

LOW VOLTAGE VIDEO AMPLIFIER WITH LPF

■GENERAL DESCRIPTION

The **NJM2571A** is a Low Voltage Video Amplifier contained LPF circuit. Internal 75Ω driver is easy to connect TV monitor directly.

The **NJM2571A** features low power and small package, and is suitable for low power design on downsizing of DSC and DVC.

■PACKAGE OUTLINE

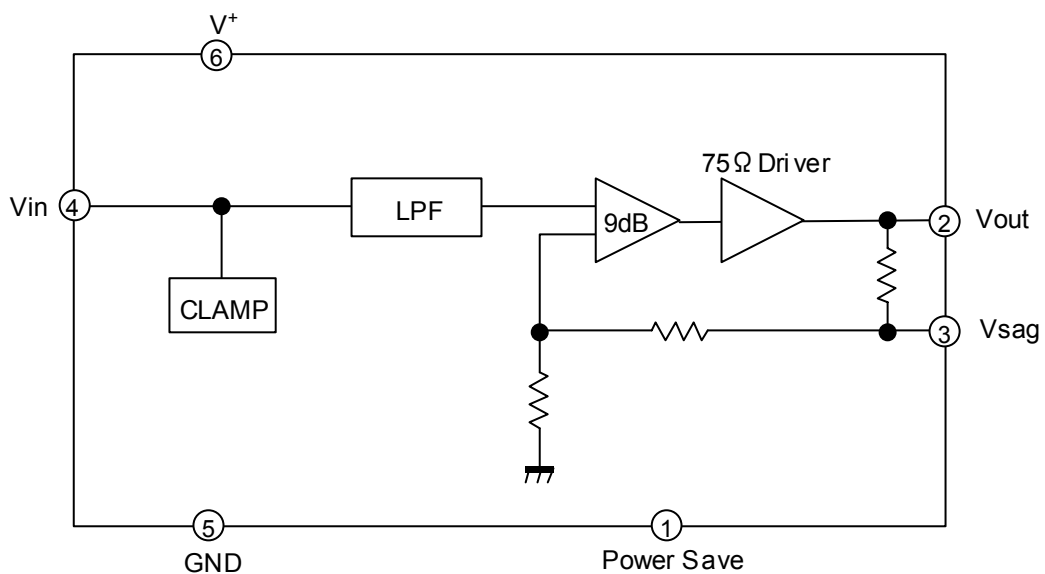


NJM2571AF1

■FEATURES

- Operating Voltage 2.8 to 5.5V
- 9dB amplifier
- Internal LPF -33dB at 19MHz typ.
- Internal 75Ω Driver Circuit (2-system drive)
- Power Save Circuit
- Bipolar Technology
- Package Outline MTP6

■BLOCK DIAGRAM



NJM2571A

■ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|-----------------------------|----------------|-------------|------|
| Supply Voltage | V ⁺ | 7.0 | V |
| Power Dissipation | P _D | 200 | mW |
| Operating Temperature Range | Topr | -40 to +85 | °C |
| Storage Temperature Range | Tstg | -40 to +125 | °C |

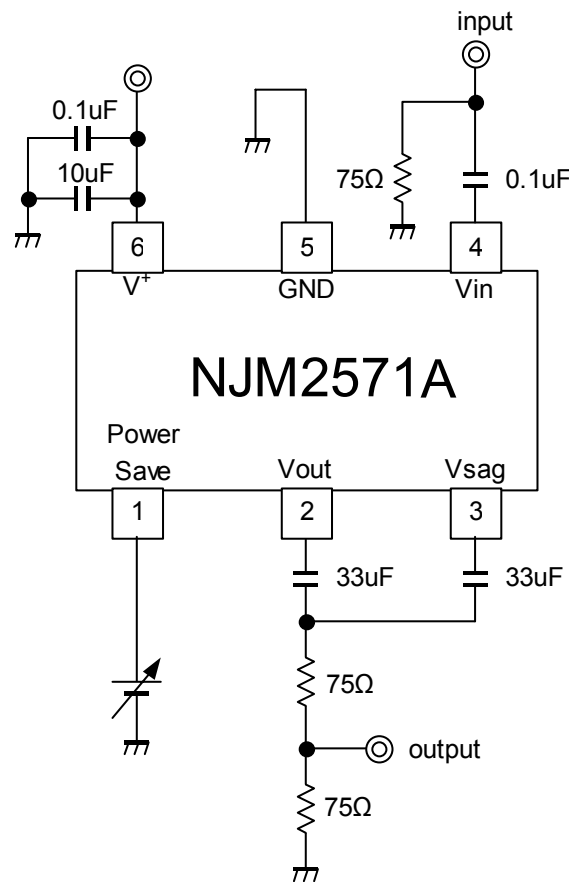
■ELECTRICAL CHARACTERISTICS (V⁺=3.0V, R_L=150Ω, Ta=25°C)

| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---------------------------------|----------------------|---|------|------|----------------|------|
| Operating Current | I _{CC} | No Signal | - | 8.0 | 12.0 | mA |
| Operating Current at Power Save | I _{save} | Power Save Mode | - | 30 | 50 | uA |
| Maximum Output Voltage Swing | V _{om} | f=100kHz, THD=1% | 2.2 | 2.5 | - | Vp-p |
| Voltage Gain | G _v | V _{in} =100kHz, 0.7Vp-p, Input Sine Signal | 8.5 | 9.0 | 9.5 | dB |
| Low Pass Filter Characteristic | G _{fy} 4.5M | V _{in} =4.5MHz/100kHz, 0.7Vp-p | -0.6 | -0.1 | 0.4 | dB |
| | G _{fy} 19M | V _{in} =19MHz/100kHz, 0.7Vp-p | - | -33 | -23 | |
| Differential Gain | DG | V _{in} =0.7Vp-p, Input 10step Video Signal | - | 0.5 | - | % |
| Differential Phase | DP | V _{in} =0.7Vp-p, Input 10step Video Signal | - | 0.5 | - | deg |
| S/N Ratio | SN _v | V _{in} =0.7Vp-p, R _L =75Ω 100% White Video Signal | - | +60 | - | dB |
| 2nd. Distortion | H _v | V _{in} =0.7Vp-p, 3.58MHz, Sine Video Signal, R _L =75Ω | - | -50 | - | dB |
| SW Change Voltage High Level | V _{thPH} | Active | 1.8 | - | V ⁺ | V |
| SW Change Voltage Low Level | V _{thPL} | Non-active | 0 | - | 0.3 | |

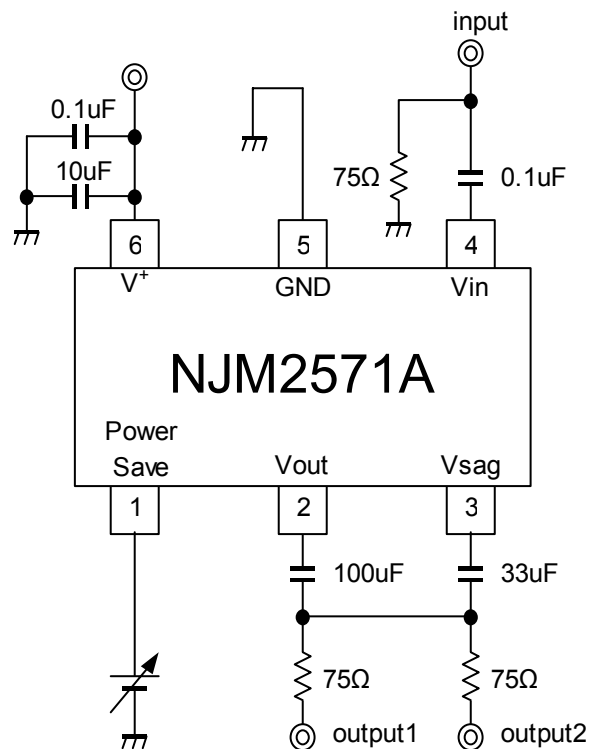
■CONTROL TERMINAL

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

TEST CIRCUIT



APPLICATION CIRCUIT



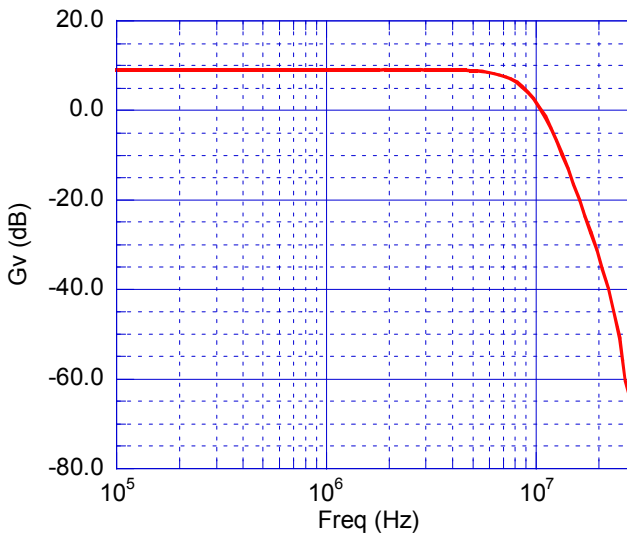
NJM2571A

■ TERMINAL FUNCTION

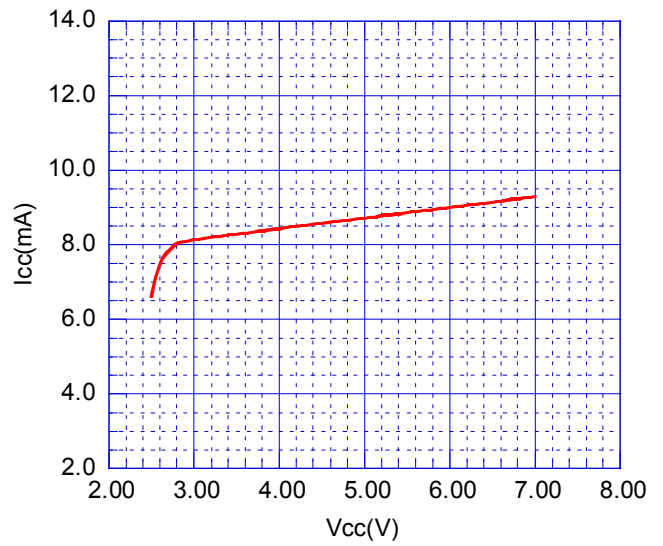
| PIN No. | PIN NAME | DC VOLTAGE | EQUIVALENT CIRCUIT |
|---------|------------|------------|--------------------|
| 1 | Power Save | - | |
| 2 | Vout | 0.26V | |
| 3 | Vsag | - | |
| 4 | Vin | 1.10V | |
| 5 | GND | - | |
| 6 | V+ | 3V | |

TYPICAL CHARACTERISTICS

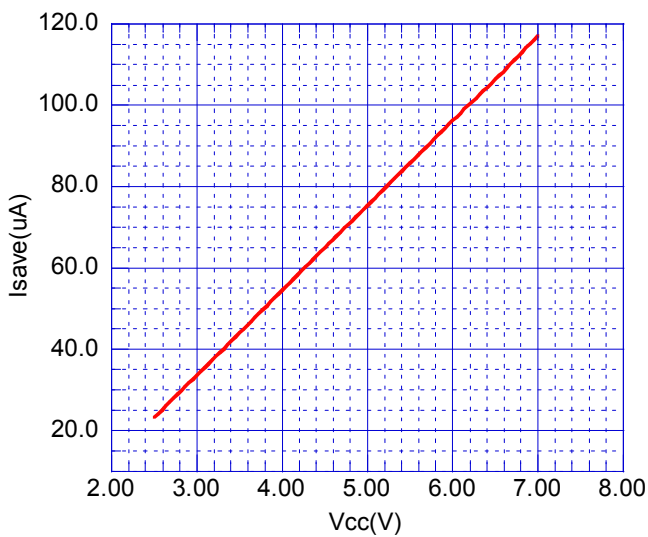
Voltage Gain vs. Frequency



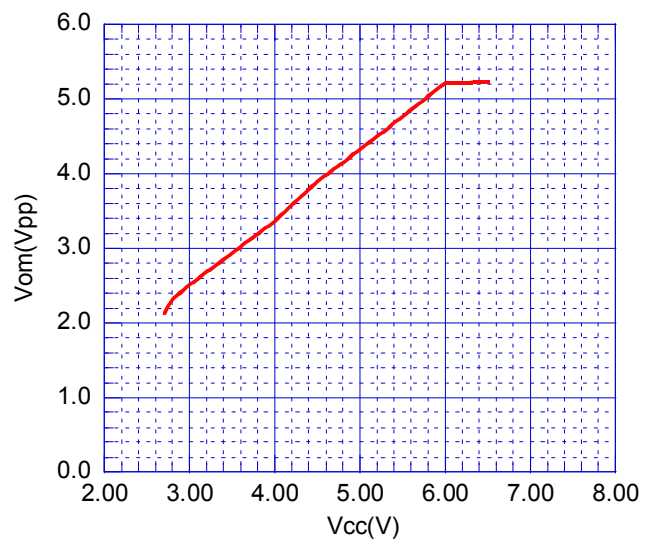
Operating Current vs. Supply Voltage



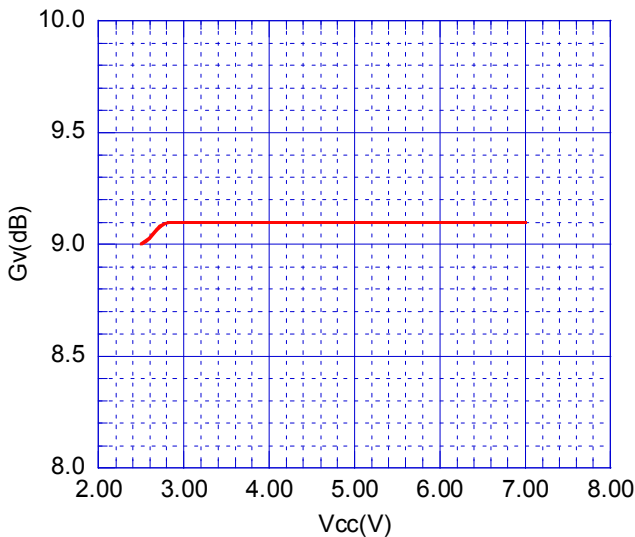
Operating Current at Standby State vs. Supply Voltage



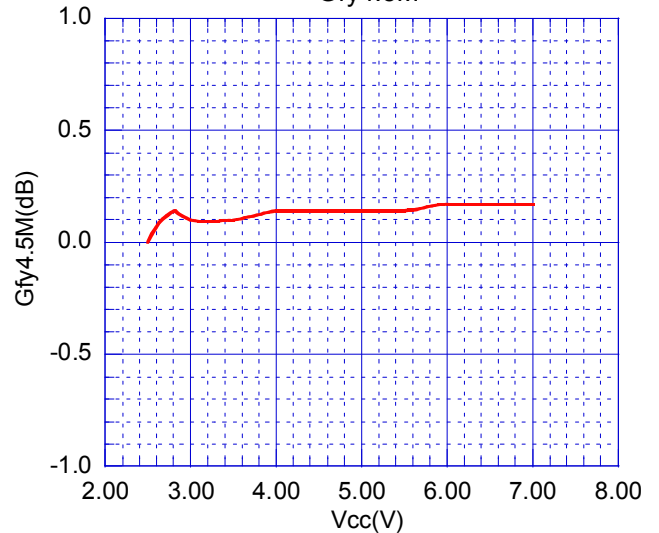
Maxim Output Voltage Swing vs. Supply Voltage



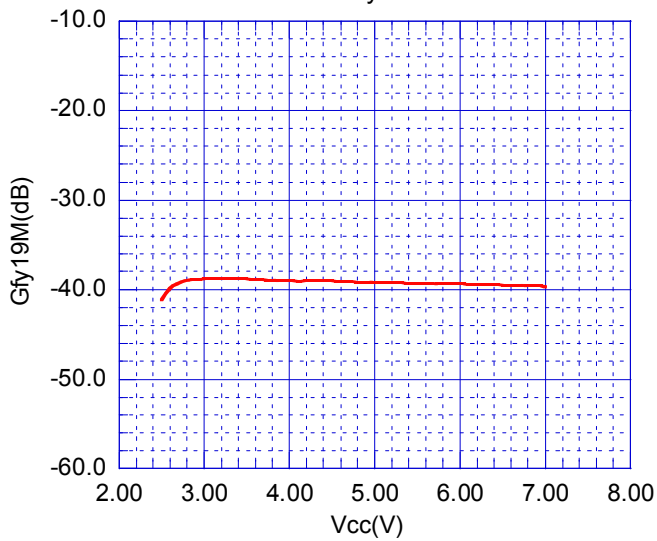
Voltage Gain vs. Supply Voltage



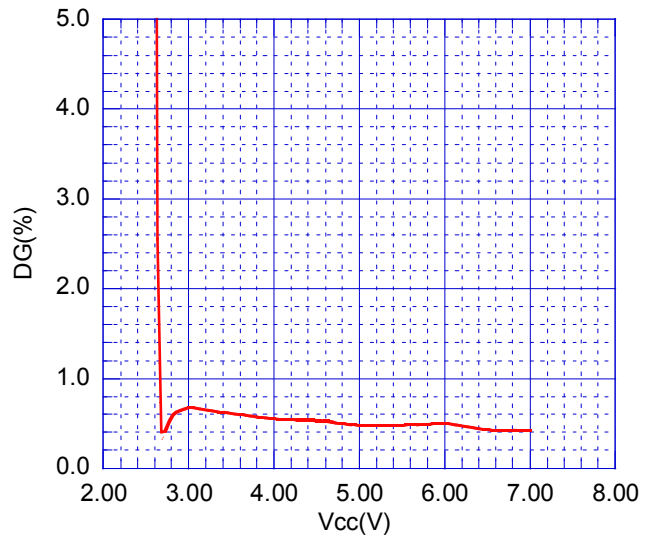
Low Pass Filter Characteristics vs. Supply Voltage
Gfy4.5M



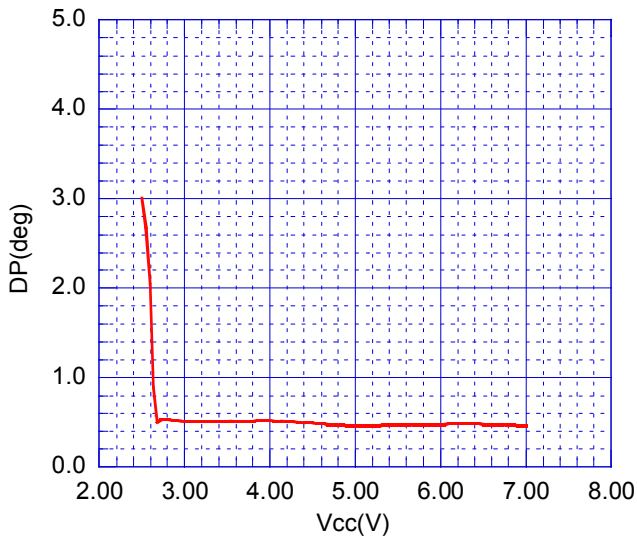
Low Pass Filter Characteristics vs. Supply Voltage
Gfy19M



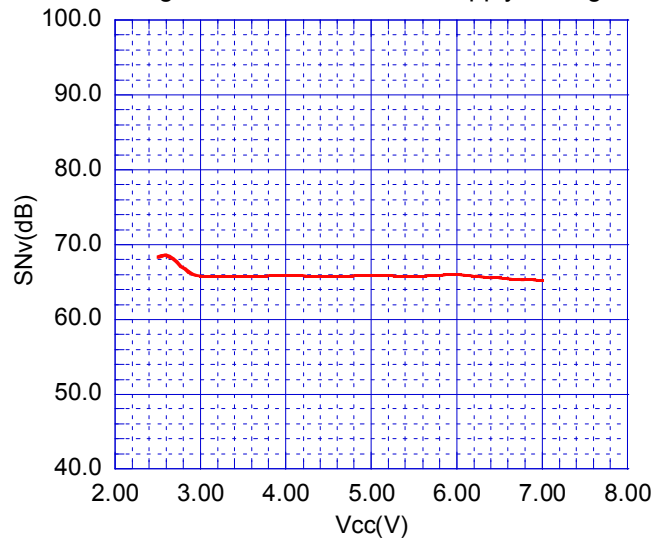
Differential Gain vs. Supply Voltage



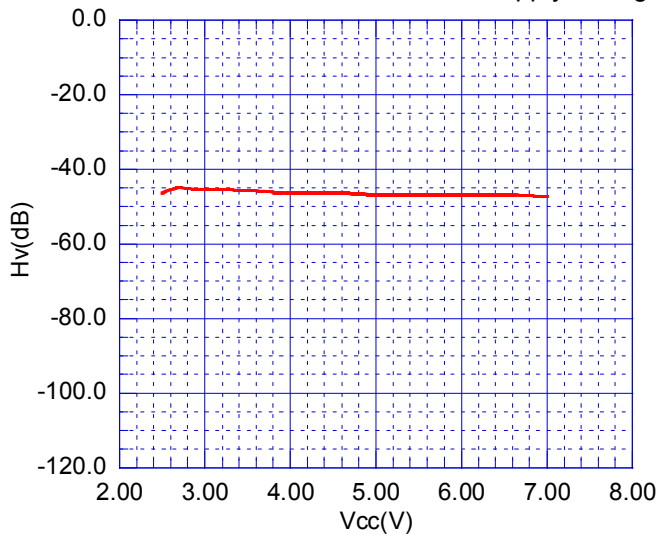
Differential Phase vs. Supply Voltage



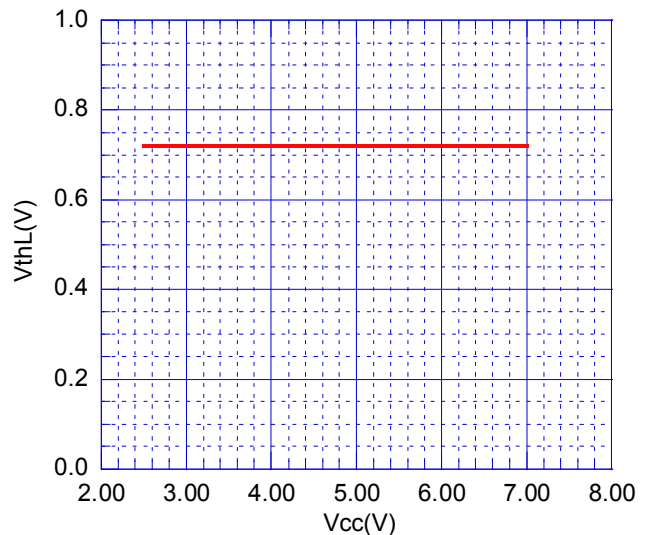
Signal to Noise Ratio vs. Supply Voltage



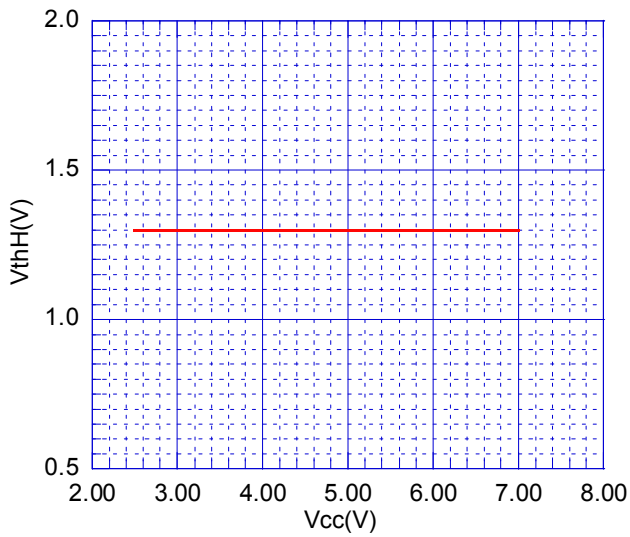
Second Harmonic Distortion vs. Supply Voltage



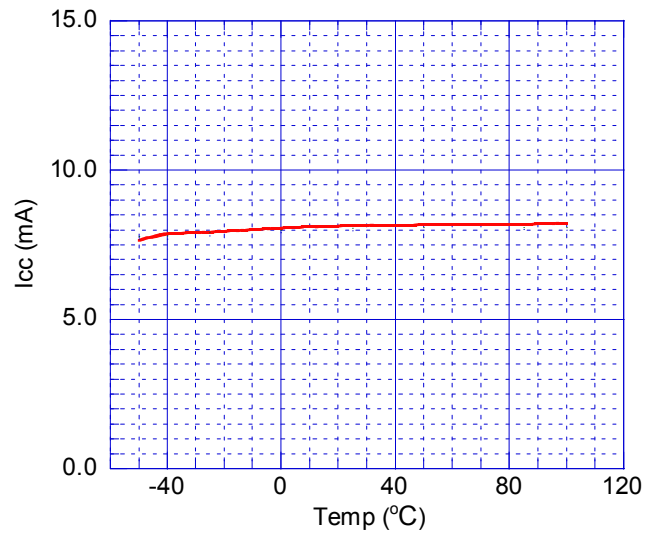
Switching Voltage vs. Supply Voltage



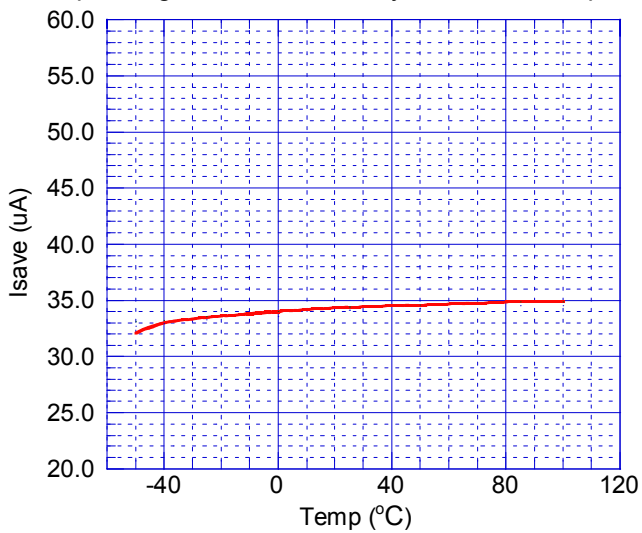
Switching Voltage vs. Supply Voltage



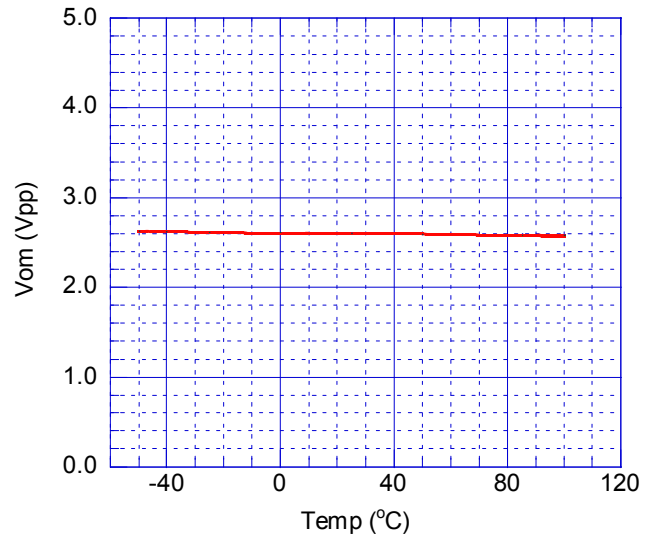
Operating Current vs. Temperature



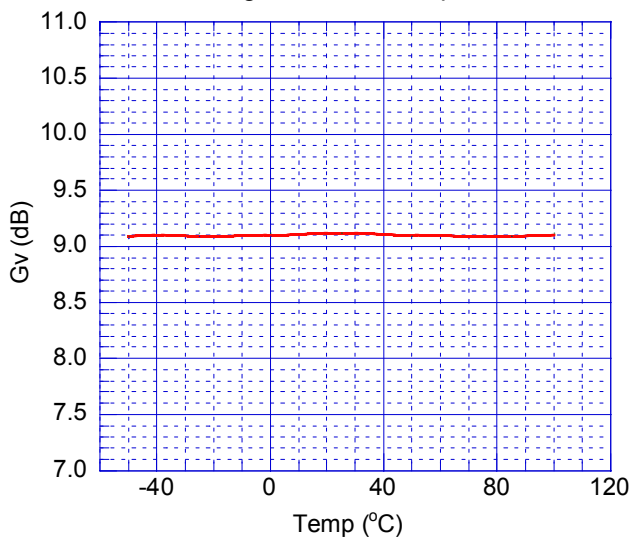
Operating Current at Standby State vs. Temperature



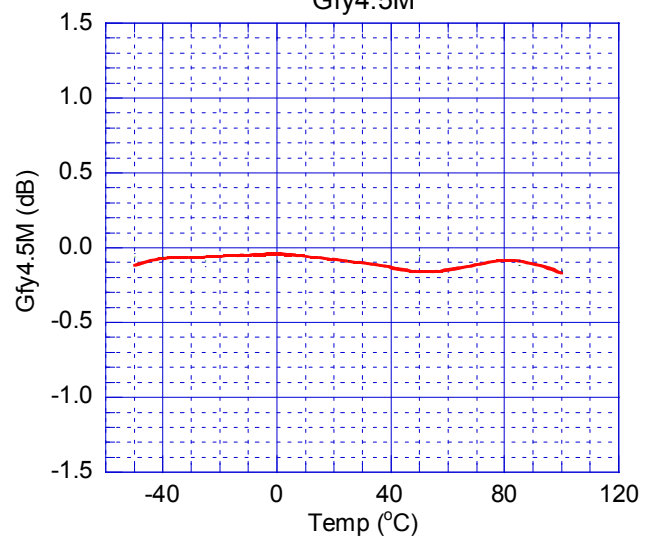
Maximum Output Voltage Swing vs. Temperature



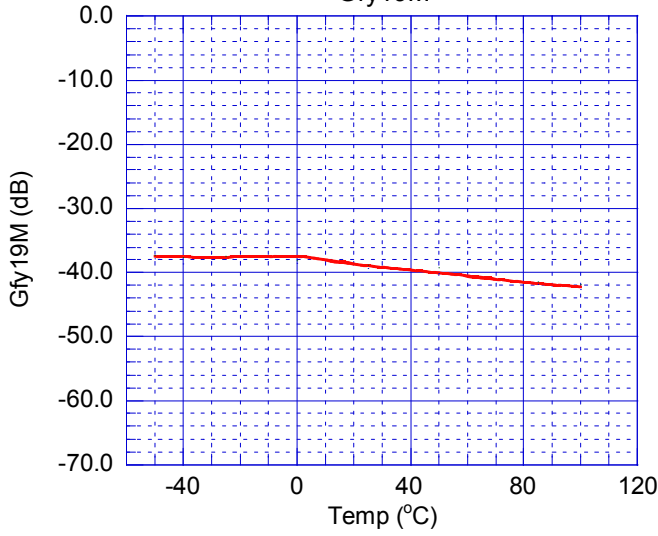
Voltage Gain vs. Temperature



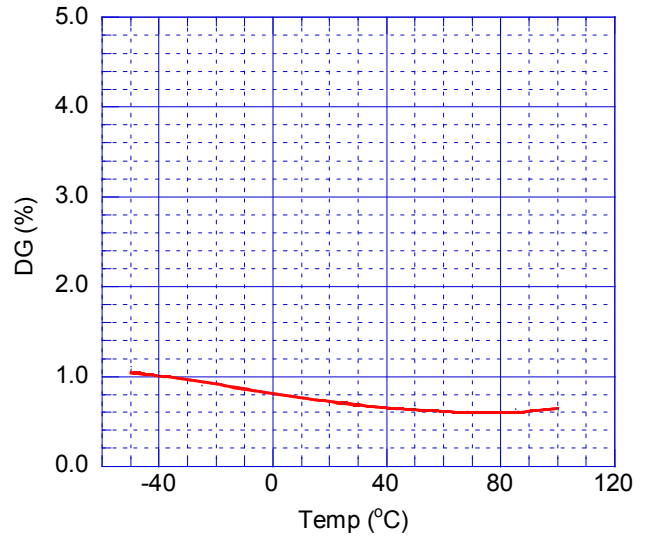
Low Pass Filter Characteristic vs. Temperature
Gfy4.5M



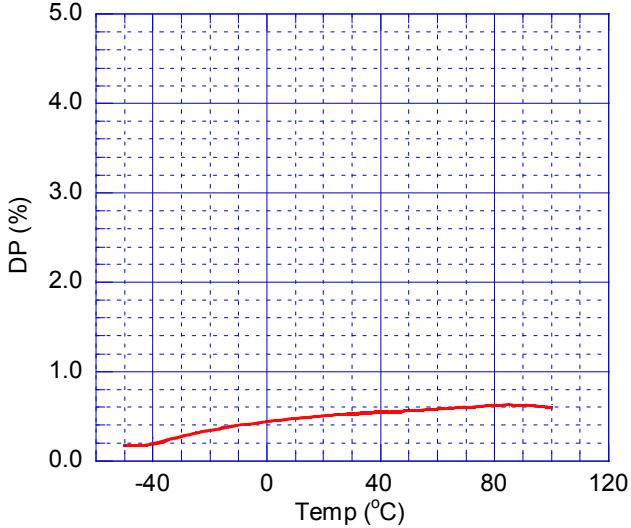
Low Pass Filter Characteristic vs. Temperature
Gfy19M



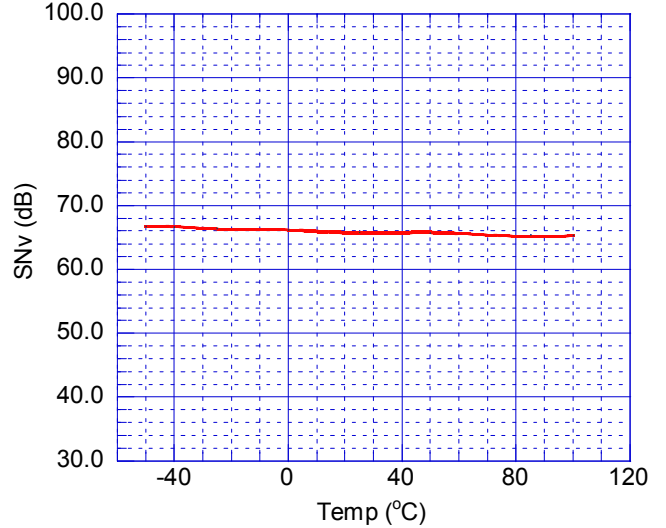
Differential Gain vs. Temperature



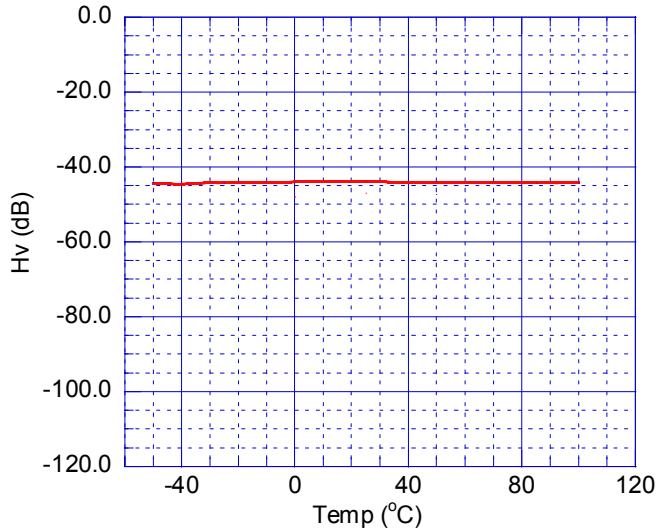
Differential Phase vs. Temperature



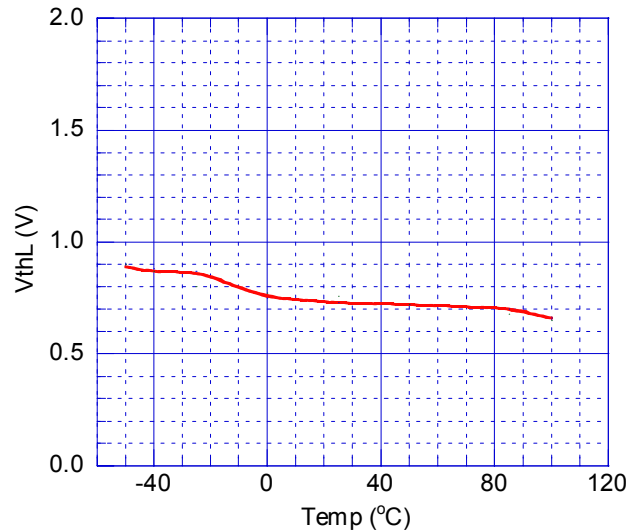
Signal to Noise Ratio vs. Temperature

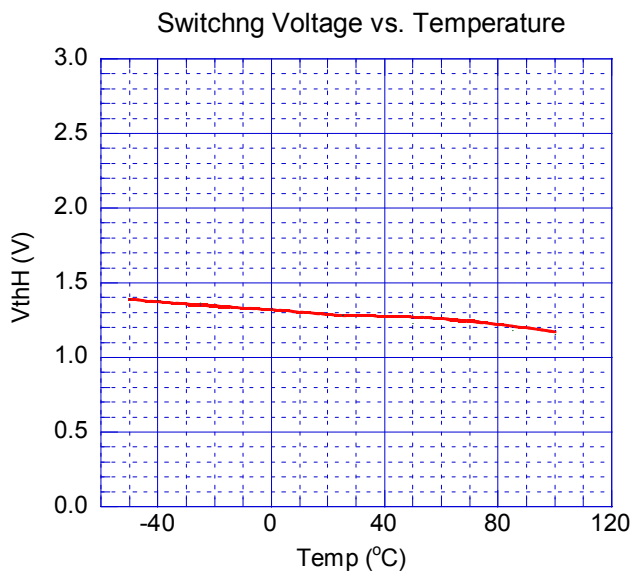


Second Harmonic Distortion vs. Temperature



Switching Voltage vs. Temperature





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