

LOW VOLTAGE VIDEO AMPLIFIER WITH LPF

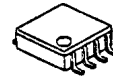
■GENERAL DESCRIPTION

The **NJM2574** is a Low Voltage Video Amplifier contained LPF circuit, 75Ω driver and internal CLAMP/BIAS SW, LPF/through SW to connect TV monitor directly.

The input composite signal.(0.5Vpp) The mute circuit with power save function is suitable for low power design.

The **NJM2574** is suitable for down sizing of Digital Steel Camera, and DVC for small package.

■PACKAGE OUTLINE

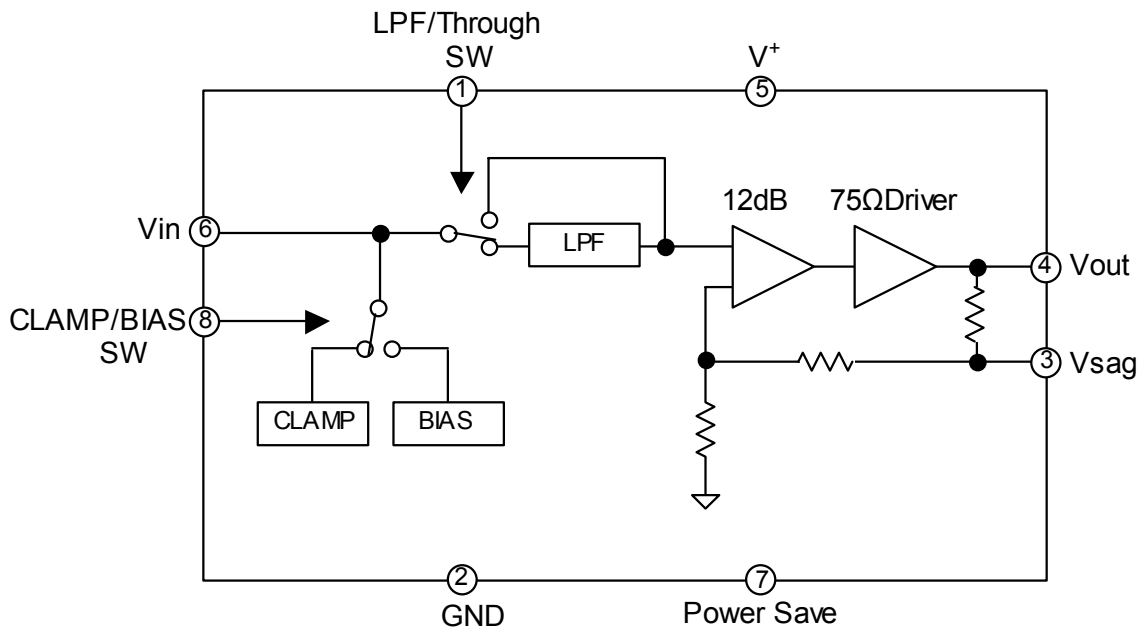


NJM2574RB1

■FEATURES

- Operating Voltage 2.8 to 5.5V
- Input Composite Signa 0.5Vpp
- Output Swing 2.4Vpp typ. at Vcc=3V,CLAMP MODE
- Internal CLAMP/BIAS SW
- Internal LPF/through SW
- Operating Current 9.0mA typ. at Vcc=3.0V
- Operating Current in Battery Saving 70uA typ. at Vcc=3.0V
- 75Ω 2 system Drive
- Bipolar Technology
- Package Outline TVSP8

■BLOCK DIAGRAM



NJM2574

■ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	7.0	V
Power Dissipation	P _D	320	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +125	°C

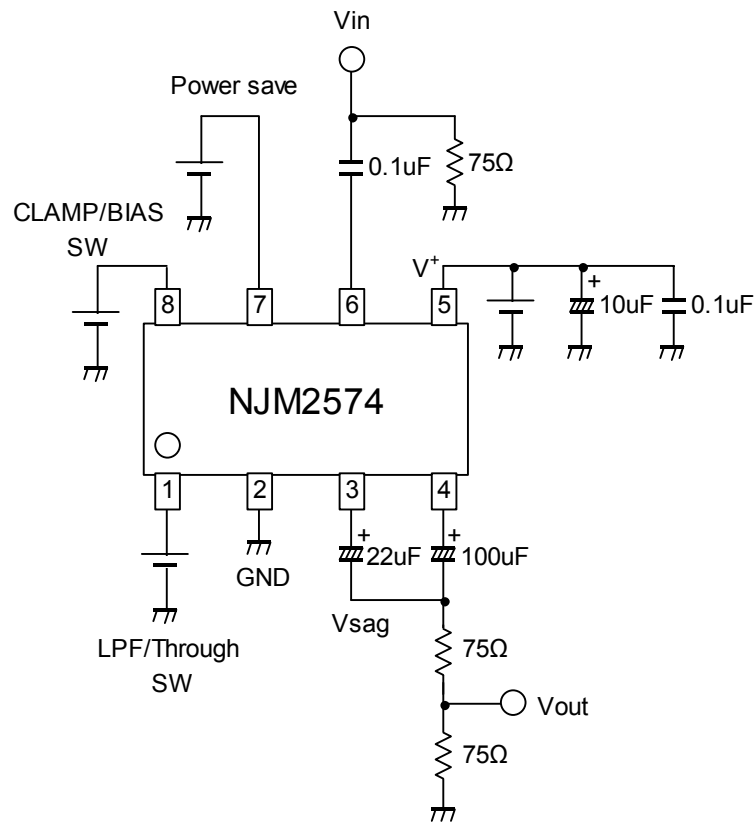
■ELECTRICAL CHARACTERISTICS (V⁺=3.0V,RL=150Ω,Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	Vopr		2.8	3.0	5.5	V
Operating Current	I _{CC}	No Signal	-	9.0	10.0	mA
Operating Current at Power Save	Isave	Power Save Mode	-	70	90	uA
Maximum Output Voltage Swing	Vomv	f=1kHz,THD=1%,CLAMP MODE LPF MODE	2.2	2.7	-	Vp-p
	Vom RGB	f=1kHz,THD=1%, BIAS MODE, through MODE	1.4	2.0	-	
Voltage Gain	Gv	Vin=100kHz,0.5Vp-p, Input Sine Signal	12.0	12.4	12.8	dB
Frequency Characteristic (Through MODE)	Gf	Vin=20MHz/100kHz,0.5Vp-p	-6.0	-3.0	-	dB
Low Pass Filter Characteristic	Gfy4.5M	Vin=4.5MHz/100kHz,0.5Vp-p	-0.95	-0.45	0.05	dB
	Gfy8M	Vin=8MHz/100kHz,0.5Vp-p	-	-3.0	-	
	Gfy23.5M	Vin=23.5MHz/100kHz,0.5Vp-p	-	-23	-17	
Differential Gain	DG	Vin=0.5Vp-p, Input 10step Video Signal	-	0.5	-	%
Differential Phase	DP	Vin=0.5Vp-p, Input 10step Video Signal	-	0.5	-	deg
S/N	SNv	Vin=0.5Vp-p, 100% White Video Signal, R _L =75Ω Band Width 100kHz to 6MHz	-	+60	-	dB
2nd. Distortion	Hv	Vin=0.5Vp-p, 3.58MHz, Sine Video Signal, R _L =75Ω,	-	-60	-	dB
SW Change Voltage High Level	VthH		1.8	-	V ⁺	V
SW Change Voltage Low Level	VthL		0	-	0.3	

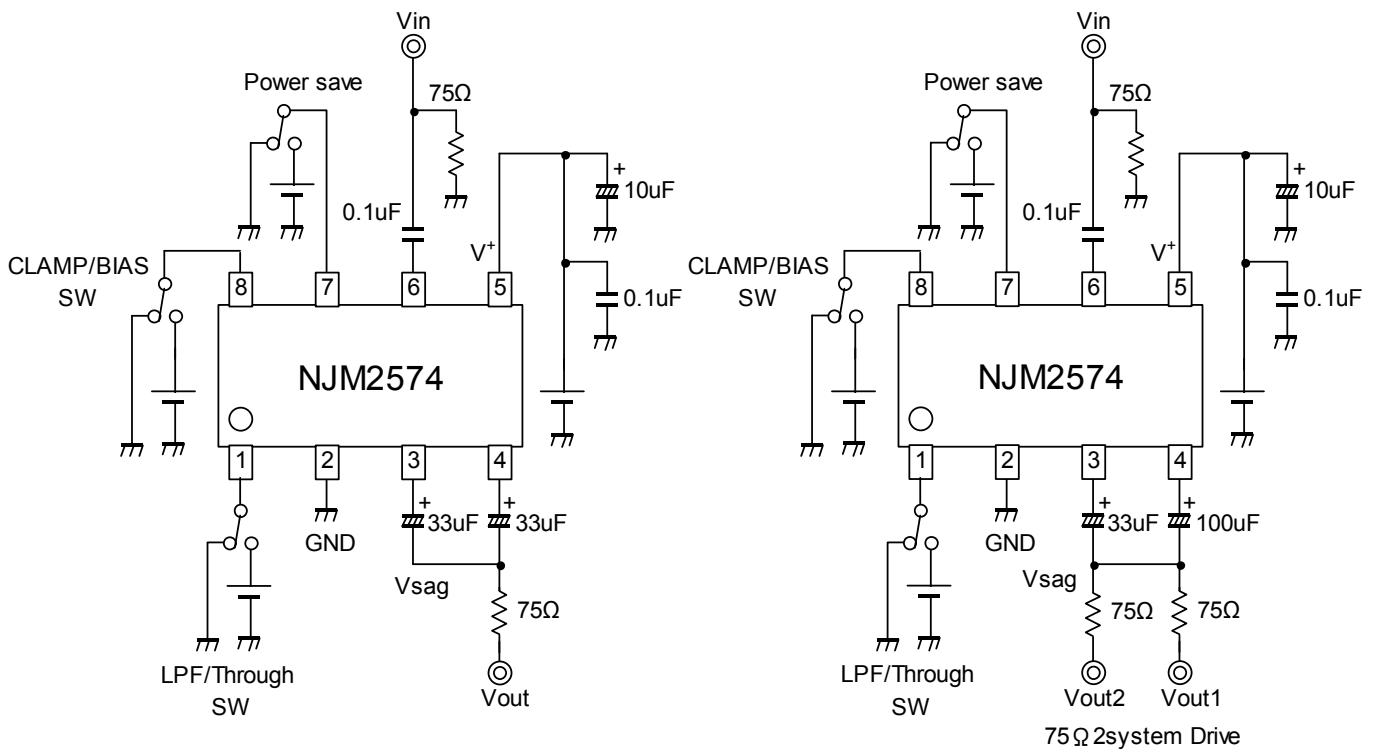
■ CONTROL TERMINAL

PARAMETER	STATUS	NOTE
Power Save(7pin)	H	Power Save : OFF
	L	Power Save : ON
	OPEN	Power Save : ON
LPF/Through SW(1pin)	H	LPF MODE
	L	Through MODE
	OPEN	Through MODE

TEST CIRCUIT



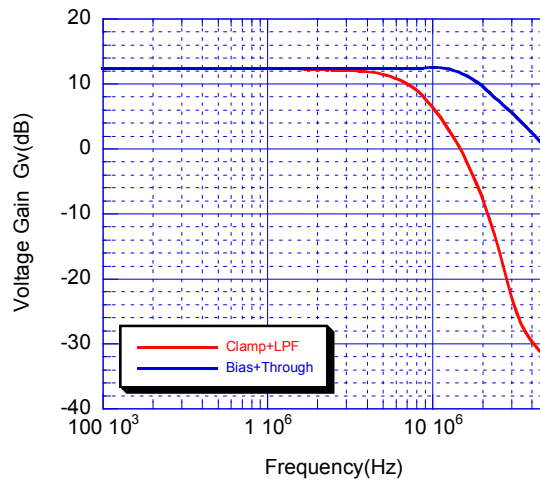
APPLICATION CIRCUIT



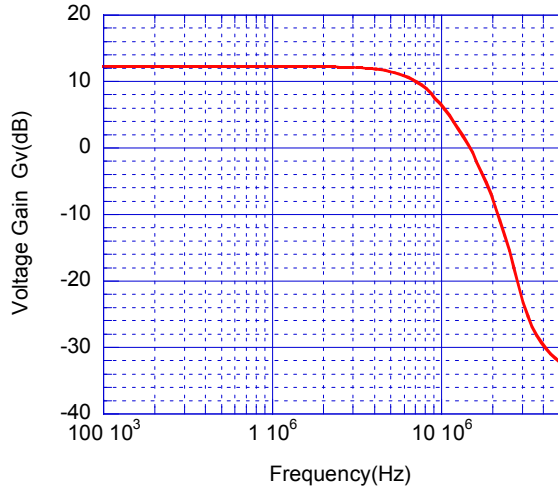
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■ TYPICAL CHARACTERISTICS

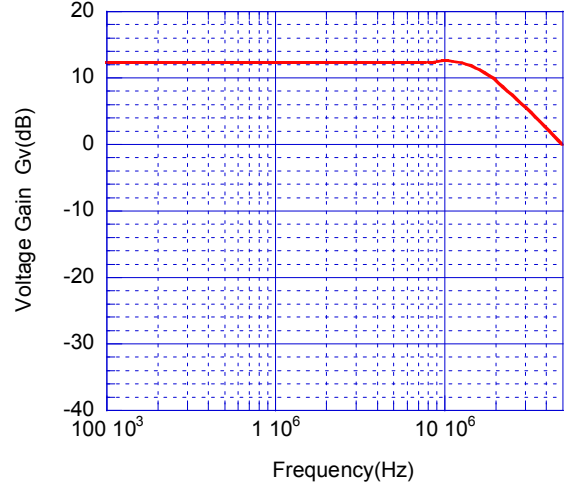
Voltage Gain vs. Frequency



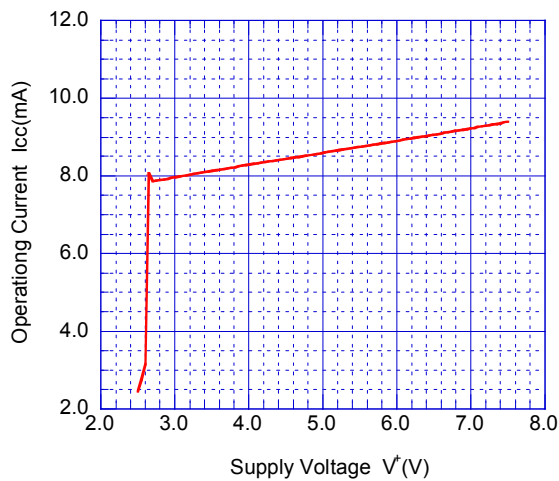
Voltage Gain vs. Frequency
(Clamp+LPF Input)



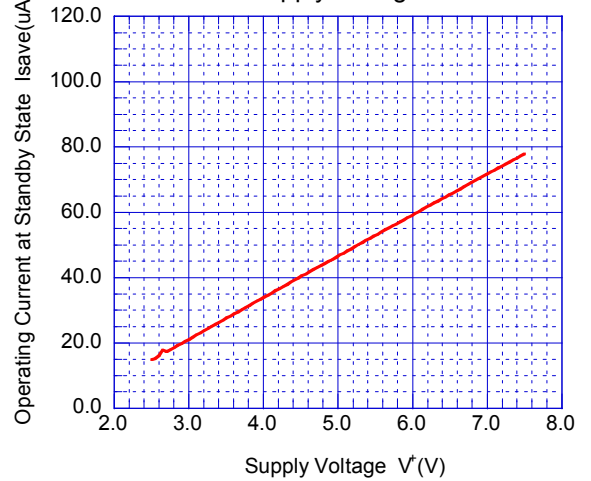
Voltage Gain vs. Frequency
(Bias+Through Input)



Operating Current vs. Supply Voltage

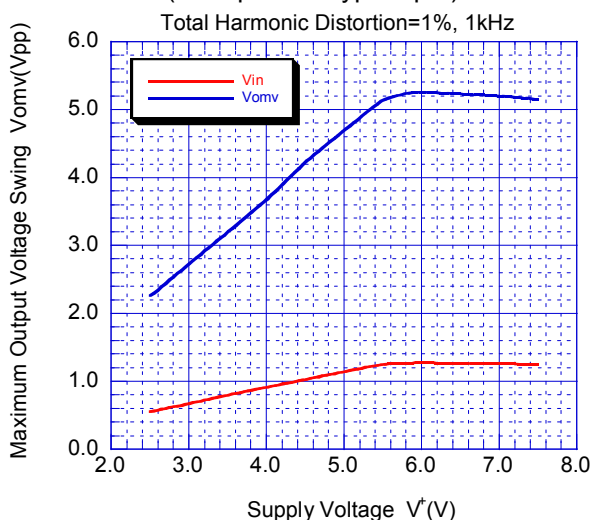


Operating Current at Standby State
vs. Supply Voltage

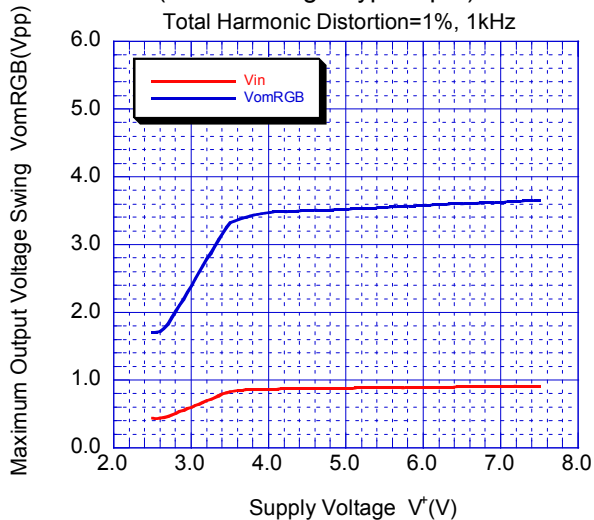


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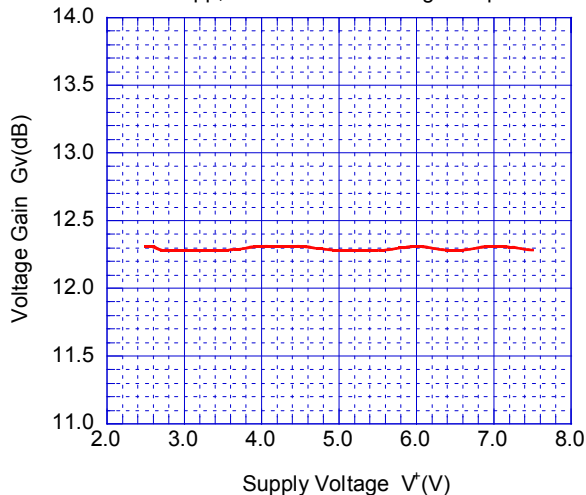
Maximum Output Voltage Swing vs. Supply Voltage
(Clamp+LPF Type Input)



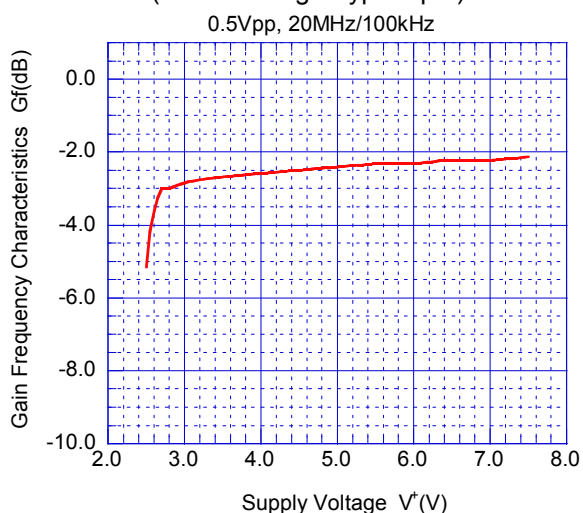
Maximum Output Voltage Swing vs. Supply Voltage
(Bias+Through Type Input)



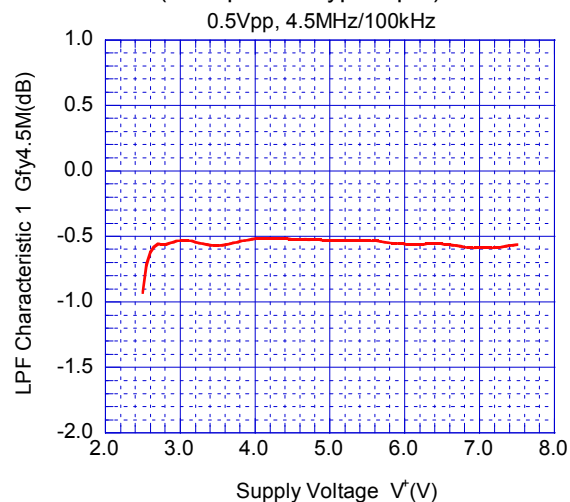
Voltage Gain vs. Supply Voltage
0.5Vpp, 100kHz sinewave signal input



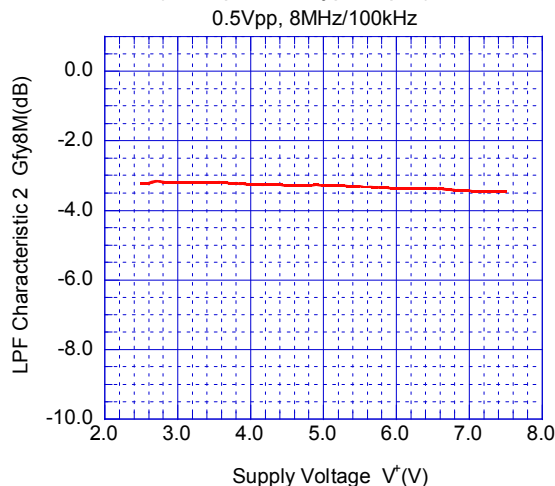
Gain Frequency Characteristics vs. Supply Voltage
(Bias+Through Type Input)



Low Pass Filter Characteristic 1 vs. Supply Voltage
(Clamp+LPF Type Input)



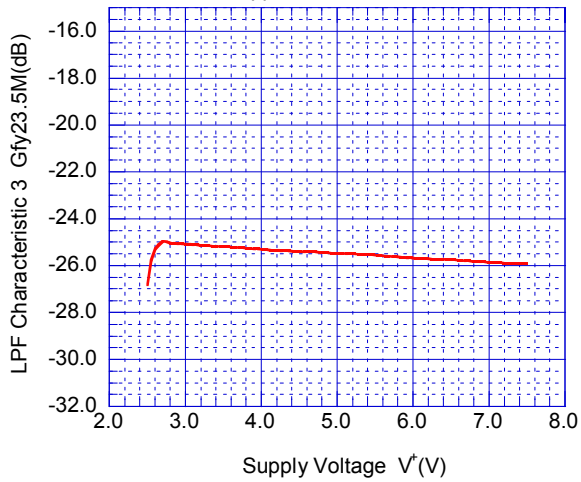
Low Pass Filter Characteristic 2 vs. Supply Voltage
(Clamp+LPF Type Input)



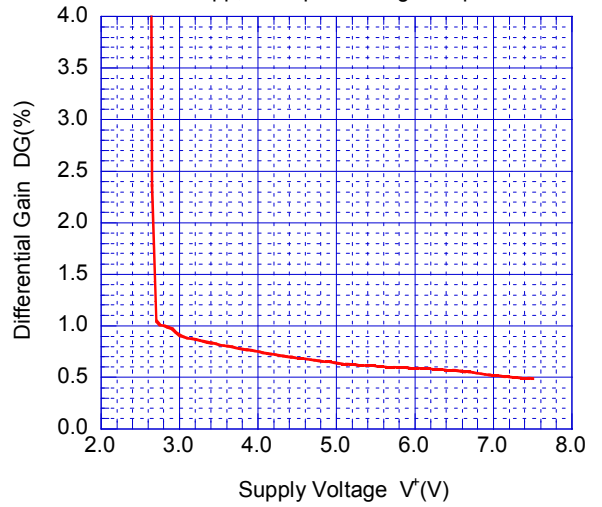
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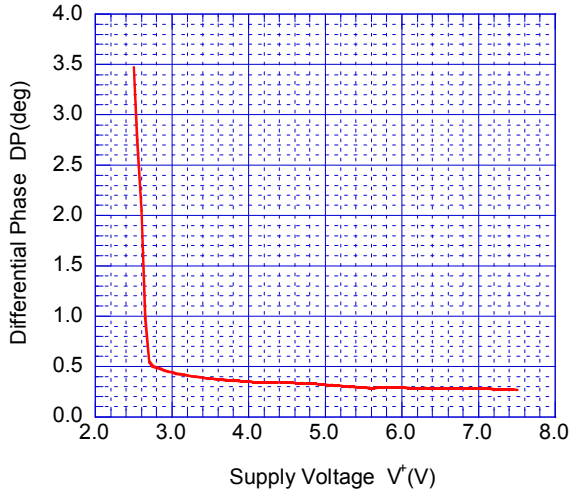
Low Pass Filter Characteristic 3 vs. Supply Voltage
(Clamp+LPF Type Input)
0.5Vpp, 23.5MHz/100kHz



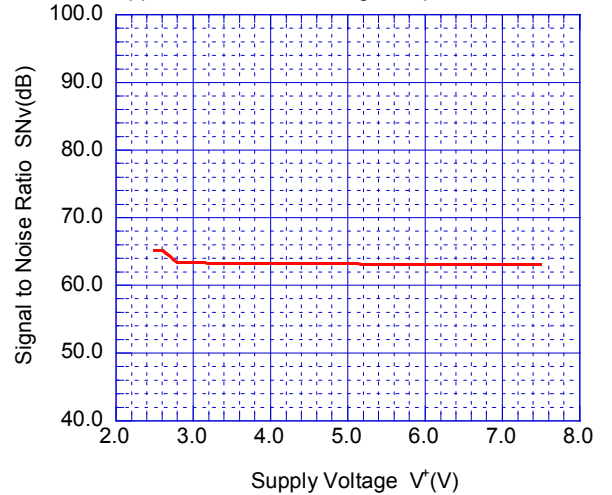
Differential Gain vs. Supply Voltage
0.5Vpp, 10step video signal input



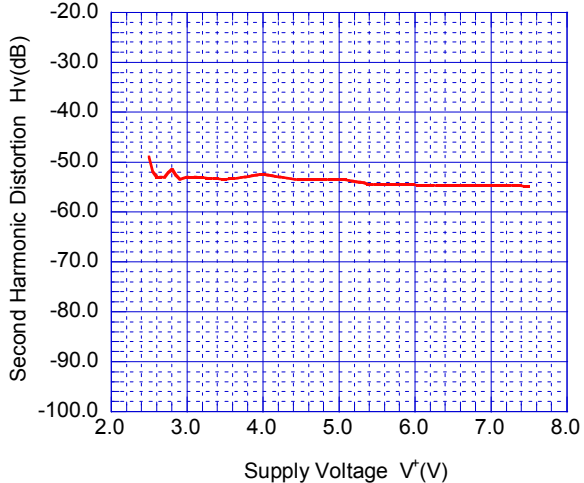
Differential Phase vs. Supply Voltage
0.5Vpp, 10step video signal input



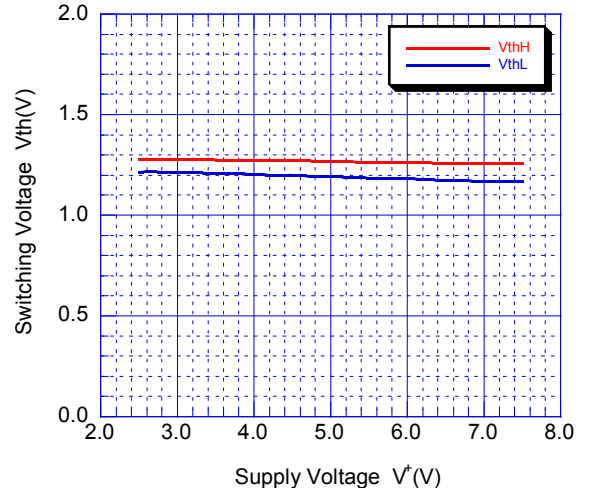
Signal to Noise Ratio vs. Supply Voltage
0.5Vpp, 100% white video signal input, 100kHz-6MHz



Second Harmonic Distortion vs. Supply Voltage
0.5Vpp, 3.58MHz sinewave signal input

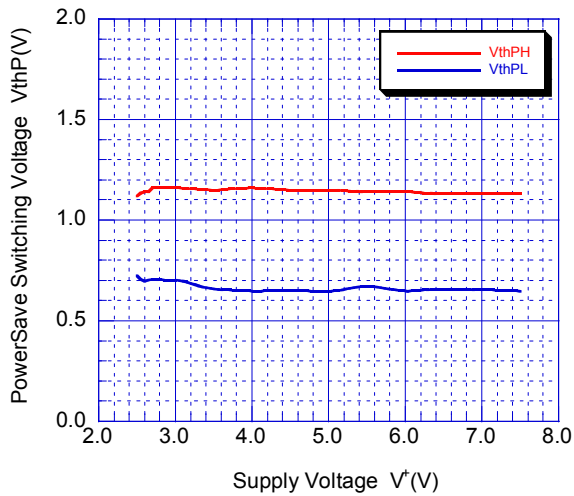


Switching Voltage vs. Supply Voltage

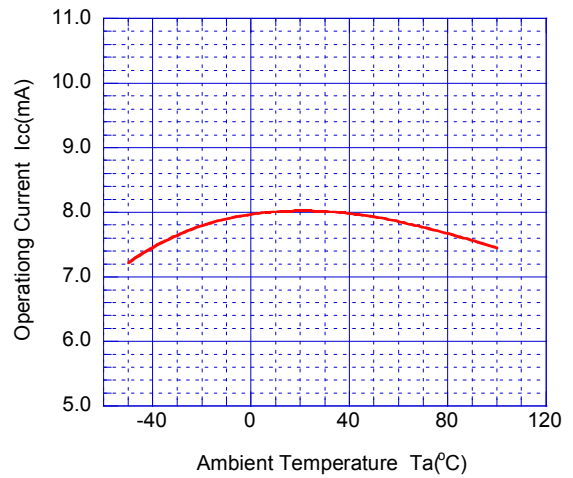


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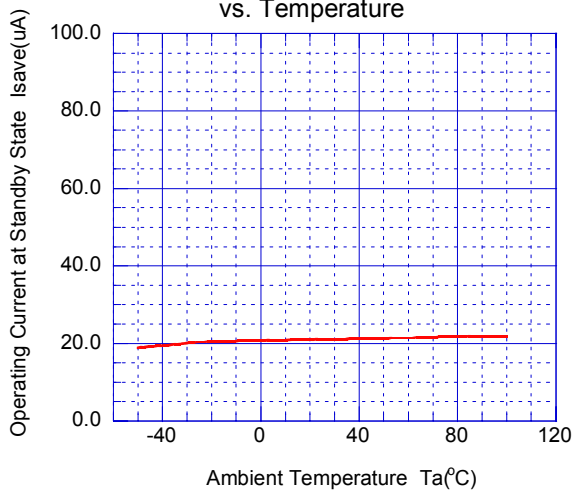
PowerSave Switching Voltage vs. Supply Voltage



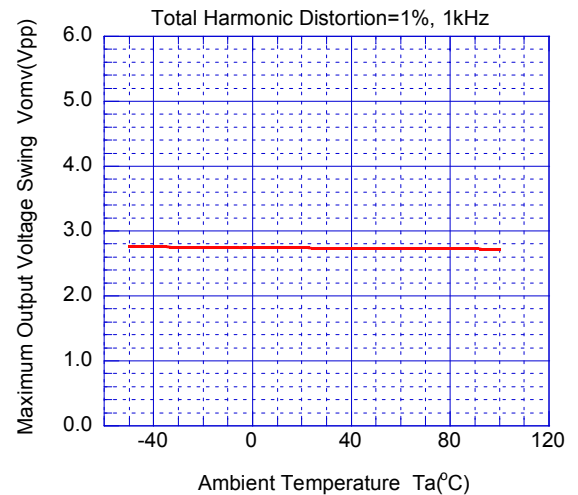
Operating Current vs. Temperature



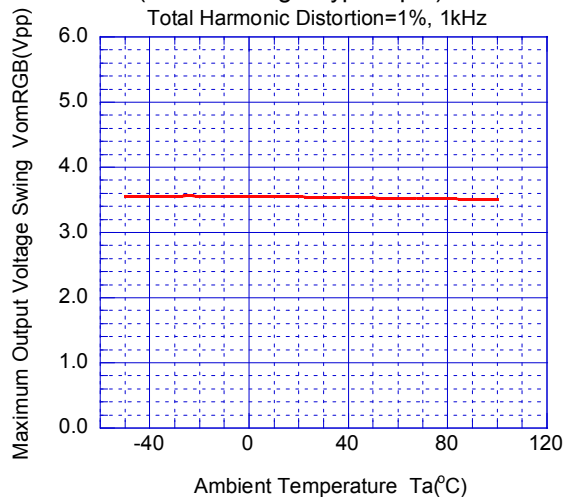
Operating Current at Standby State vs. Temperature



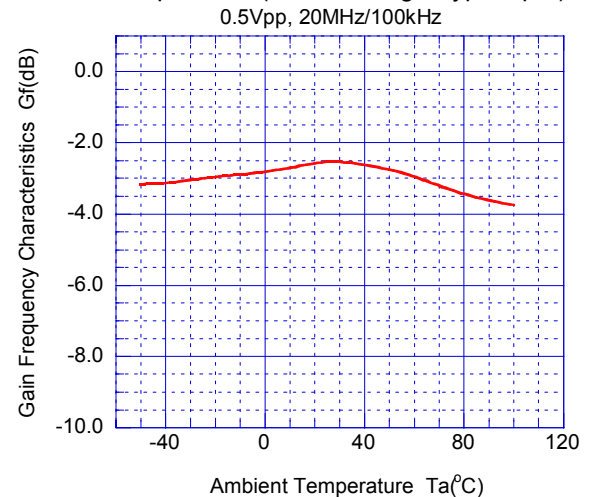
Maximum Output Voltage Swing vs. Temperature (Clamp+LPF Type Input)



Maximum Output Voltage Swing vs. Temperature (Bias+Through Type Input)



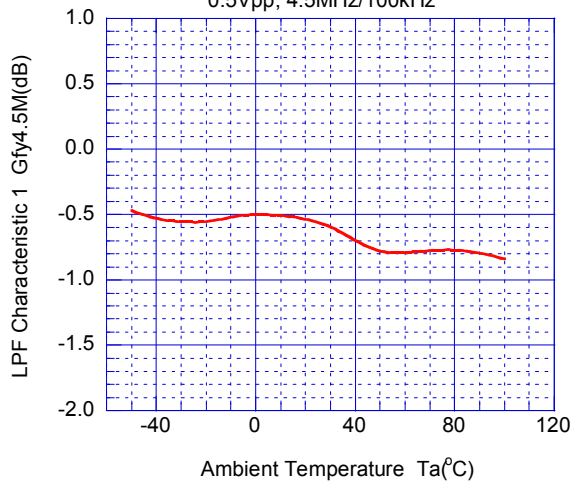
Gain Frequency Characteristics vs. Temperature (Bias+Through Type Input)



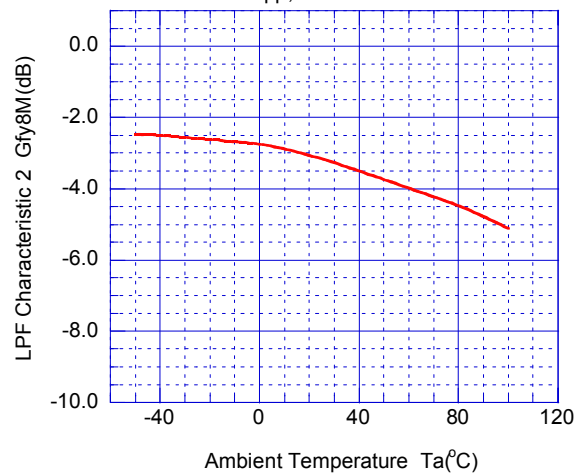
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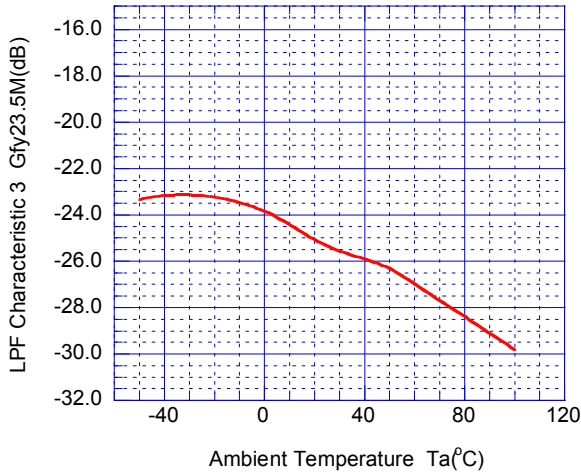
Low Pass Filter Characteristic 1 vs. Temperature
(Clamp+LPF Type Input)
0.5Vpp, 4.5MHz/100kHz



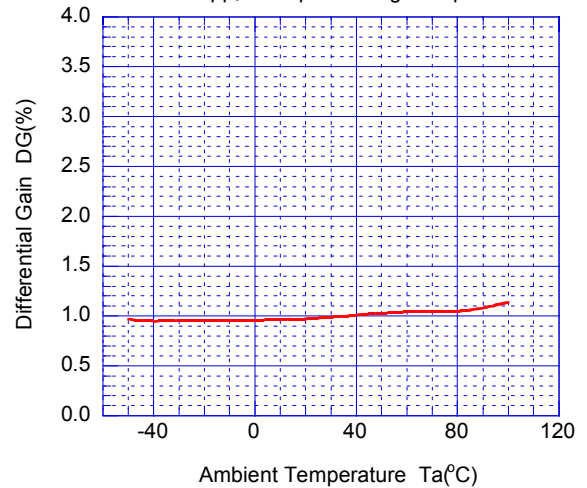
Low Pass Filter Characteristic 2 vs. Temperature
(Clamp+LPF Type Input)
0.5Vpp, 8MHz/100kHz



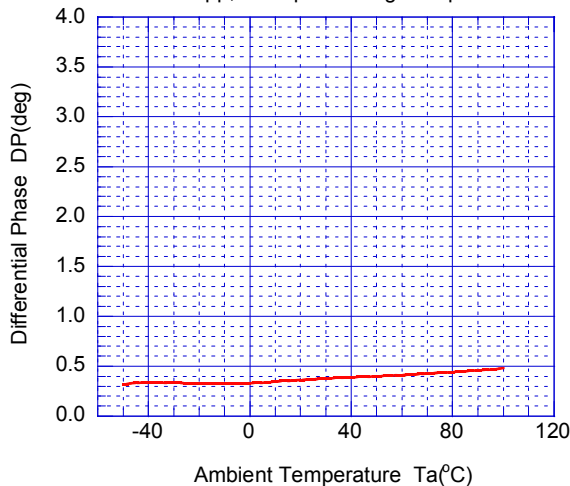
Low Pass Filter Characteristic 3 vs. Temperature
(Clamp+LPF Type Input)
0.5Vpp, 23.5MHz/100kHz



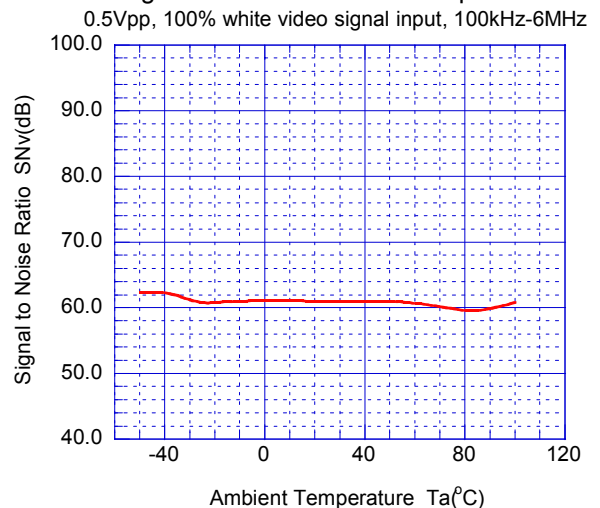
Differential Gain vs. Temperature
0.5Vpp, 10step video signal input



Differential Phase vs. Temperature
0.5Vpp, 10step video signal input

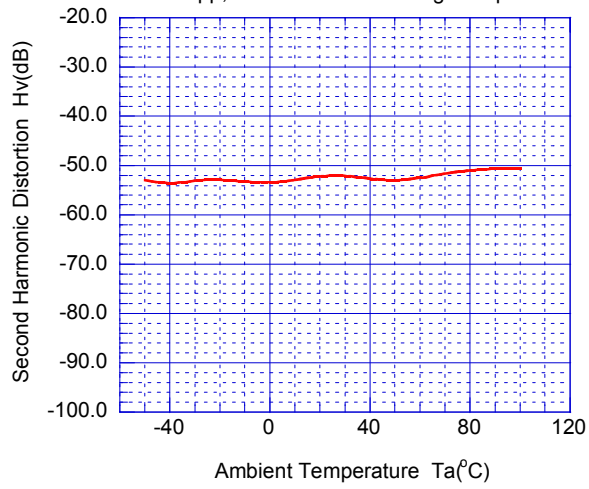


Signal to Noise Ratio vs. Temperature

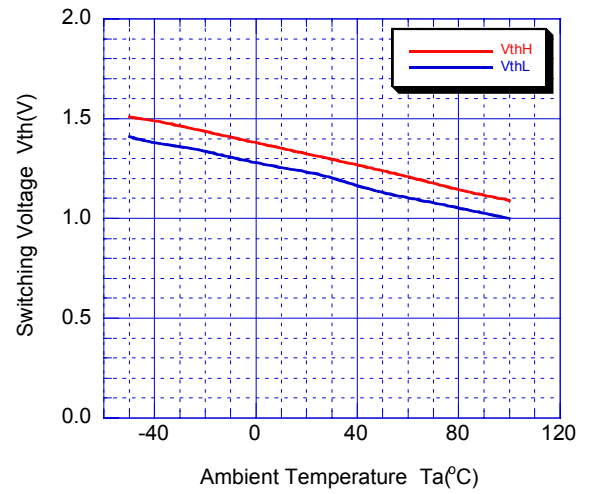


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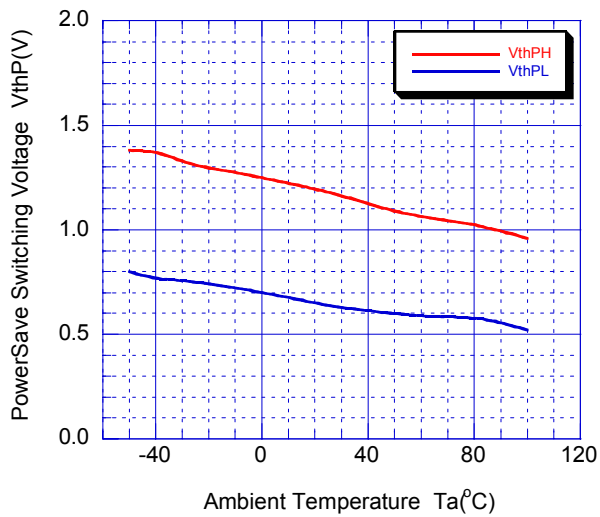
Second Harmonic Distortion vs. Temperature
0.5Vpp, 3.58MHz sinewave signal input



Switching Voltage vs. Temperature



PowerSave Switching Voltage vs. Temperature



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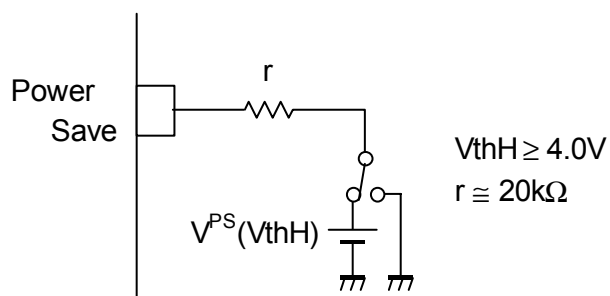
■ APPLICATION

When you use a power save terminal more than by 4.0V, please put resistance of about 20kΩ into a power save terminal.

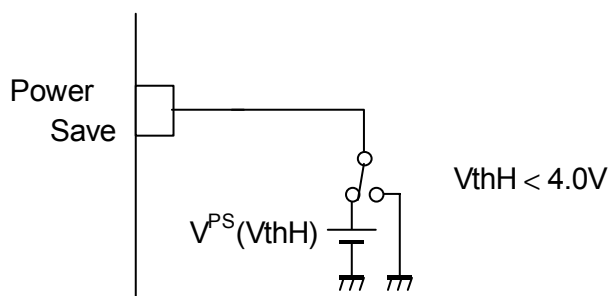
In addition, power save terminal voltage (V_{thH}) -- in the case of below 4.0V, resistance is not required

Example)

● PS(V_{thH}) \geq 4.0V



● PS(V_{thH}) < 4.0V



[CAUTION]
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