

## LOW VOLTAGE VIDEO AMPLIFIER WITH LPF

### ■GENERAL DESCRIPTION

The **NJM2571** is a Low Voltage Video Amplifier contained LPF circuit. Internal 75Ω driver is easy to connect TV monitor directly.

The **NJM2571** features low power and small package, and is suitable for low power design on downsizing of DSC and DVC.

### ■PACKAGE OUTLINE

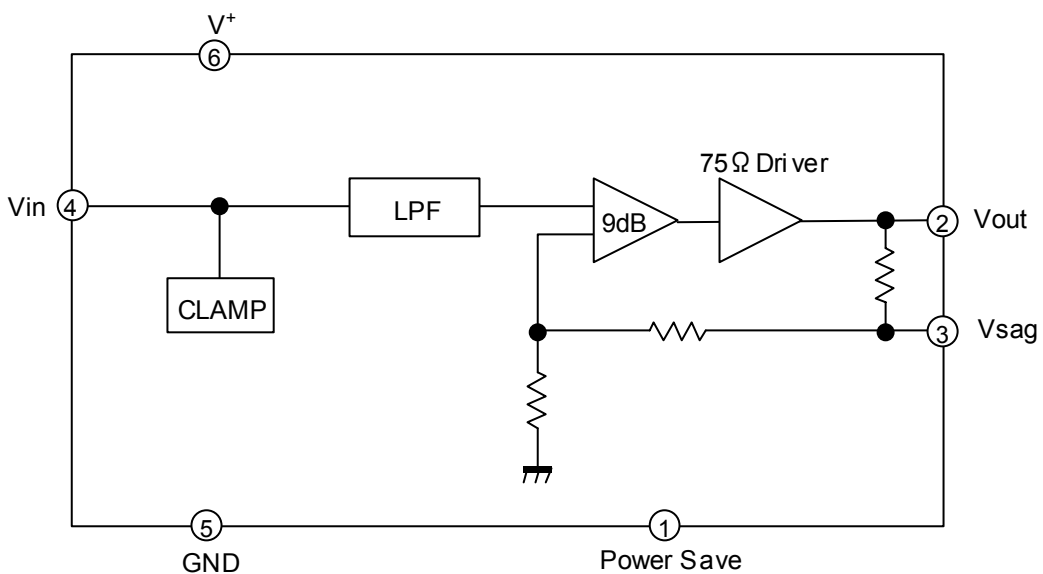


**NJM2571F1**

### ■FEATURES

- Operating Voltage                    2.8 to 5.5V
- 9dB amplifier
- Internal LPF                            -35dB at 19MHz typ.
- Internal 75Ω Driver Circuit (2-system drive)
- Power Save Circuit
- Bipolar Technology
- Package Outline                        MTP6

### ■BLOCK DIAGRAM



# NJM2571

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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup>	7.0	V
Power Dissipation	P <sub>D</sub>	200	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +125	°C

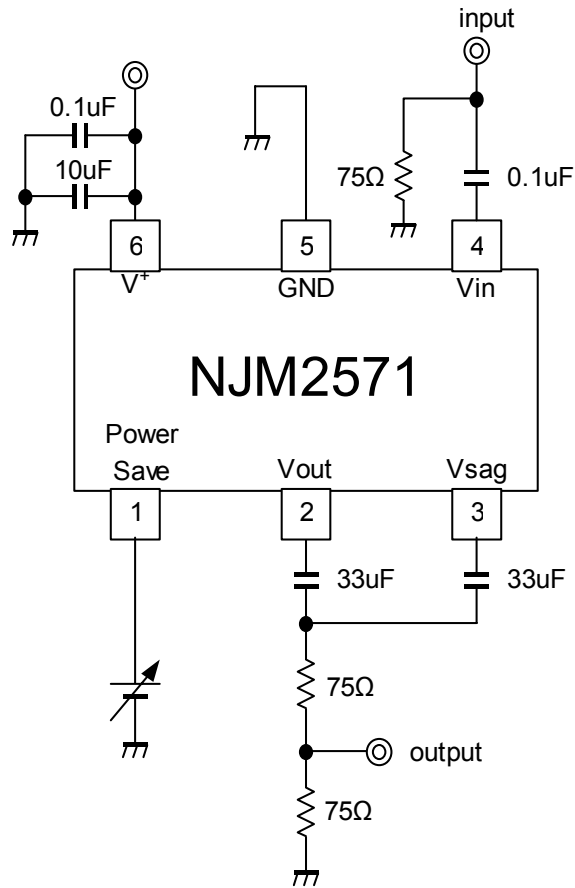
## ■ELECTRICAL CHARACTERISTICS (V<sup>+</sup>=3.0V, R<sub>L</sub>=150Ω, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I <sub>CC</sub>	No Signal	-	8.0	12.0	mA
Operating Current at Power Save	I <sub>save</sub>	Power Save Mode	-	30	50	μA
Maximum Output Voltage Swing	V <sub>om</sub>	f=100kHz, THD=1%	2.2	2.5	-	Vp-p
Voltage Gain	G <sub>v</sub>	V <sub>in</sub> =100kHz, 1.0Vp-p, Input Sine Signal	8.5	9.0	9.5	dB
Low Pass Filter Characteristic	G <sub>fy</sub> 4.5M	V <sub>in</sub> =4.5MHz/100kHz, 0.7Vp-p	-0.5	0	0.5	dB
	G <sub>fy</sub> 19M	V <sub>in</sub> =19MHz/100kHz, 0.7Vp-p	-	-35	-25	
Differential Gain	DG	V <sub>in</sub> =1.0Vp-p, Input 10step Video Signal	-	0.5	-	%
Differential Phase	DP	V <sub>in</sub> =1.0Vp-p, Input 10step Video Signal	-	0.5	-	deg
S/N Ratio	SN <sub>v</sub>	V <sub>in</sub> =1.0Vp-p, R <sub>L</sub> =75Ω 100% White Video Signal	-	+60	-	dB
2nd. Distortion	H <sub>v</sub>	V <sub>in</sub> =1.0Vp-p, 3.58MHz, Sine Video Signal, R <sub>L</sub> =75Ω	-	-50	-	dB
SW Change Voltage High Level	V <sub>thPH</sub>	Active	1.8	-	V <sup>+</sup>	V
SW Change Voltage Low Level	V <sub>thPL</sub>	Non-active	0	-	0.3	

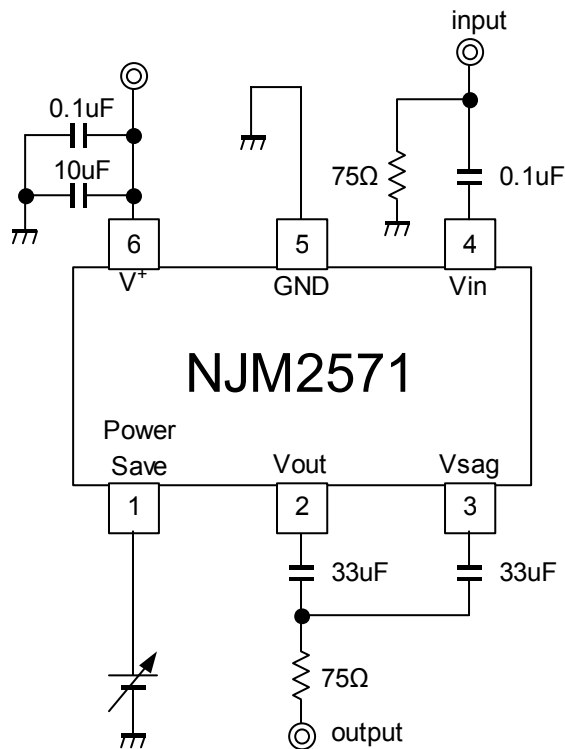
## ■CONTROL TERMINAL

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

## TEST CIRCUIT



## APPLICATION CIRCUIT



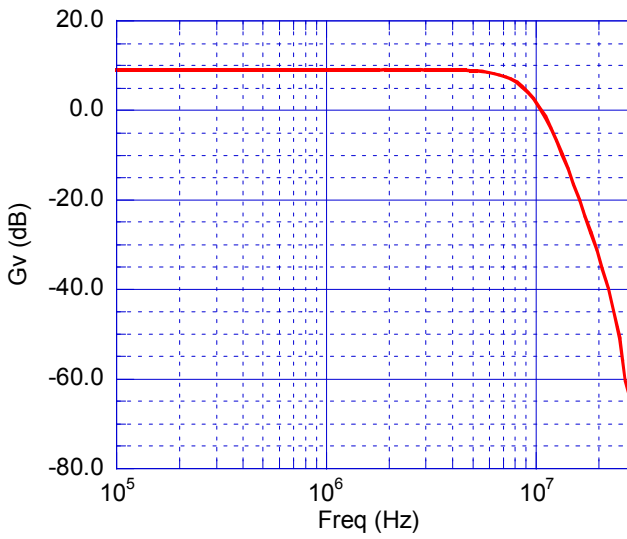
# NJM2571

## ■ TERMINAL FUNCTION

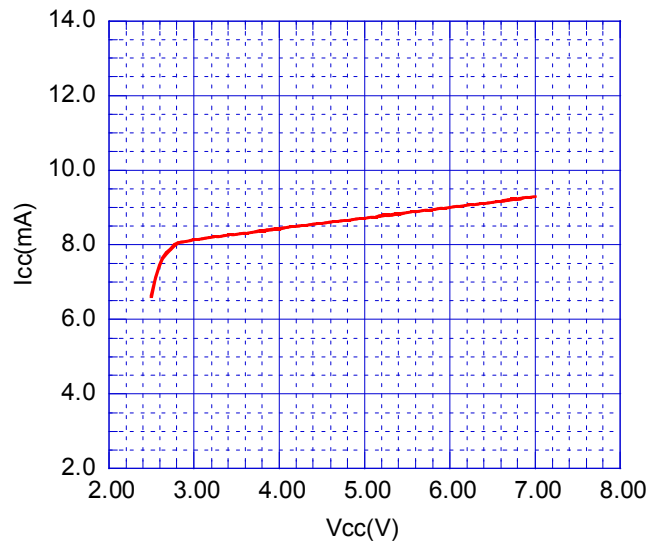
PIN No.	PIN NAME	DC VOLTAGE	EQUIVALENT CIRCUIT
1	Power Save	-	
2	Vout	0.26V	
3	Vsag	-	
4	Vin	1.10V	
5	GND	-	
6	V+	3V	

## TYPICAL CHARACTERISTICS

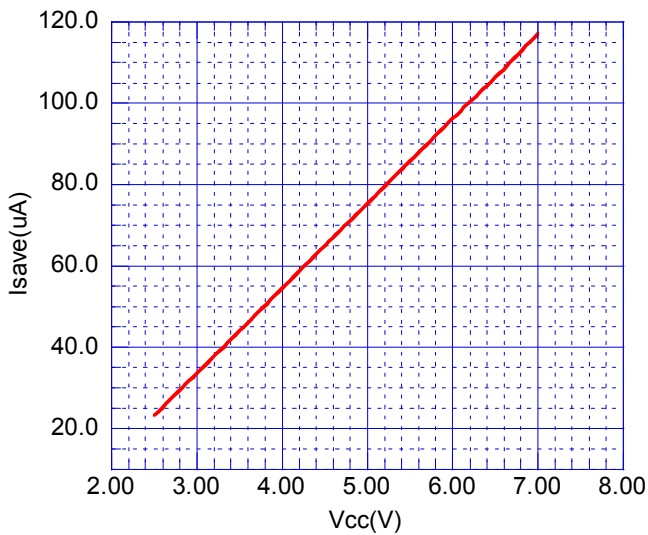
Voltage Gain vs. Frequency



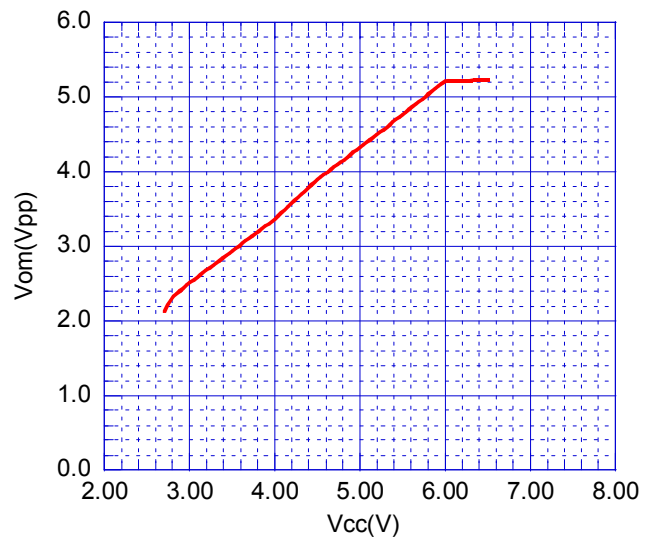
Operating Current vs. Supply Voltage



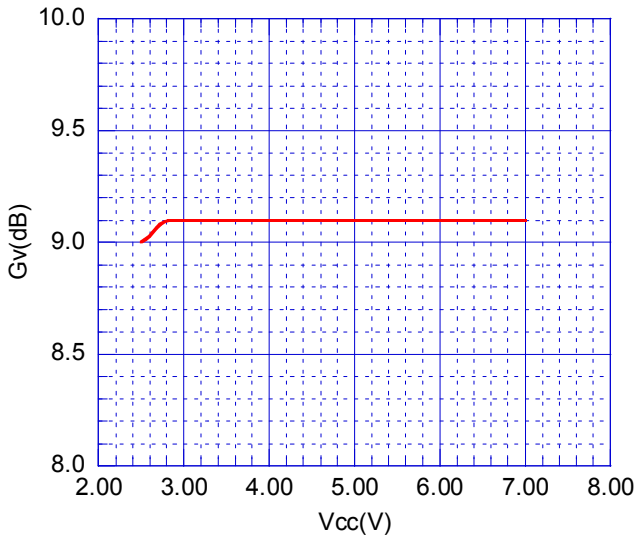
Operating Current at Standby State vs. Supply Voltage



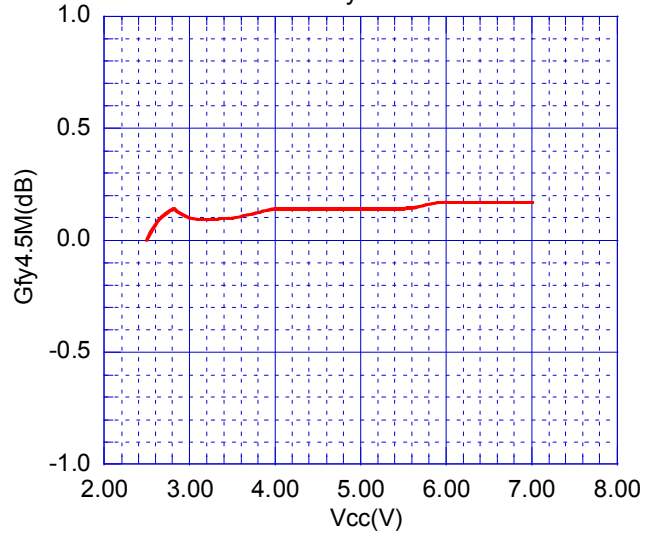
Maxim Output Voltage Swing vs. Supply Voltage



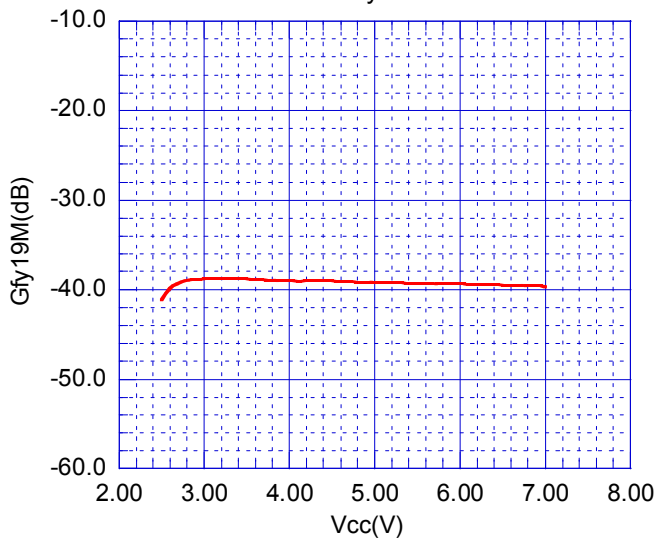
Voltage Gain vs. Supply Voltage



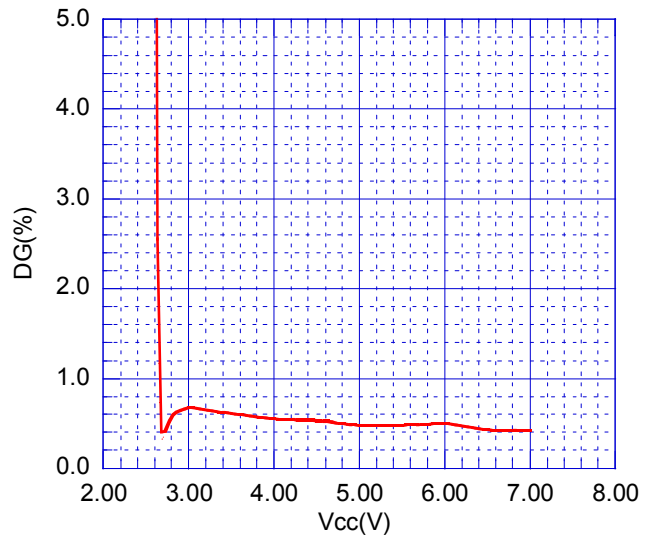
Low Pass Filter Characteristics vs. Supply Voltage  
Gfy4.5M



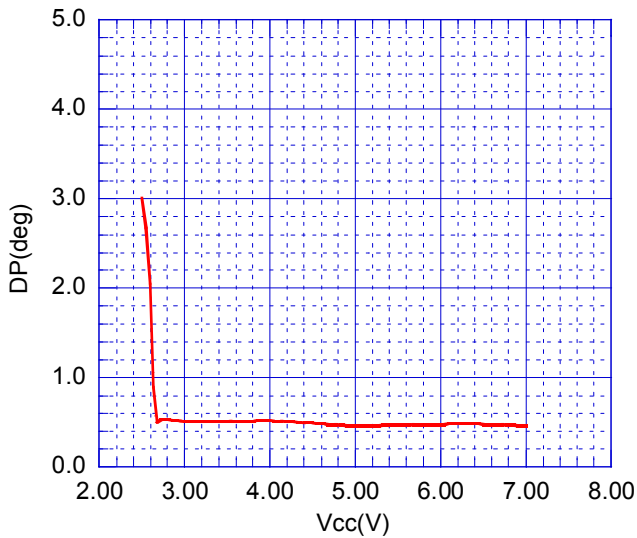
Low Pass Filter Characteristics vs. Supply Voltage  
Gfy19M



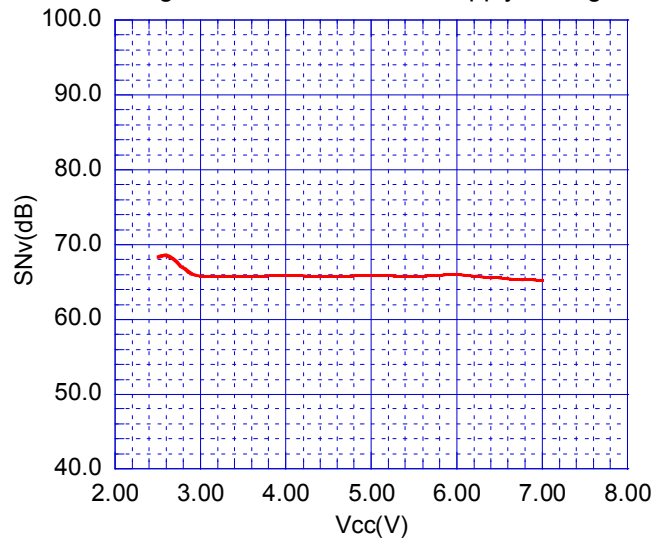
Differential Gain vs. Supply Voltage



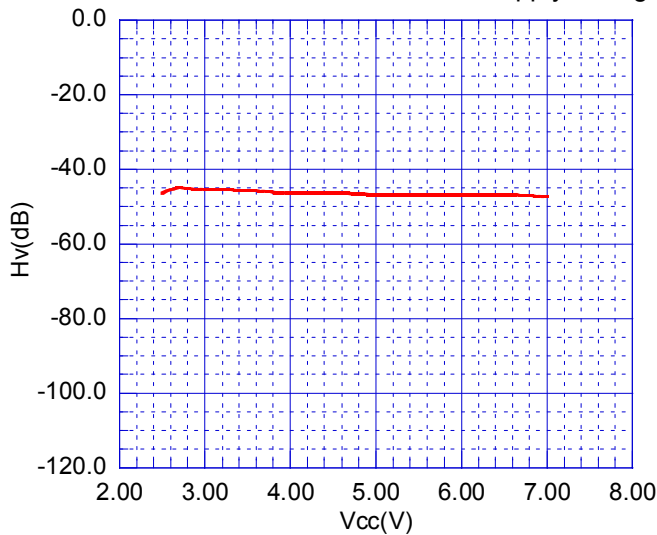
Differential Phase vs. Supply Voltage



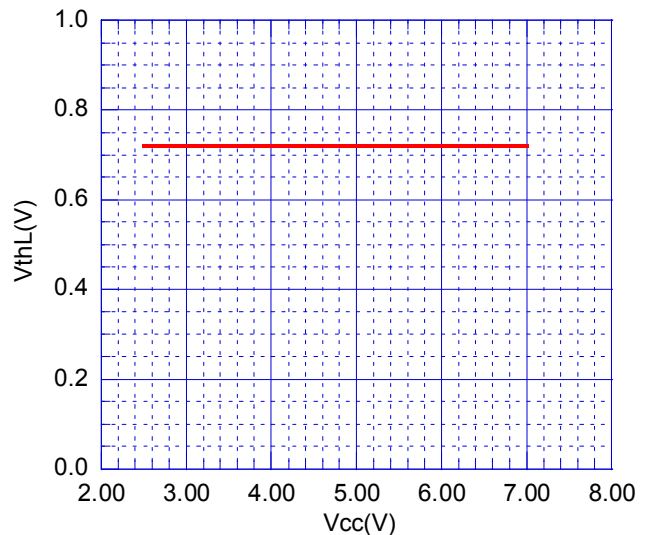
Signal to Noise Ratio vs. Supply Voltage



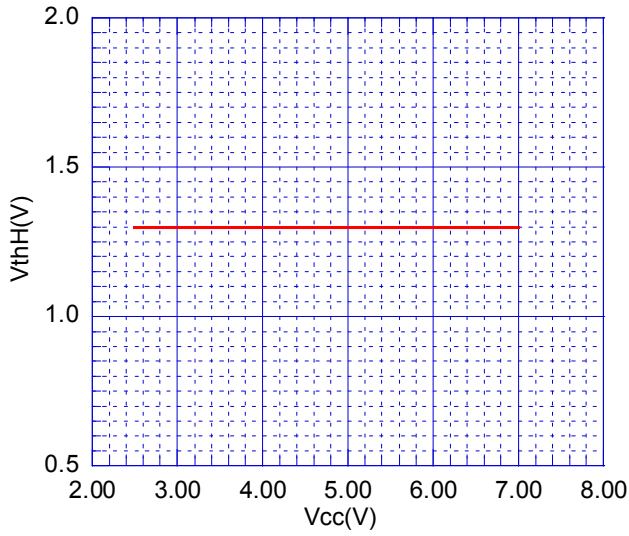
Second Harmonic Distortion vs. Supply Voltage



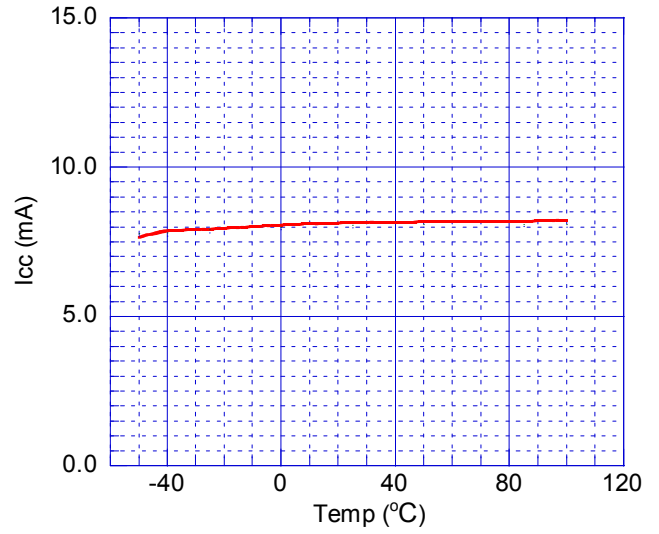
Switching Voltage vs. Supply Voltage



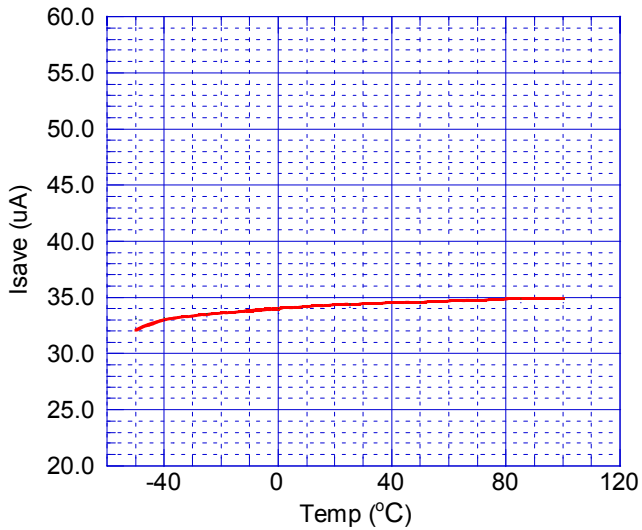
Switching Voltage vs. Supply Voltage



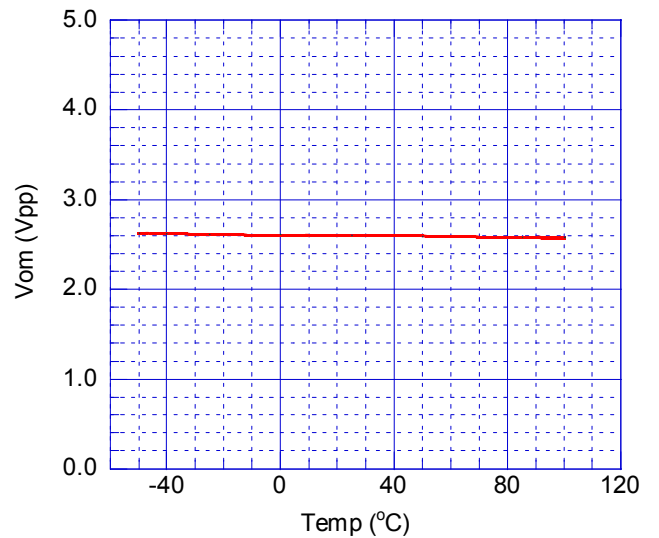
Operating Current vs. Temperature



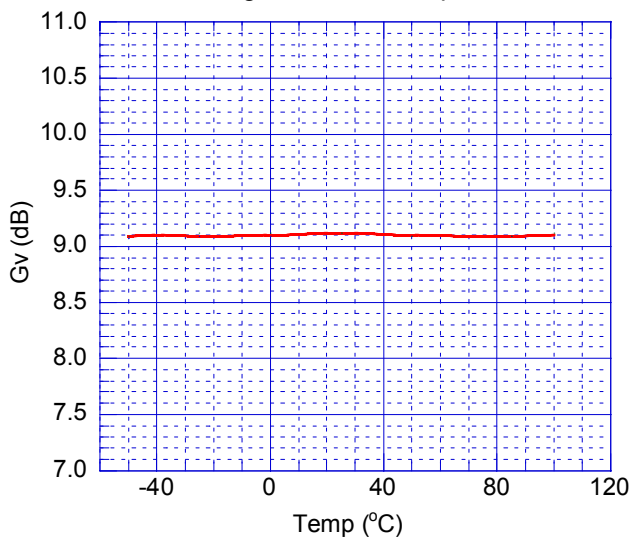
Operating Current at Standby State vs. Temperature



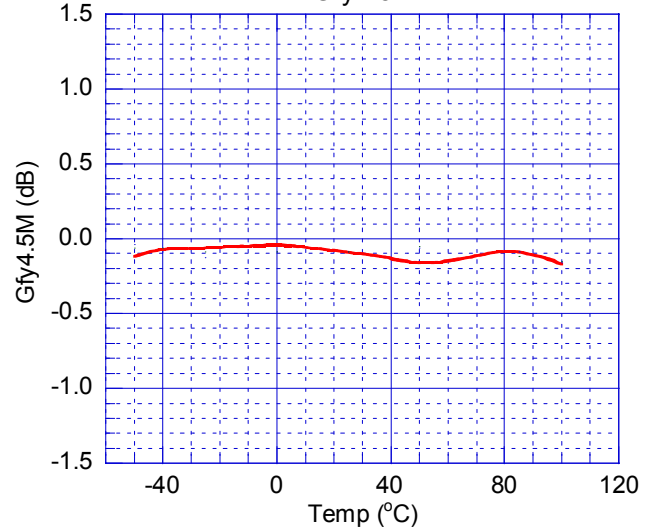
Maximum Output Voltage Swing vs. Temperature



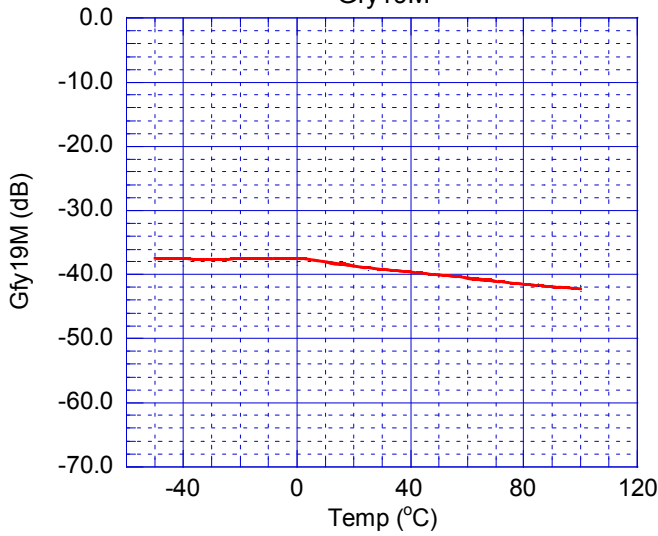
Voltage Gain vs. Temperature



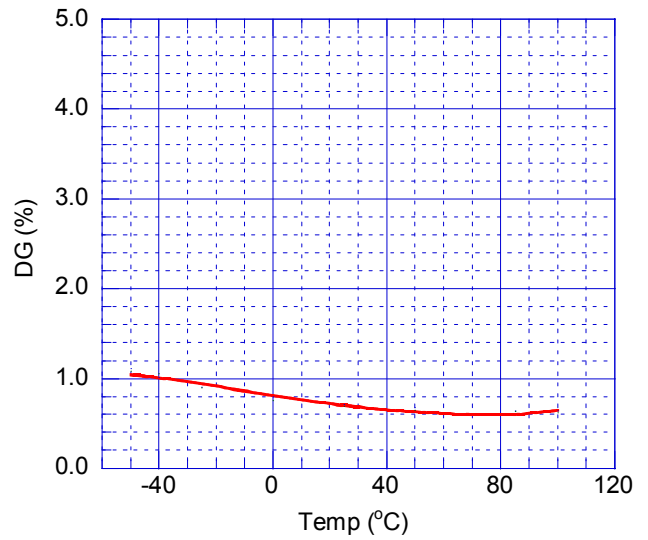
Low Pass Filter Characteristic vs. Temperature  
Gfy4.5M



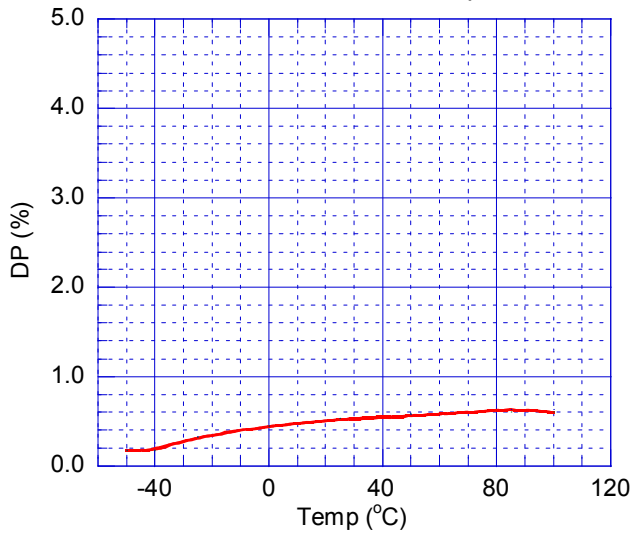
Low Pass Filter Characteristic vs. Temperature  
Gfy19M



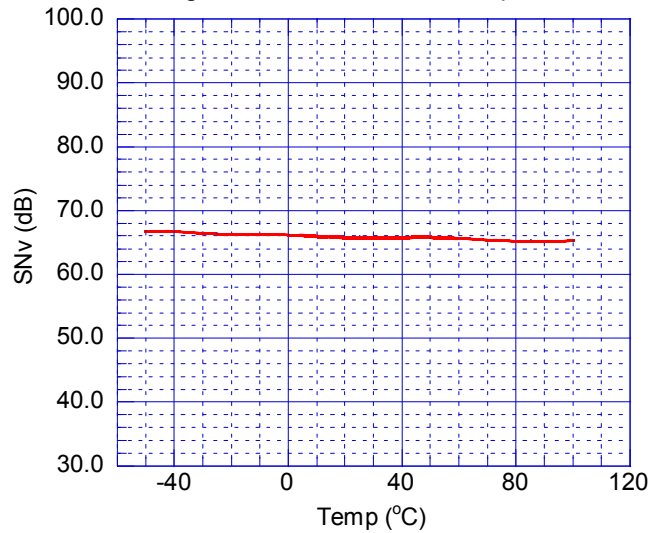
Differential Gain vs. Temperature



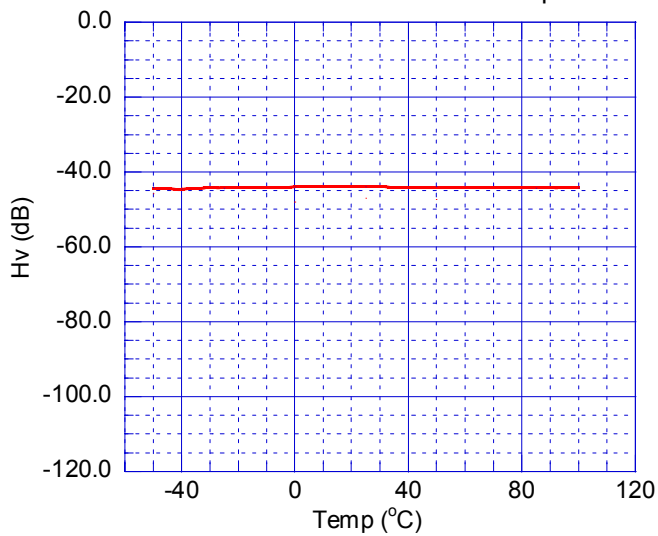
Differential Phase vs. Temperature



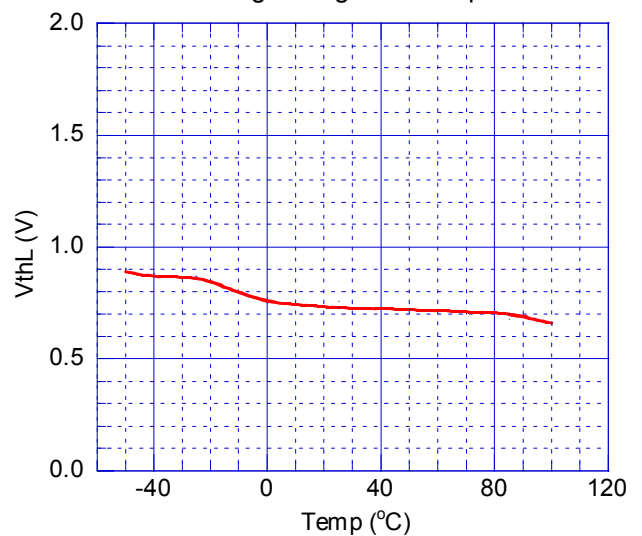
Signal to Noise Ratio vs. Temperature



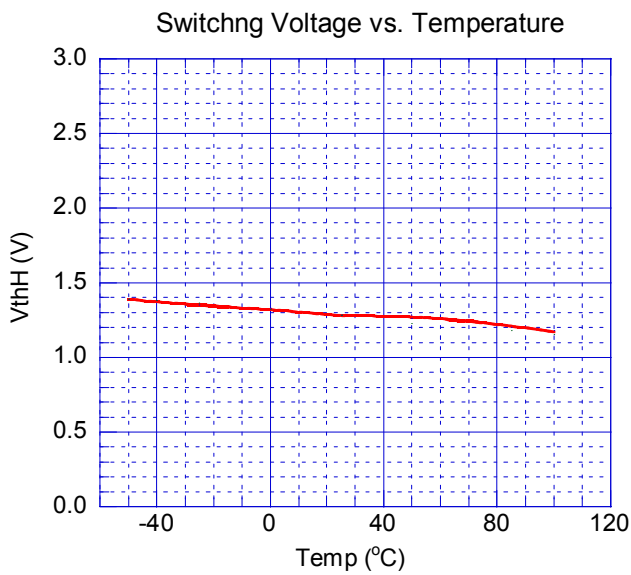
Second Harmonic Distortion vs. Temperature



Switching Voltage vs. Temperature







## ■ APPLICATION

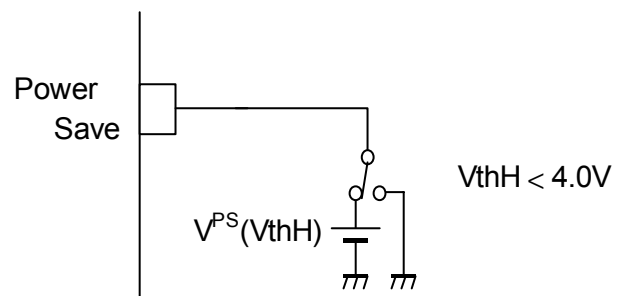
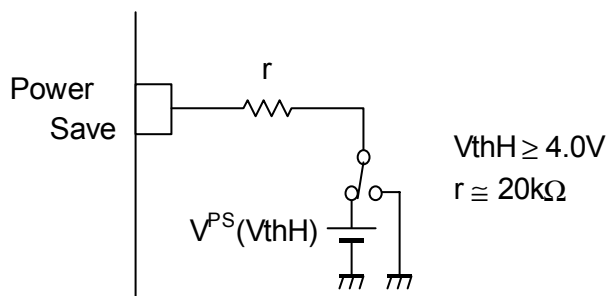
When you use a power save terminal more than by 4.0V, please put resistance of about 20k $\Omega$  into a power save terminal.

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

Example)

● PS(VthH)  $\geq$  4.0V

● PS(VthH) < 4.0V



**[CAUTION]**

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