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

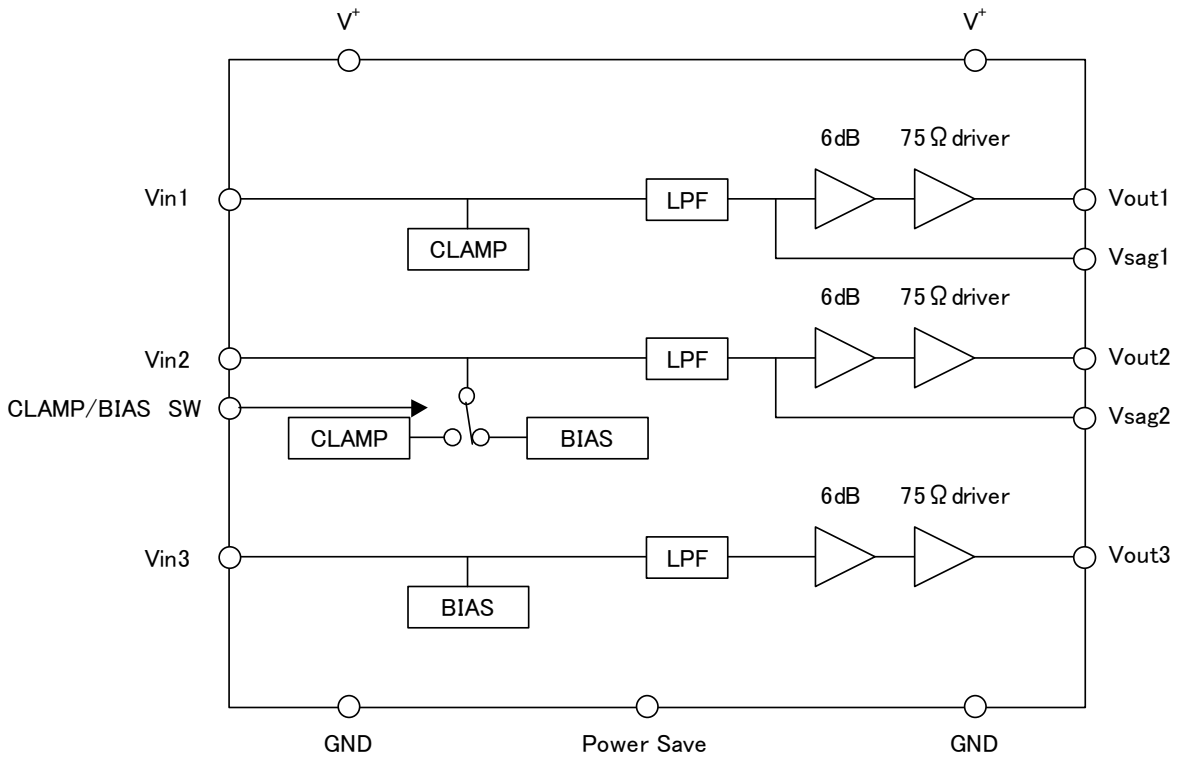
NJM2573SE4

NJM2573V

■FEATURES

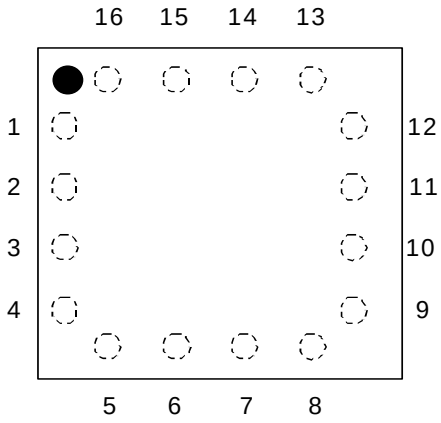
- Operating Voltage 2.8 to 5.5V
- Input type Vin1: CLAMP
  Vin2: CLAMP/ BIAS
  Vin3: BIAS
- Internal LPF
- Internal 6dB amplifier
- Internal 75Ω Driver Circuit (2-system drive)
- Internal Power Saving Circuit
- Bipolar Technology
- Package Outline PCSP16, SSOP14

■BLOCK DIAGRAM



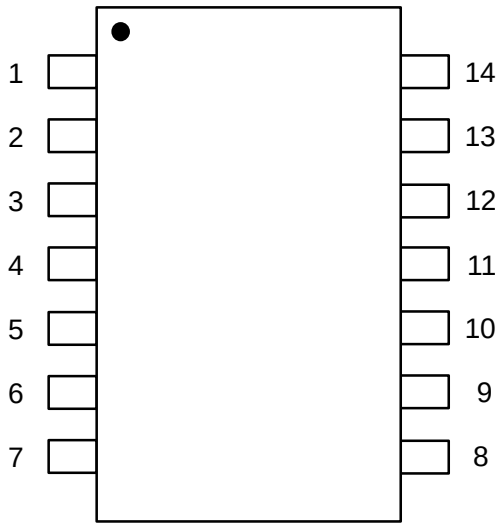
■PIN CONFIGURATION

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)

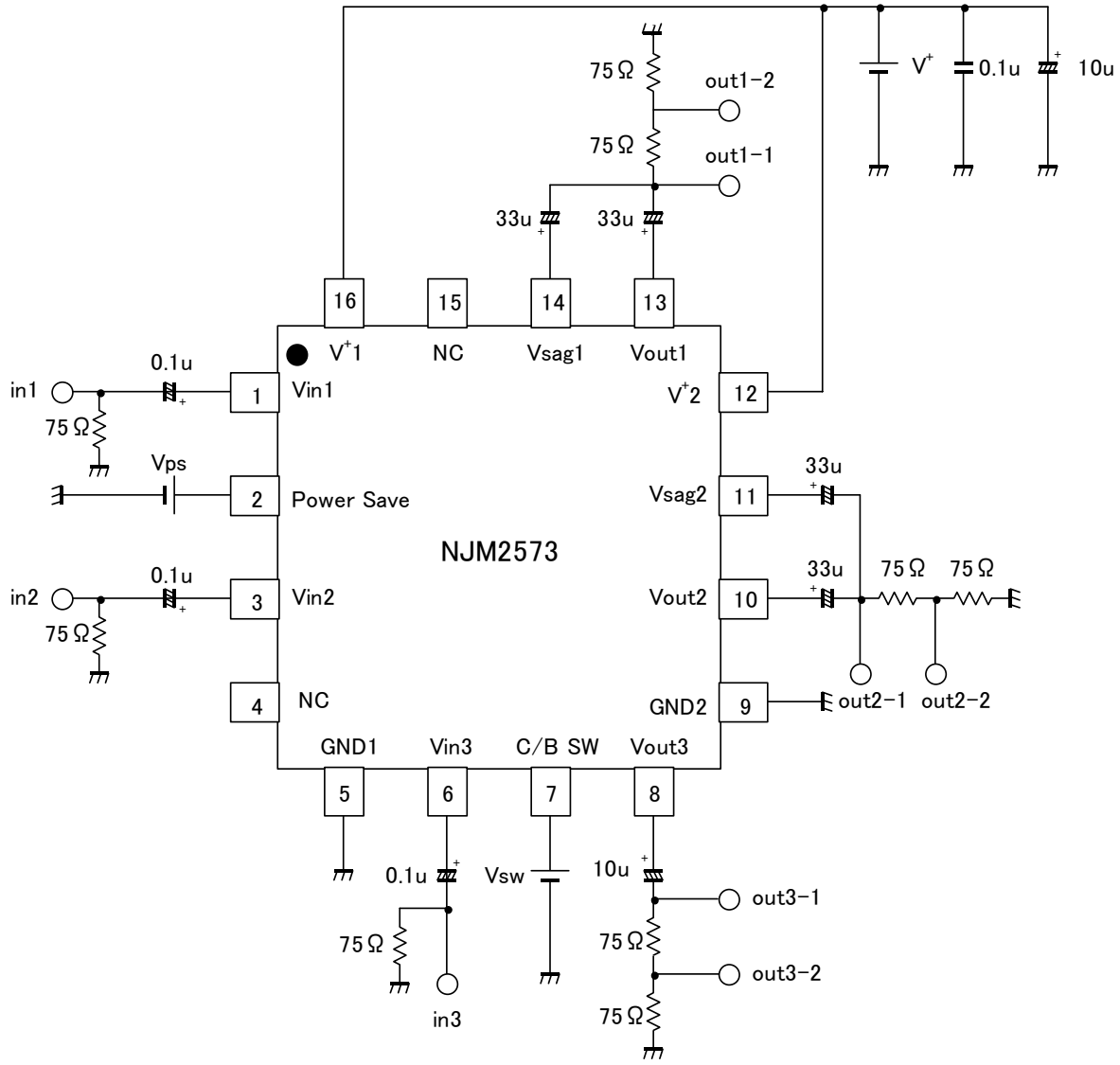
■**ELECTRICAL CHARACTERISTICS** (V^+=3.0V,R_L=150Ω,Ta=25°C)

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	Isave	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	

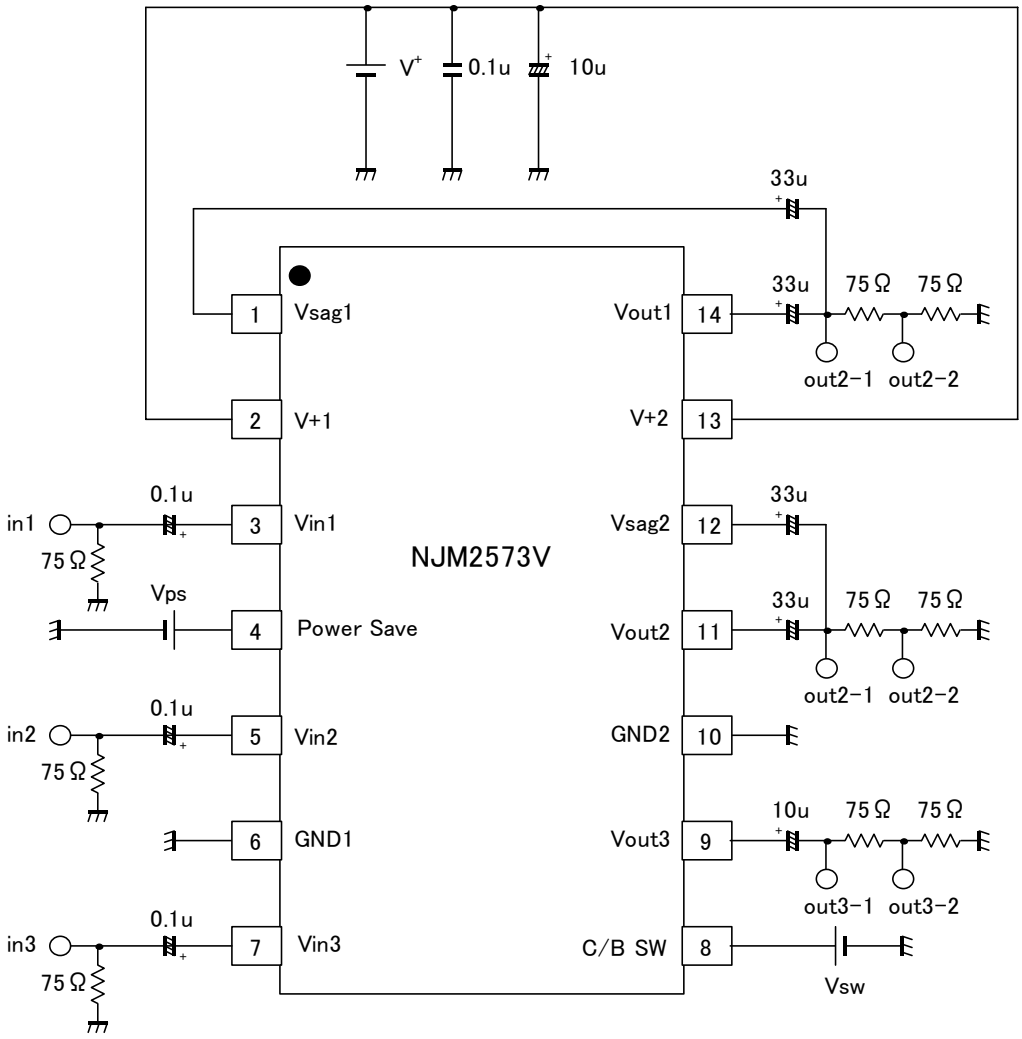
■**CONTROL TERMINAL**

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

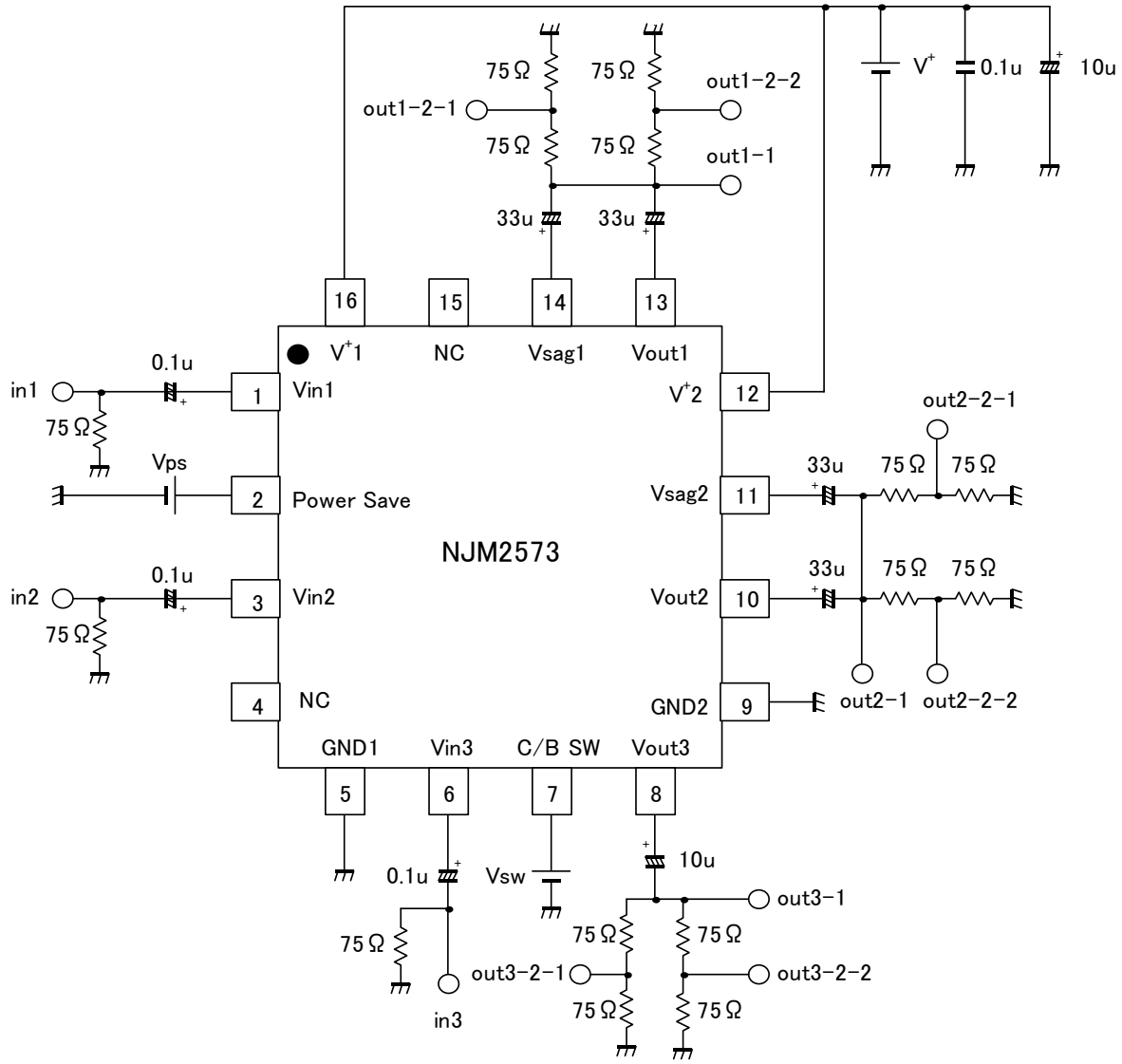
■ **TEST CIRCUIT (PCSP16)**



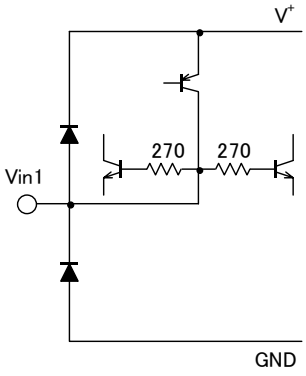
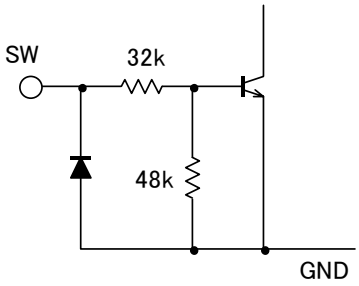
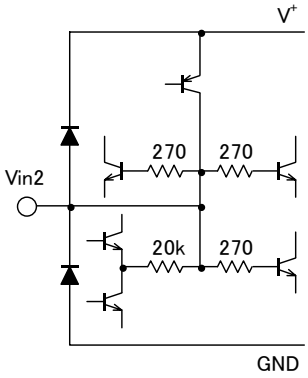
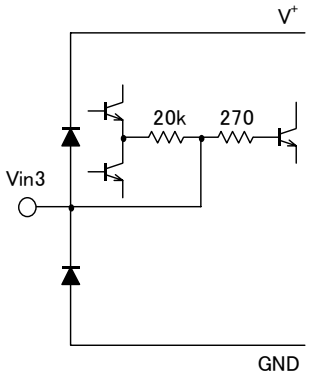
■ **TEST CIRCUIT (SSOP14)**

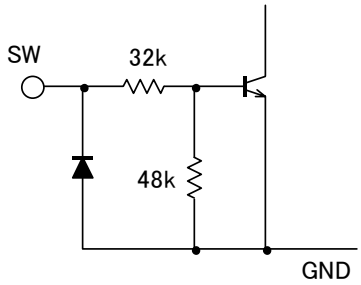
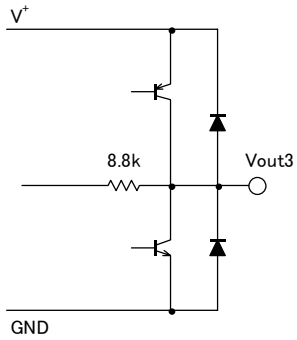
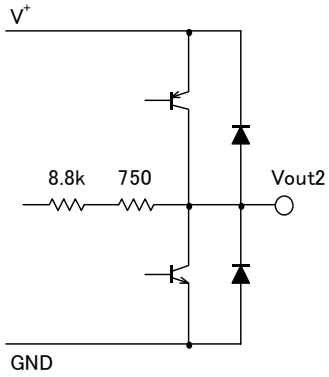
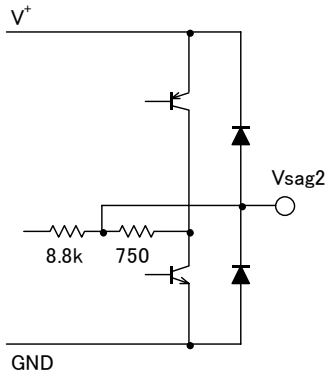


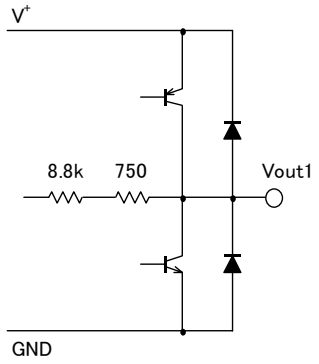
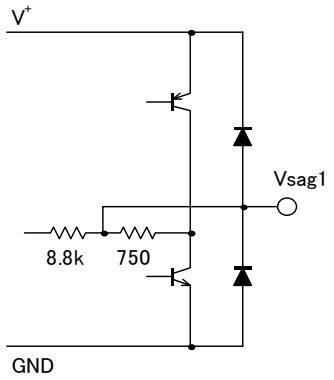
■APPLICATION CIRCUIT (PCSP16, 2-system drive)



■**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	

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	

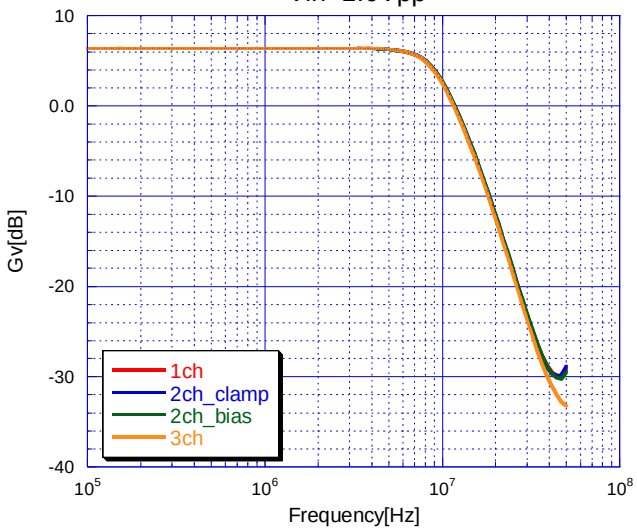
PCSP16 PIN No.	SSOP14 PIN No.	PIN NAME	FUNCTION	INSIDE EQUIVALENT CIRCUIT
13	14	Vout1	Clamp output	
14	1	Vsag1	Sag compensation	
15	-	NC	Non connection	
16	2	V^+1	Power Supply	

■ APPLICATION

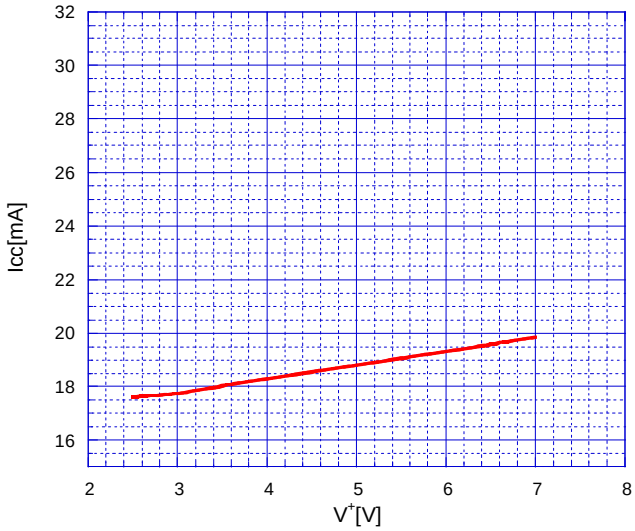
When the power supply voltage is not impressing, please don't impress voltage to the control terminal.

■TYPICAL CHARACTERISTICS

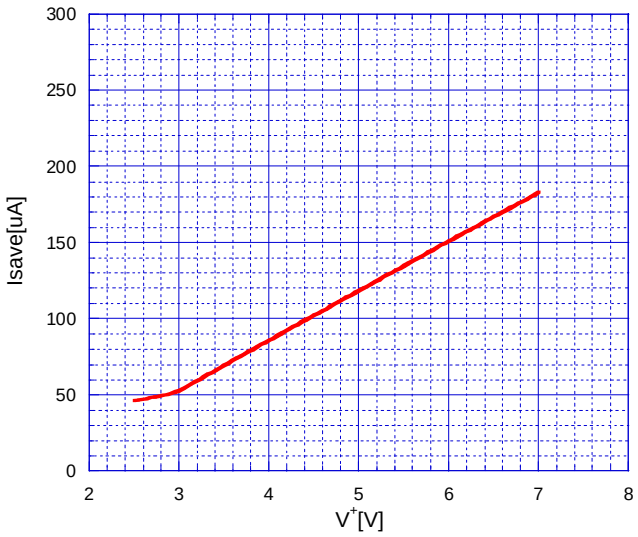
Voltage Gain vs. Frequency
Vin=1.0Vpp



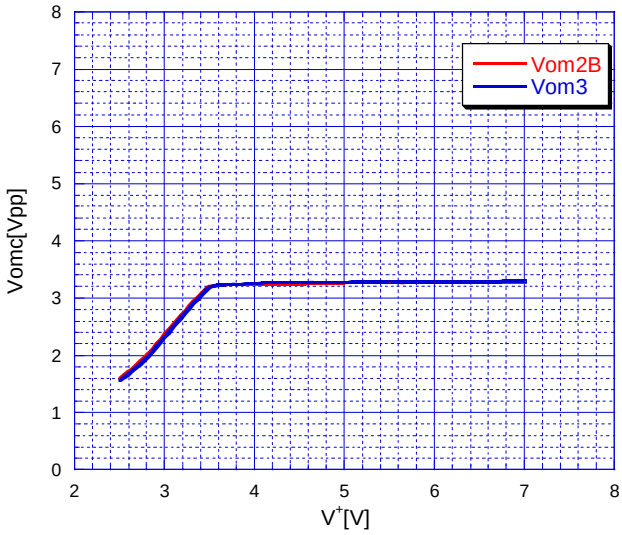
V^+ vs Icc



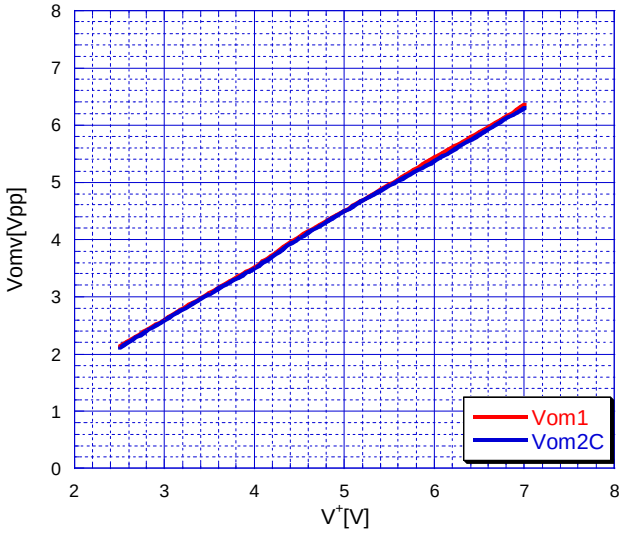
V^+ vs Isave



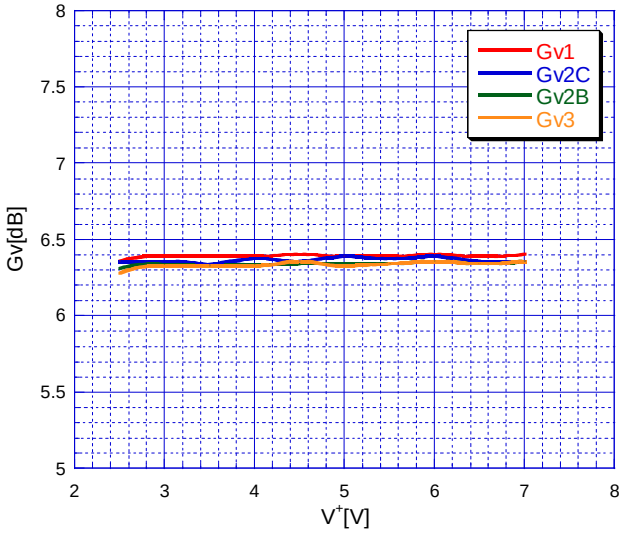
V^+ vs Vomc



V^+ vs Vomv



V^+ vs Gv



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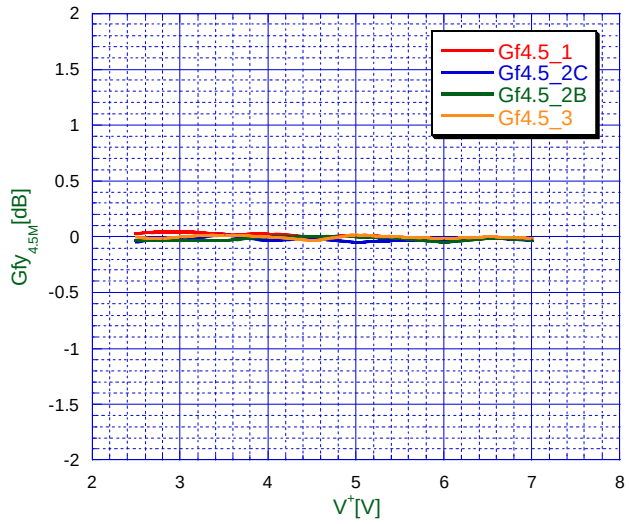
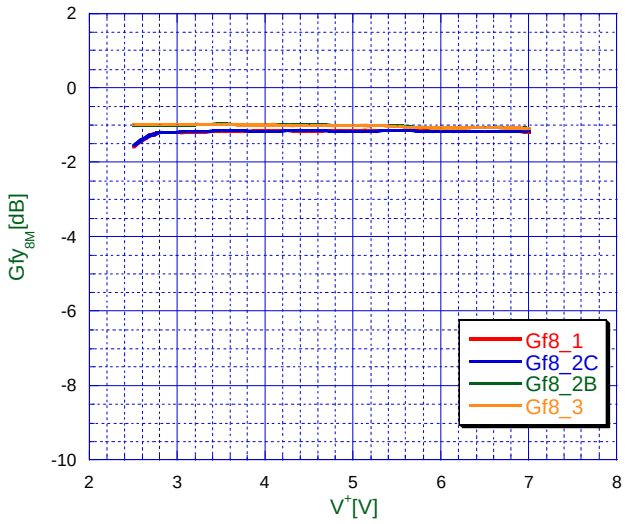
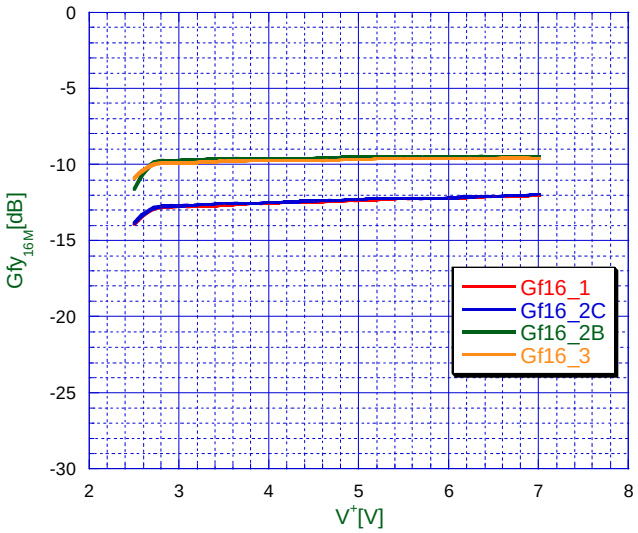
V^+ vs $Gfy_{4.5M}$



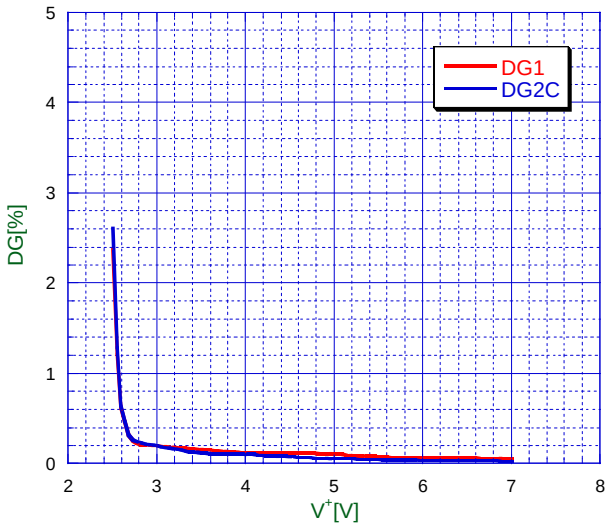
V^+ vs Gfy_{8M}



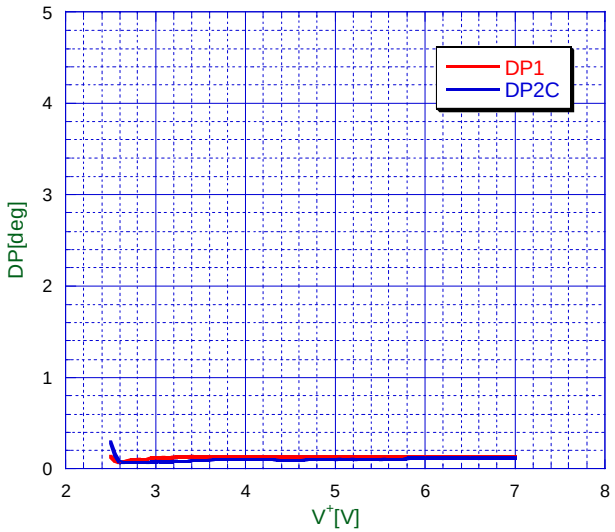
V^+ vs Gfy_{16M}



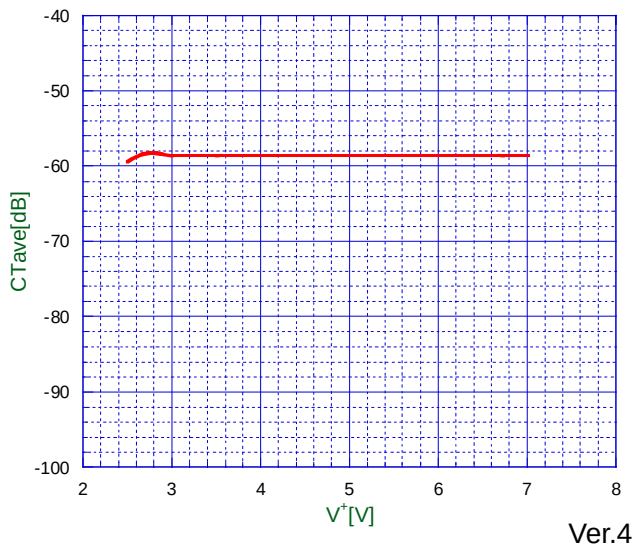
V^+ vs DG



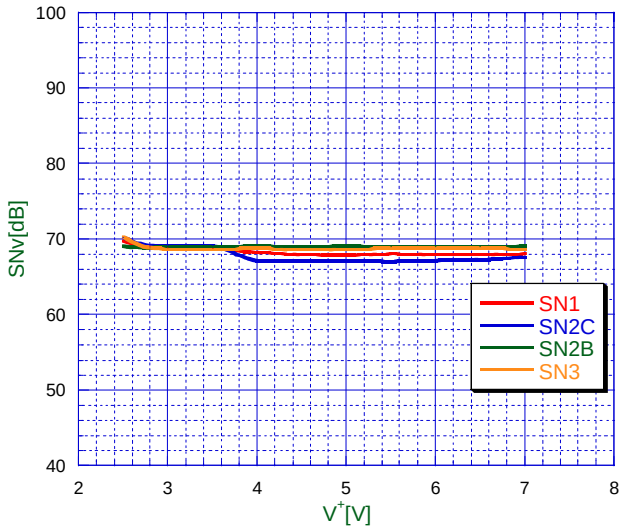
V^+ vs DP



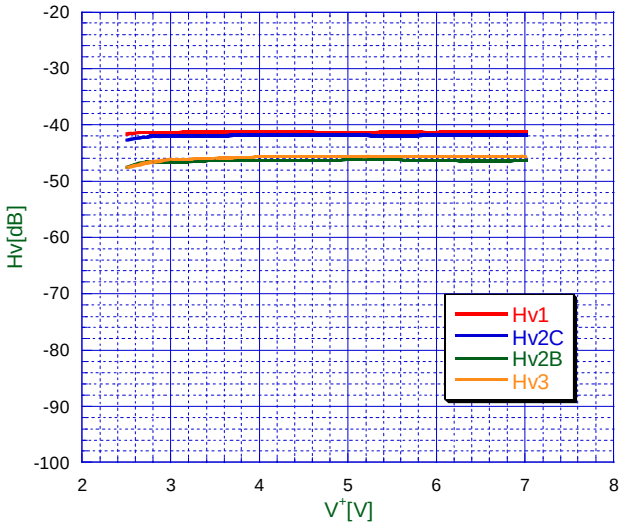
V^+ vs CTave



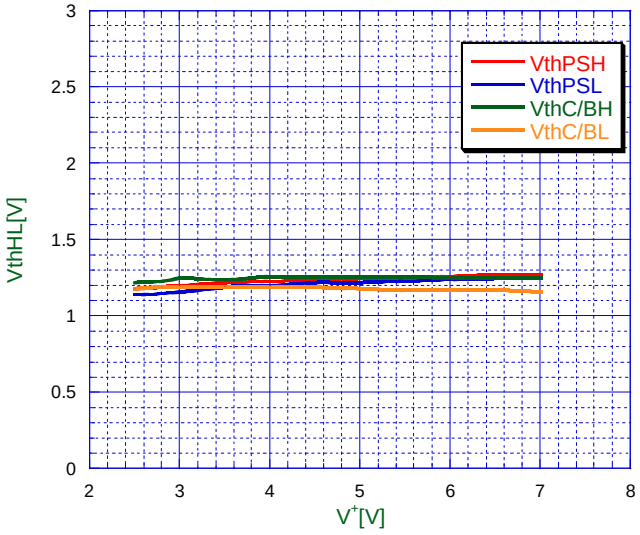
V+ vs SNv



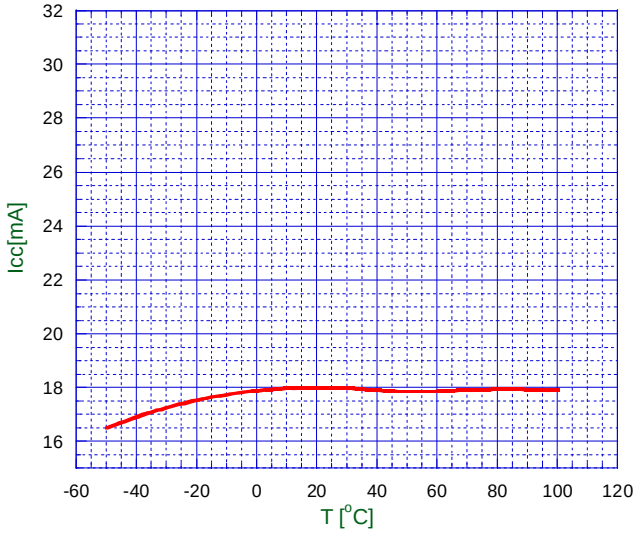
V+ vs Hv



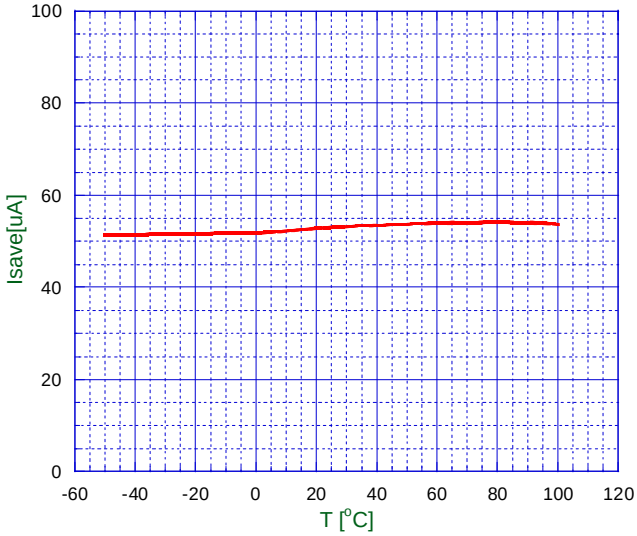
V+ vs VthHL



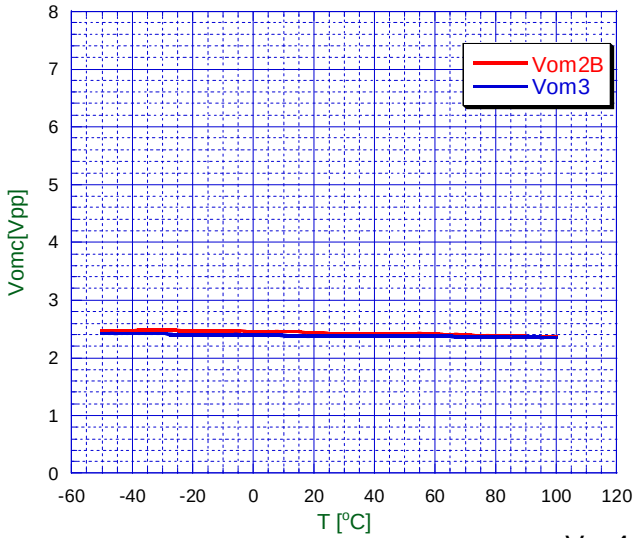
T vs Icc



T vs Isave



T vs Vomc



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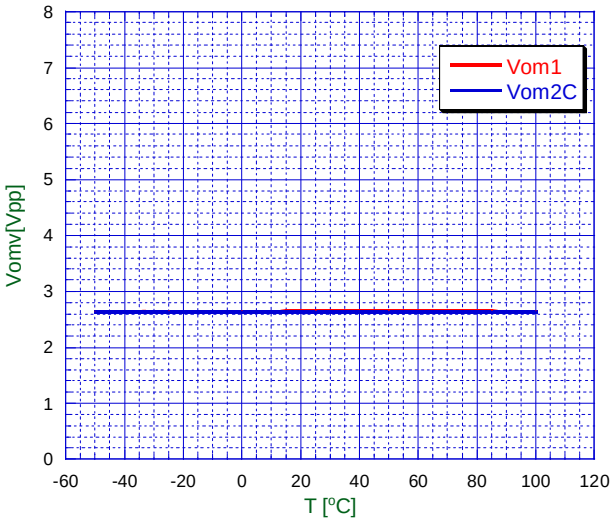
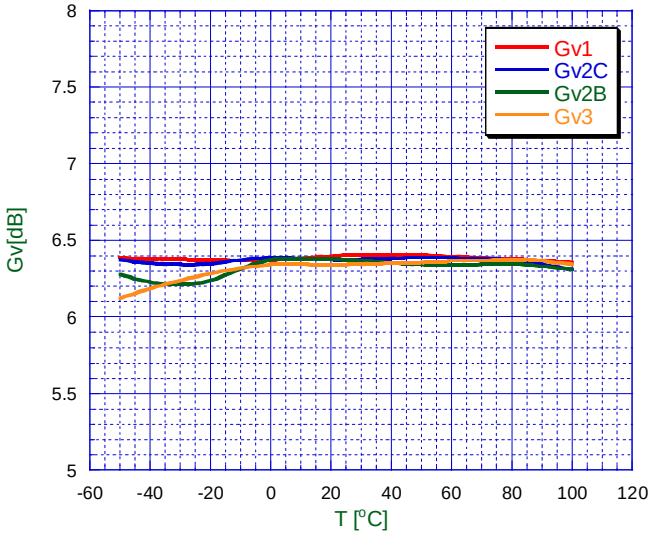
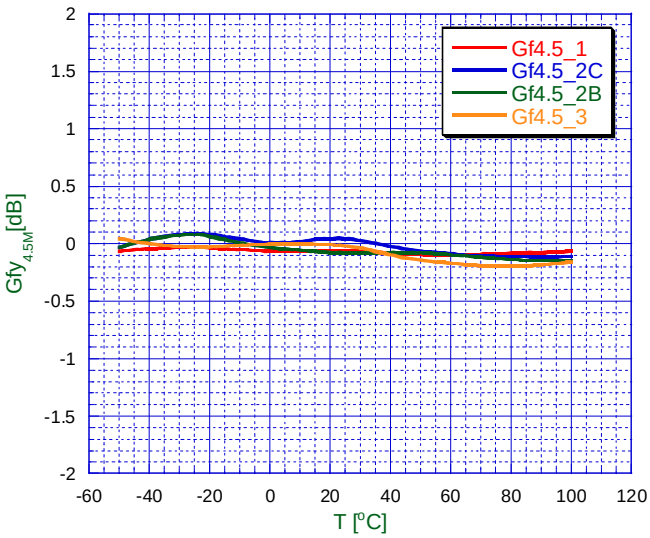
T vs Vomv



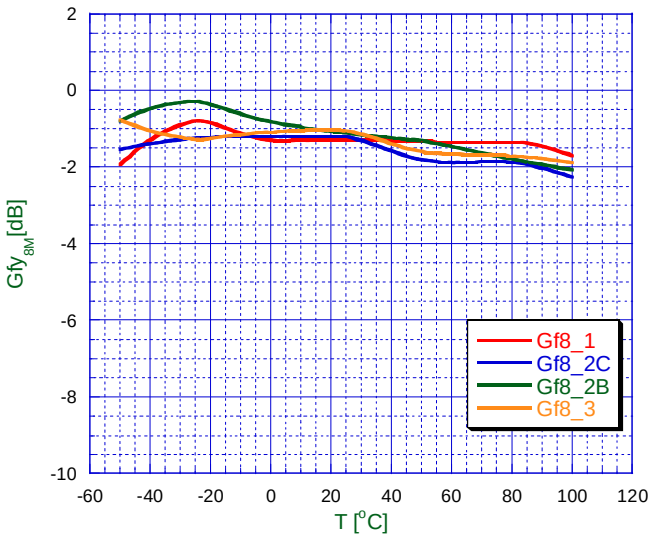
T vs Gv



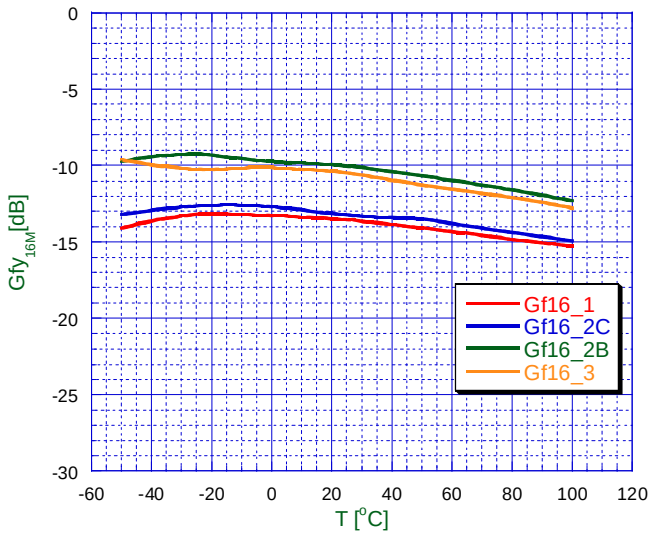
T vs $Gfy_{4.5M}$



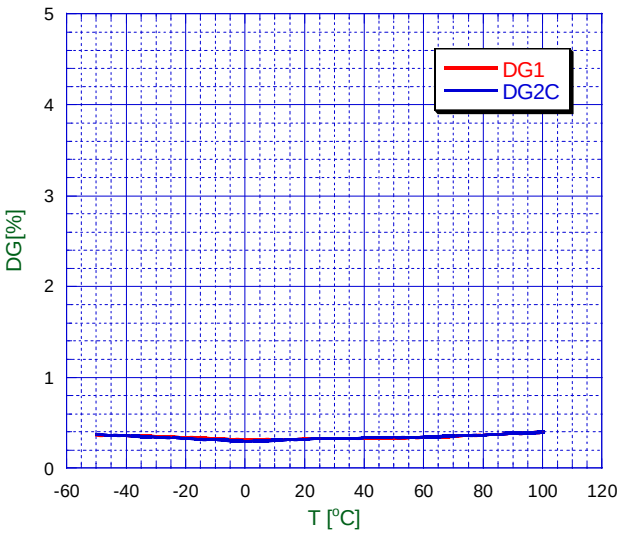
T vs Gfy_{8M}



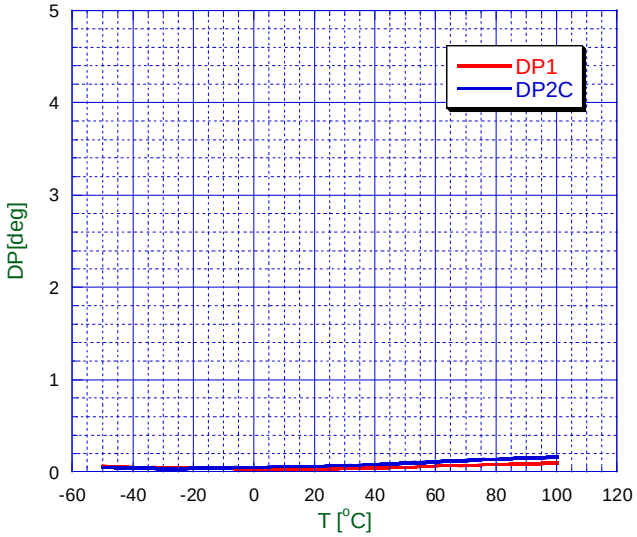
T vs Gfy_{16M}



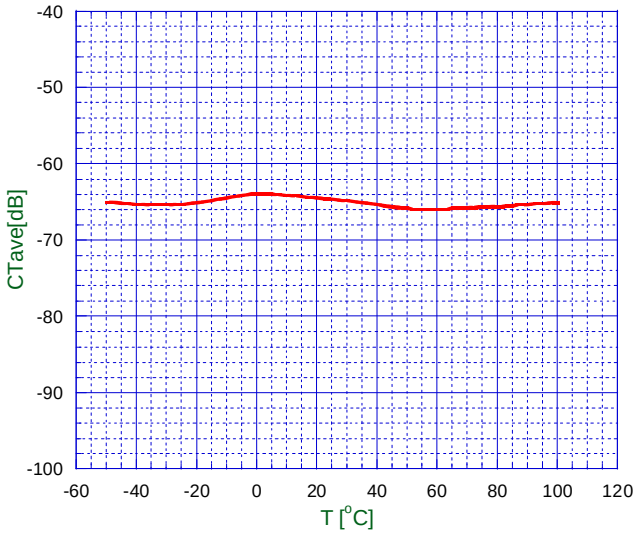
T vs DG



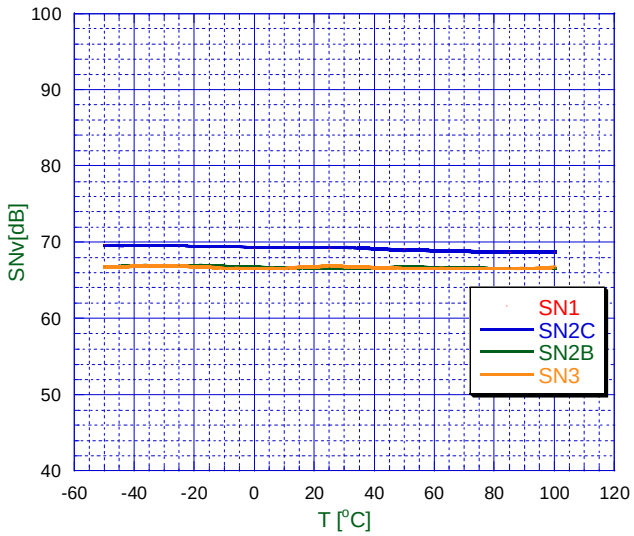
T vs DP



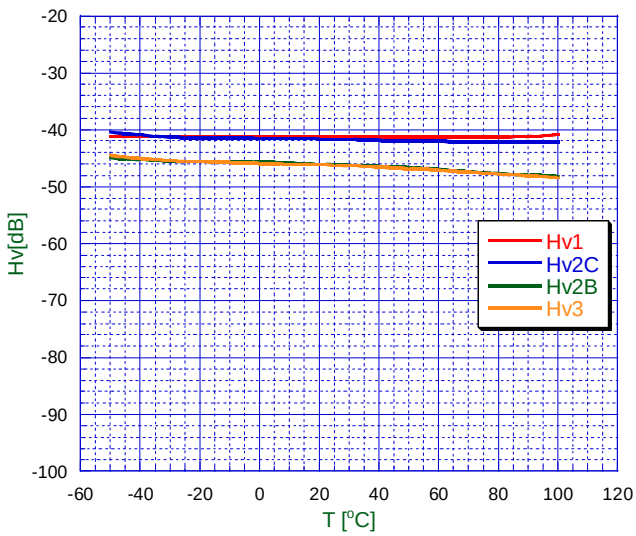
T vs CTave



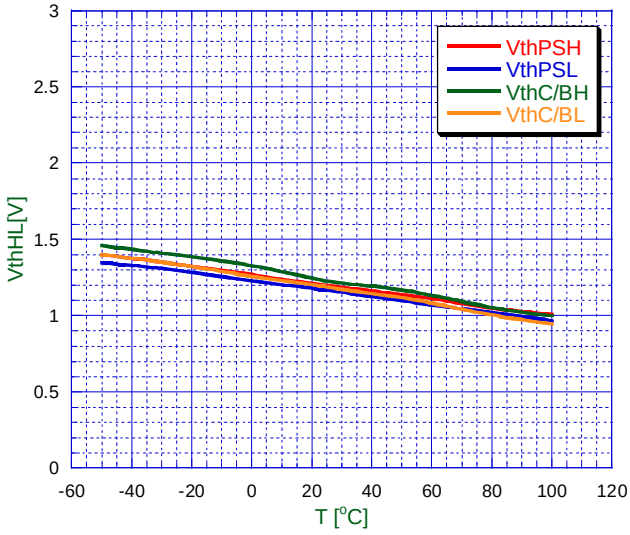
T vs SNv



T vs Hv



T vs VthHL



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Ver.4