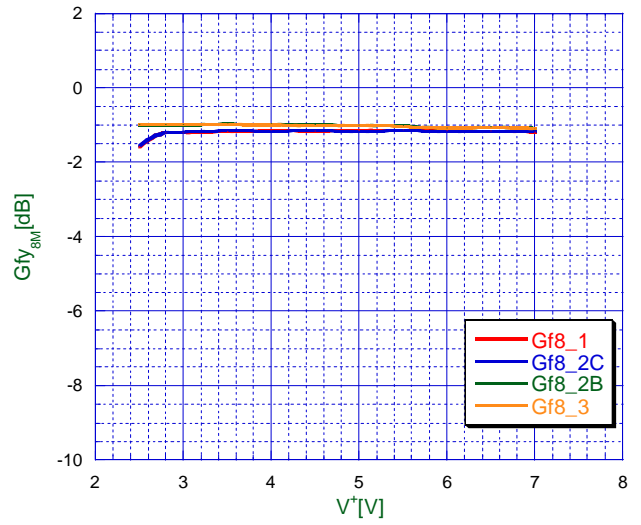
V⁺ vs Gv



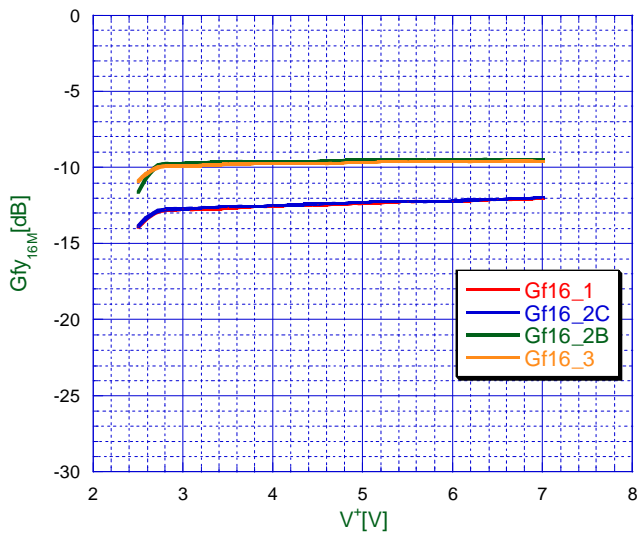
V⁺ vs Gfy_{4.5M}



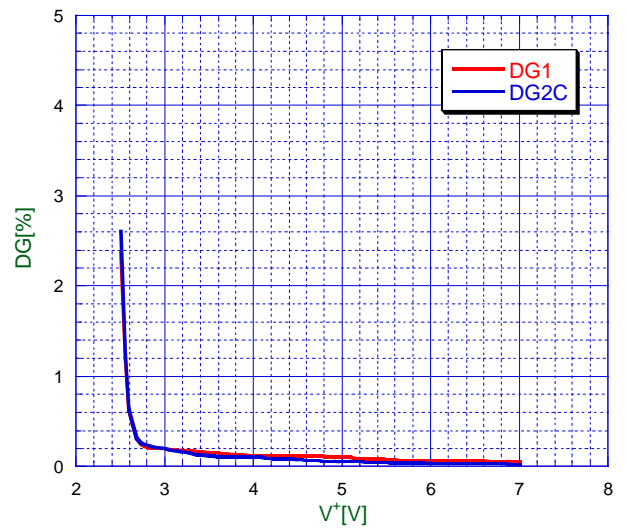
V⁺ vs Gfy_{8M}



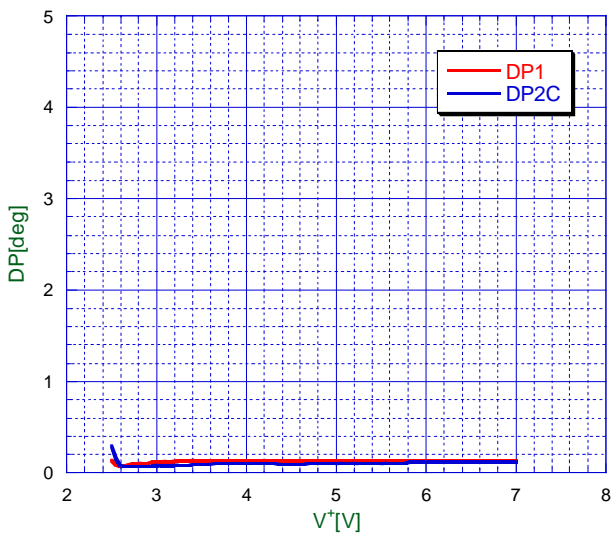
V⁺ vs Gfy_{16M}



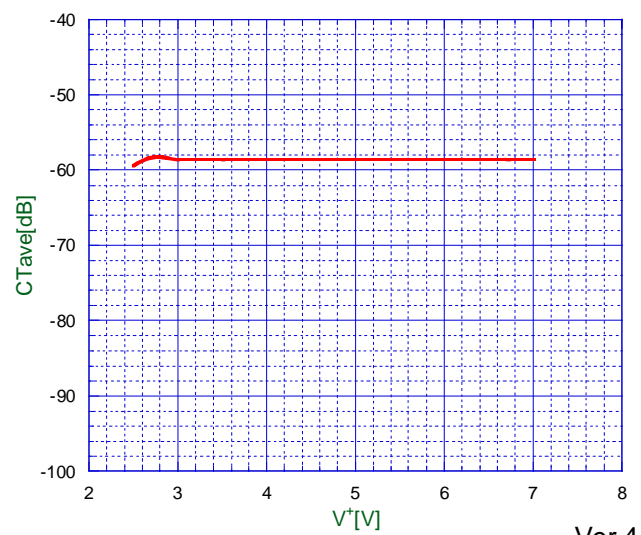
V⁺ vs DG



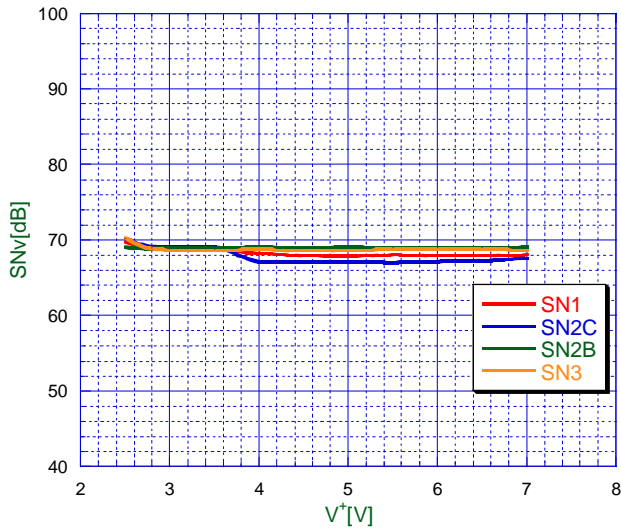
V⁺ vs DP



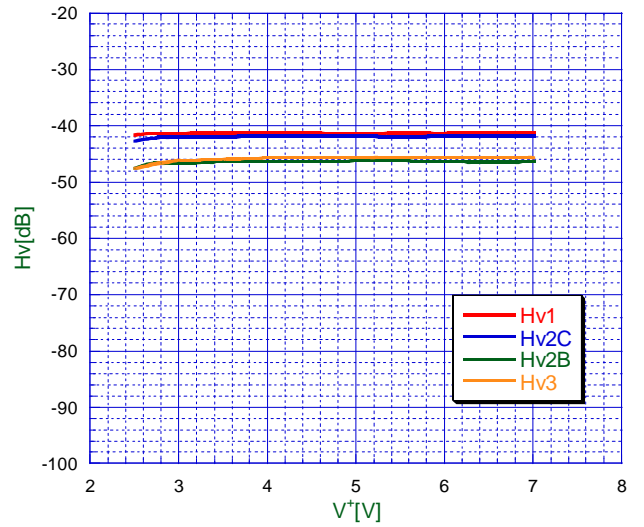
V⁺ vs CTave



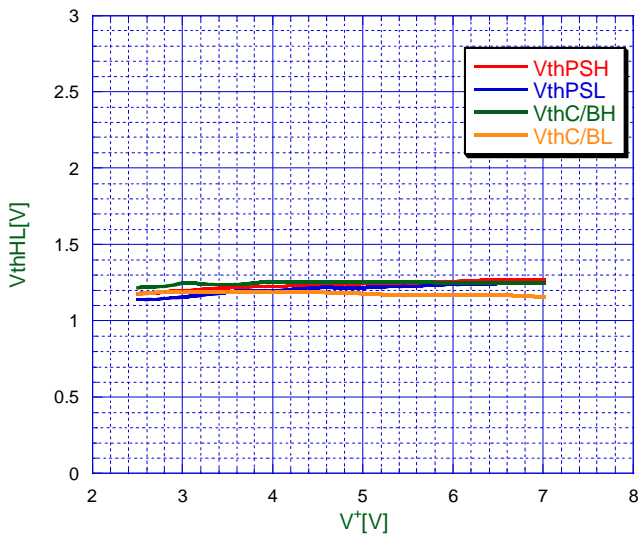
V⁺ vs SNv



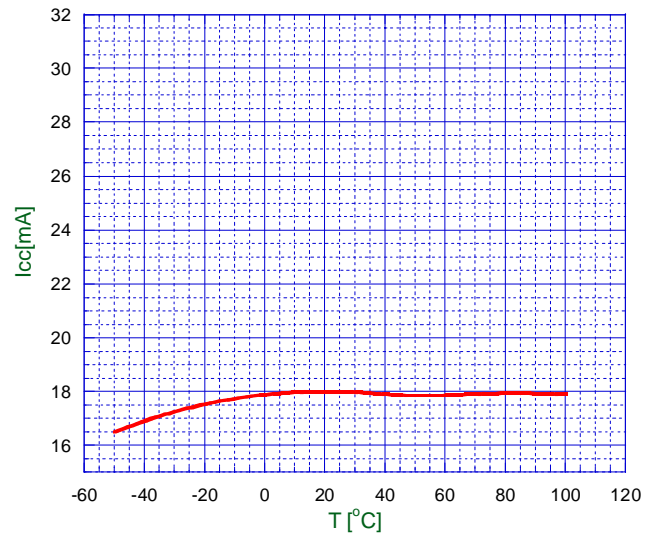
V⁺ vs Hv



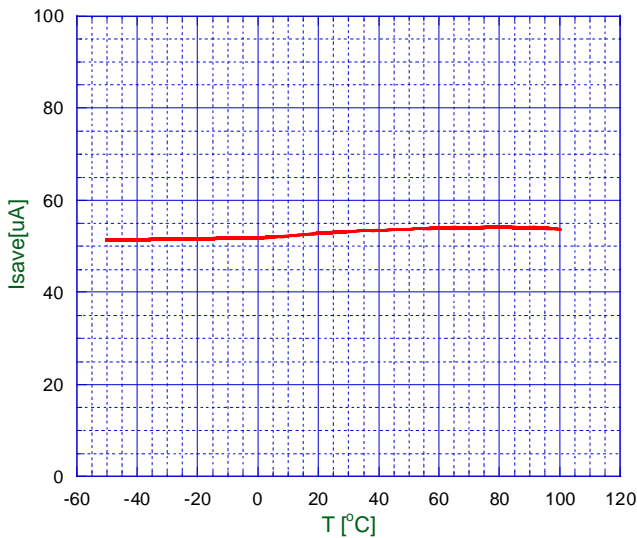
V⁺ vs VthHL



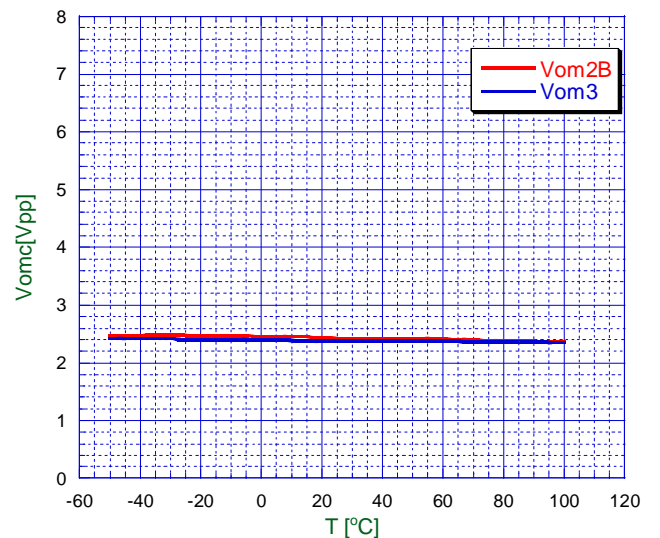
T vs Icc



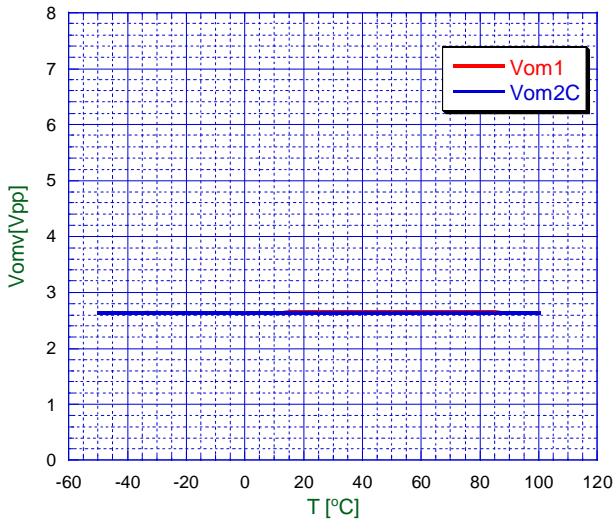
T vs Isave



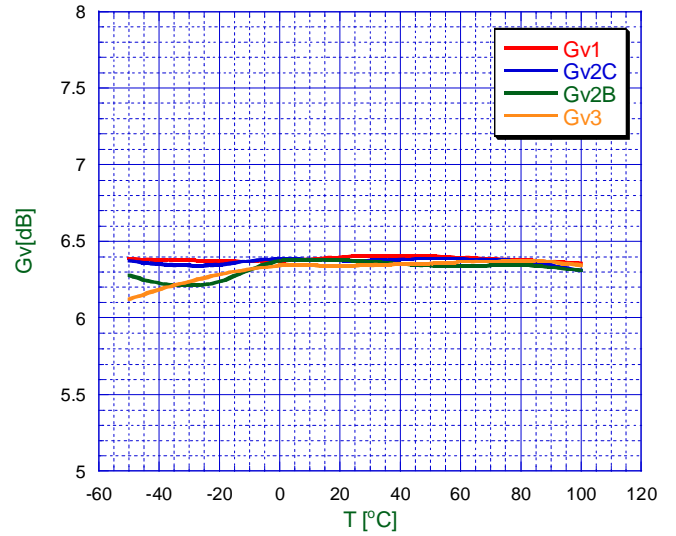
T vs Vomc



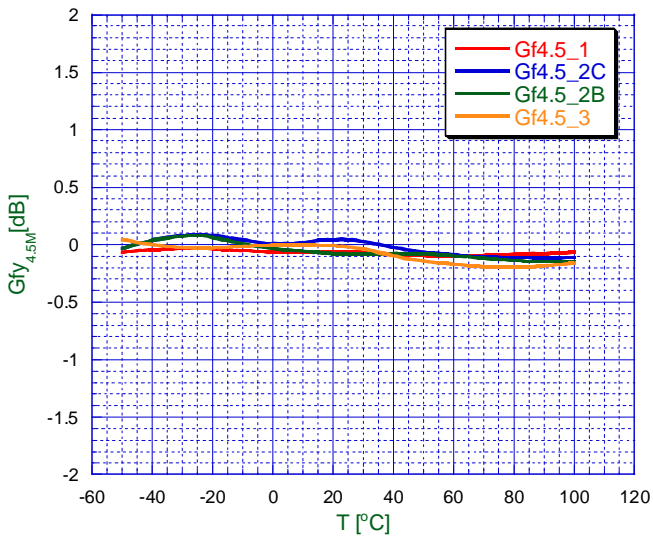
T vs Vomv



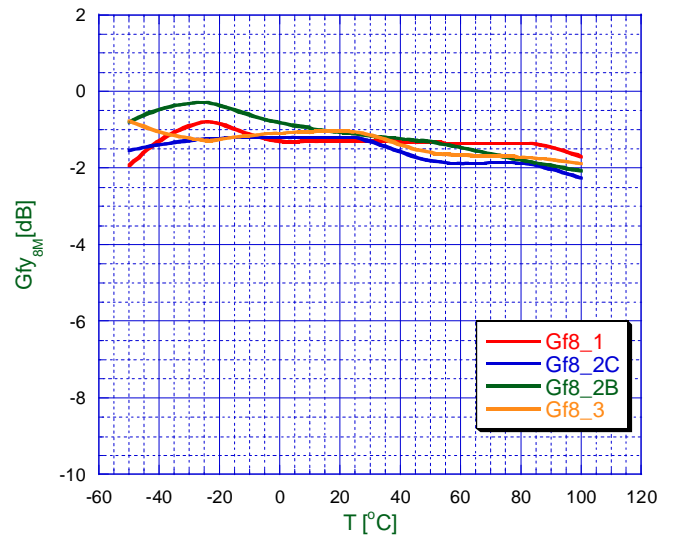
T vs Gv



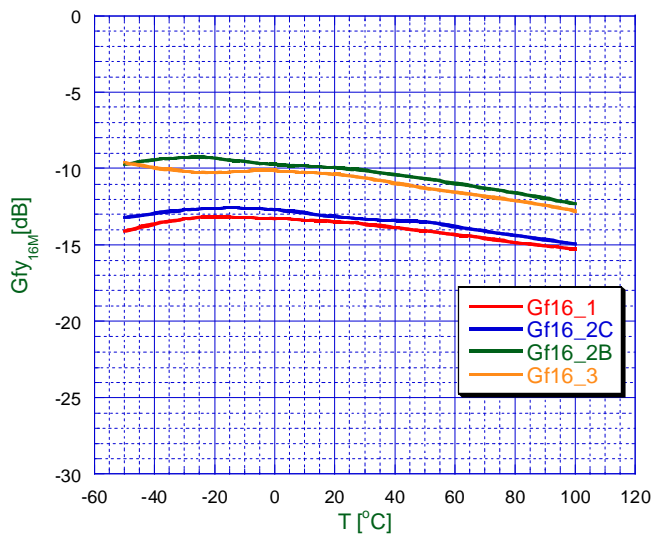
T vs Gfy_{4.5M}



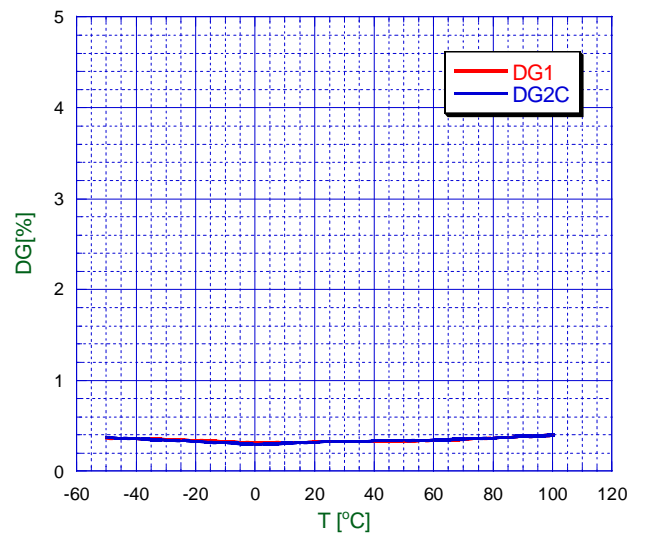
T vs Gfy_{8M}



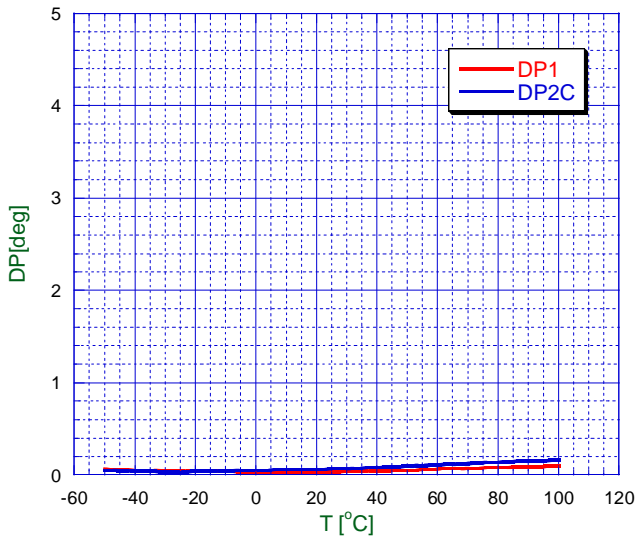
T vs Gfy_{16M}



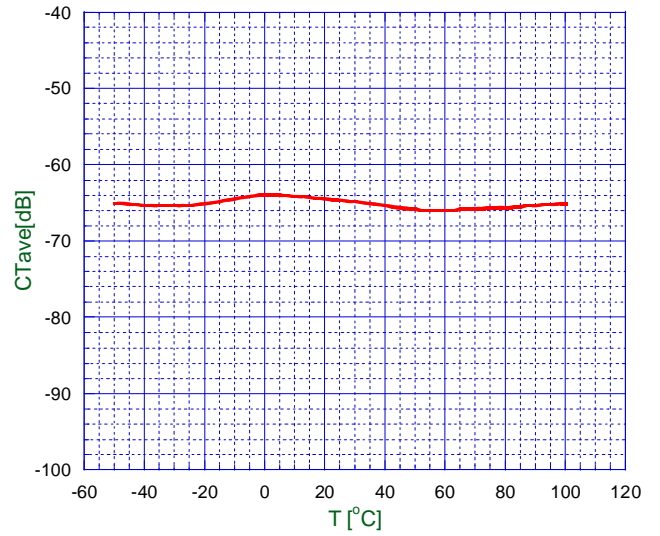
T vs DG



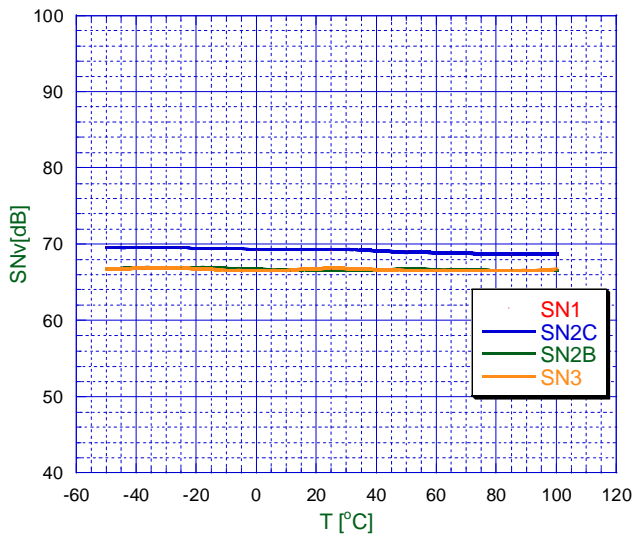
T vs DP



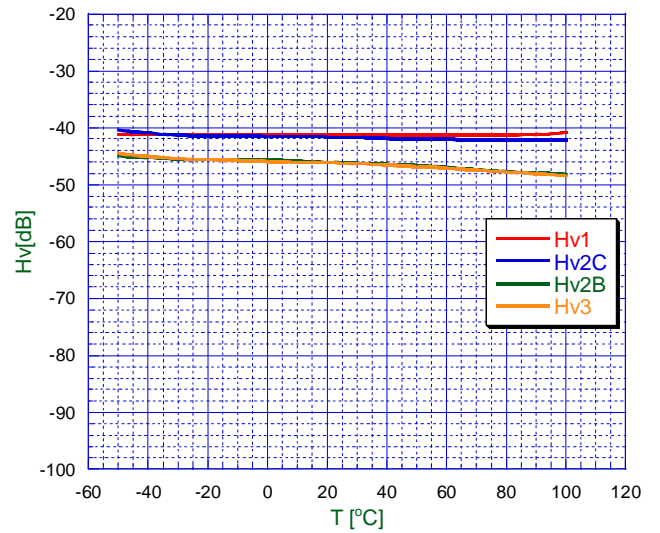
T vs CTave



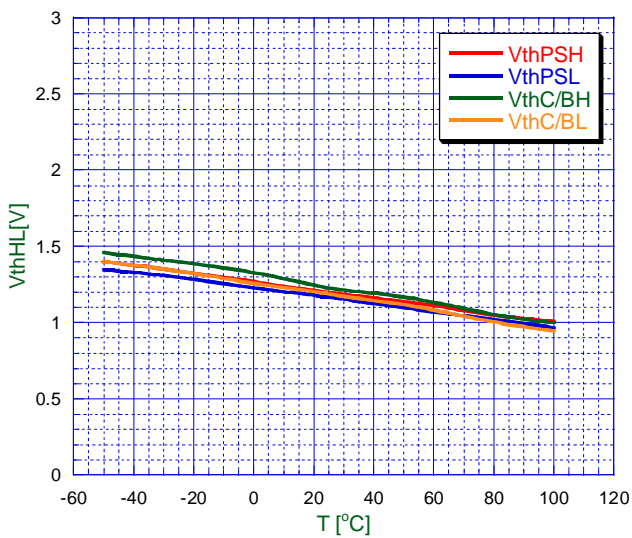
T vs SNv



T vs Hv



T vs VthHL



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