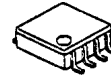


LOW VOLTAGE VIDEO AMPLIFIER WITH LPF

■GENERAL DESCRIPTION

The NJM2576 is a Low Voltage Video Amplifier contained LPF circuit.
 The NJM2576 is corresponding to composite video signal input with LPF circuit. 75Ω drivers for direct connecting TV monitor.
 The NJM2576 features low power and small package, and is suitable for low power design on downsizing of DSC and DVC.

■PACKAGE OUTLINE

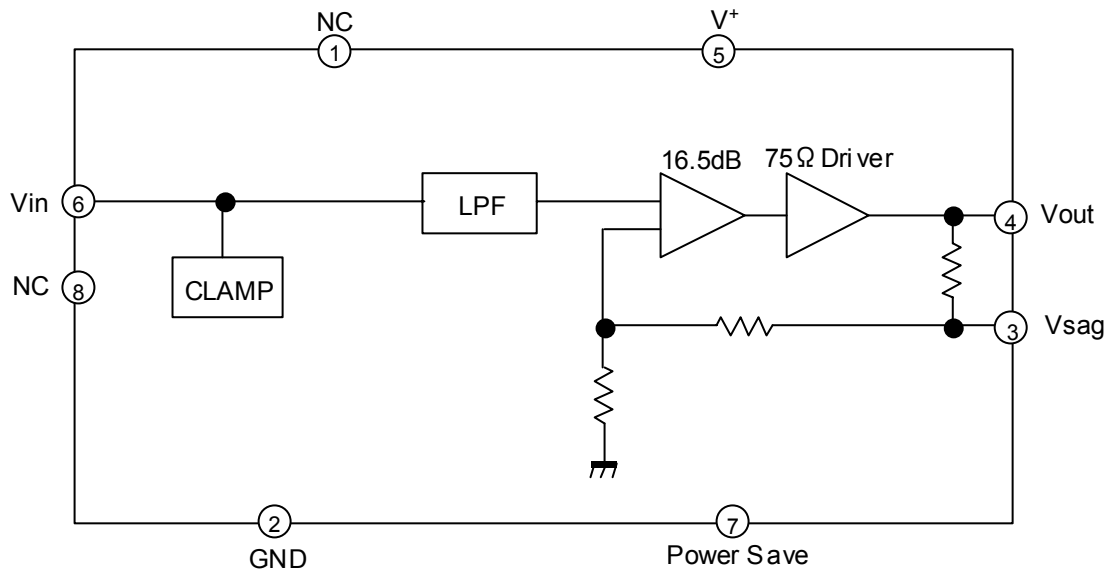


NJM2576RB1

■FEATURES

- Operating Voltage 2.8 to 5.5V
- Input Composite Video Signal 0.3Vpp
- Operating Current 8.0mA typ. at Vcc=3.0V
- Operating Current (Power Save Mode) 70uA typ.at Vcc=3.0V
- Internal 75Ω Driver Circuit (2-system drive)
- Internal Low Pass Filter
- Bipolar Technology
- Package Outline TVSP8

■BLOCK DIAGRAM



NJM2576

■ 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, 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 | - | 8.0 | 11.0 | mA |
| Operating Current at Power Save | I _{save} | Power Save Mode | - | 70 | 90 | uA |
| Maximum Output Voltage Swing | Vom | f=1kHz, THD=1% | 2.2 | 2.5 | - | Vp-p |
| Voltage Gain | Gv | Vin=100kHz, 0.3Vp-p, Input Sine Signal | 16.1 | 16.5 | 16.9 | dB |
| Low Pass Filter Characteristic | Gfy4.5M | Vin=4.5MHz/100kHz, 0.3Vp-p | -0.95 | -0.45 | 0.05 | dB |
| | Gfy8M | Vin=8MHz/100kHz, 0.3Vp-p | - | -2.7 | - | |
| | Gfy23.5M | Vin=23.5MHz/100kHz, 0.3Vp-p | - | -27 | -17 | |
| Differential Gain | DG | Vin=0.3Vp-p, Input 10step Video Signal | - | 0.5 | - | % |
| Differential Phase | DP | Vin=0.3Vp-p, Input 10step Video Signal | - | 0.5 | - | deg |
| S/N Ratio | SNv | Vin=0.3Vp-p, 100k to 6MHz 100% White Video Signal, R _L =75Ω | - | +60 | - | dB |
| 2nd. Distortion | Hv | Vin=0.3Vp-p, 3.58MHz, Sine Video Signal, R _L =75Ω | - | -60 | - | dB |
| SW Change Voltage High Level | VthPH | Active | 1.8 | - | V ⁺ | V |
| SW Change Voltage Low Level | VthPL | Non-active | 0 | - | 0.3 | |

■ CONTROL TERMINAL

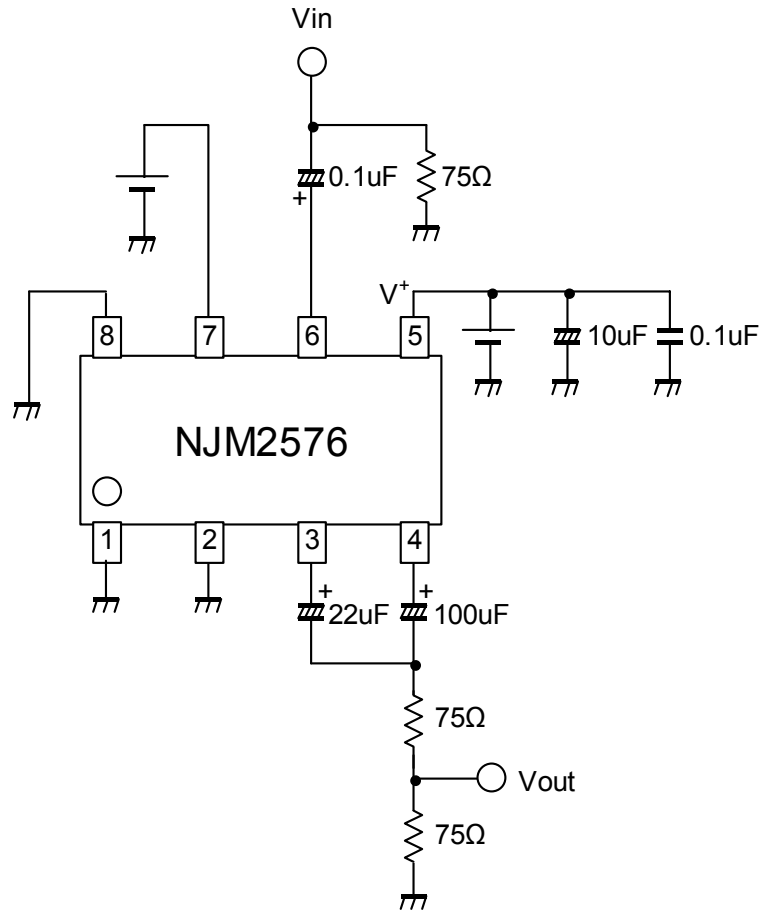
| PARAMETER | STATUS | NOTE |
|------------|--------|------------------|
| Power Save | H | Power Save : OFF |
| | L | Power Save : ON |
| | OPEN | Power Save : ON |

■ EQUIVALENT CIRCUIT (V+=3V)

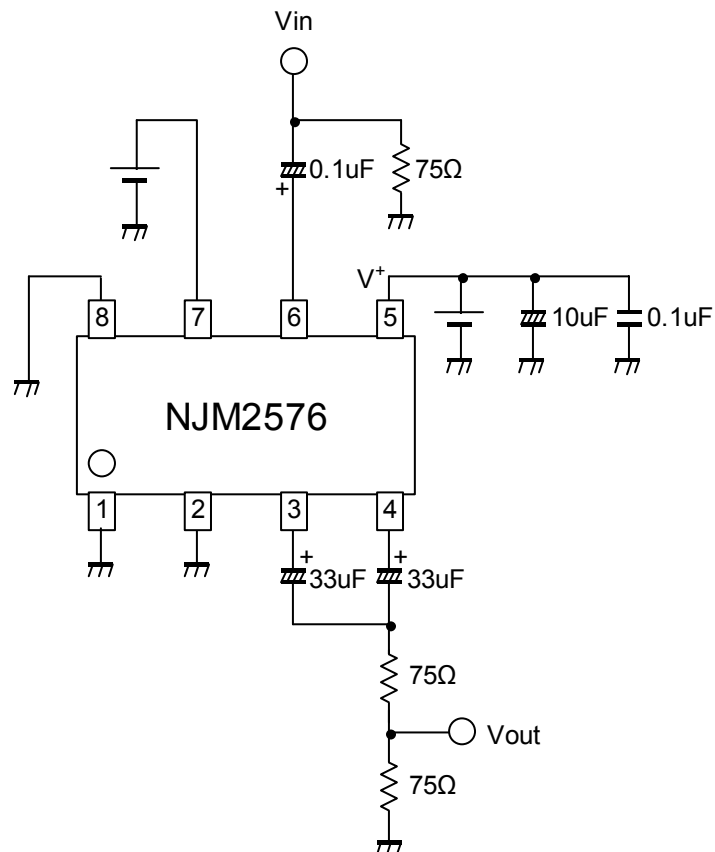
| PIN No. | PIN NAME | EQUIVALENT CIRCUIT | DC VOLTAGE |
|---------|-----------|--------------------|------------|
| 1 8 | NC | | - |
| 2 | GND | | 0V |
| 3 | Vsag | | 0.37 |
| 4 | Vout | | 0.33V |
| 5 | V+ | | 3V |
| 6 | Vin | | 1.42V |
| 7 | PowerSave | | 0V |

NJM2576

TEST CIRCUIT

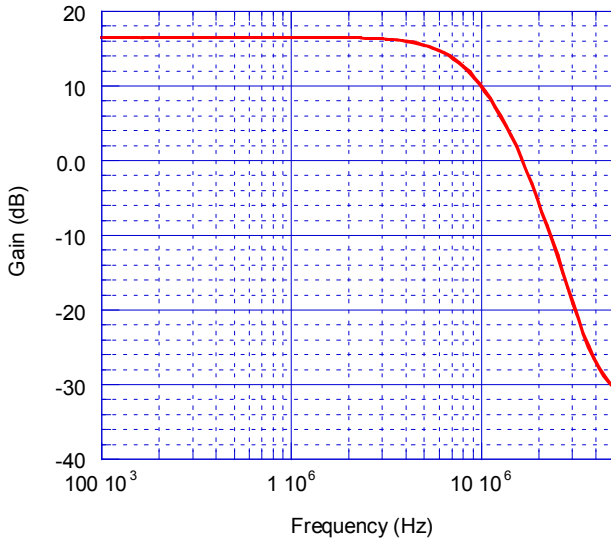


APPLICATION CIRCUIT

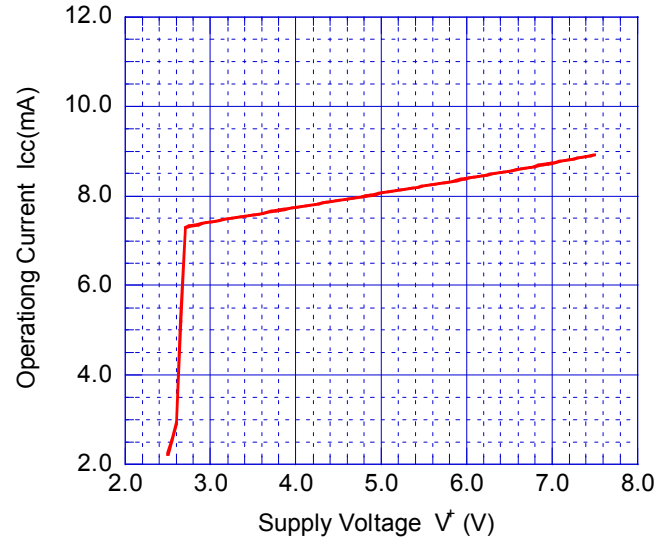


■ TYPICAL CHARACTERISTICS

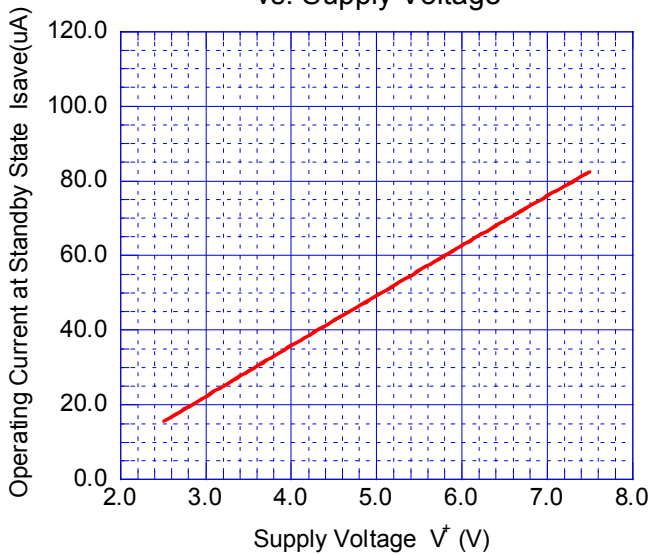
Voltage Gain vs. Frequency
0.3Vpp sinewave signal input



Operating Current vs. Supply Voltage

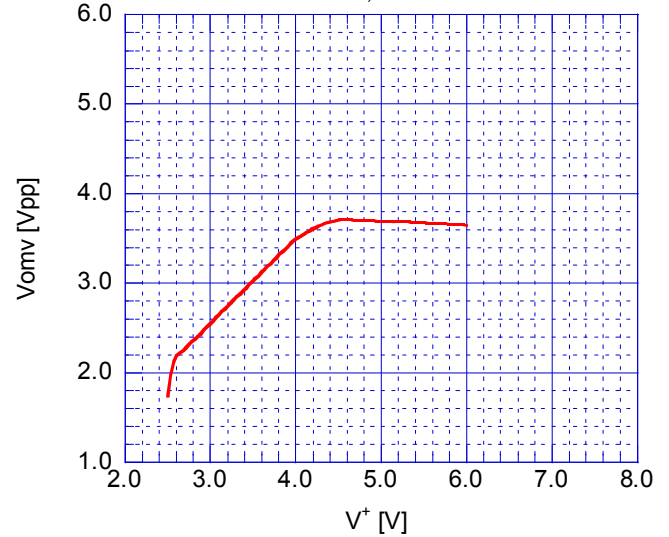


Operating Current at Standby State vs. Supply Voltage



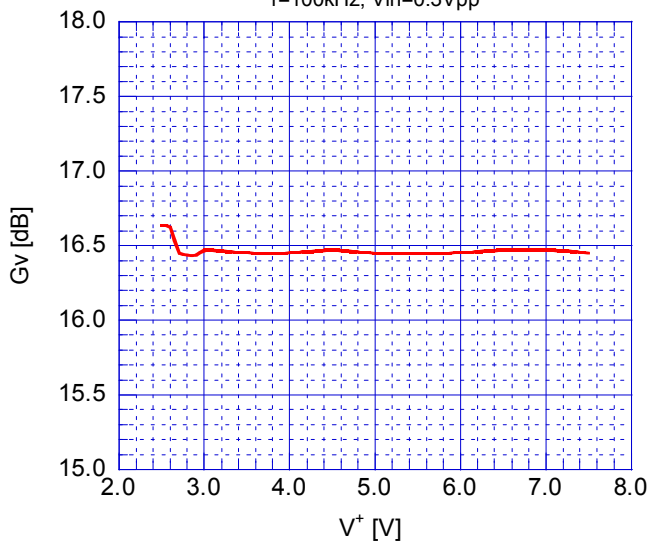
V+ vs Vomv

f=1kHz, THD=1%



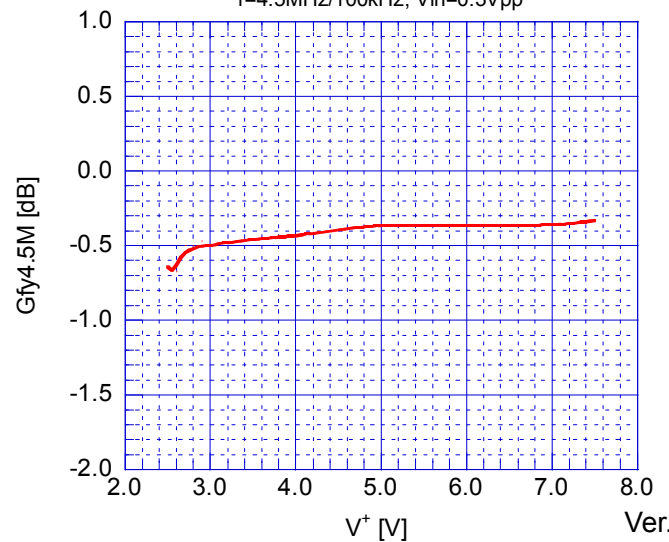
V+ vs Gv

f=100kHz, Vin=0.3Vpp



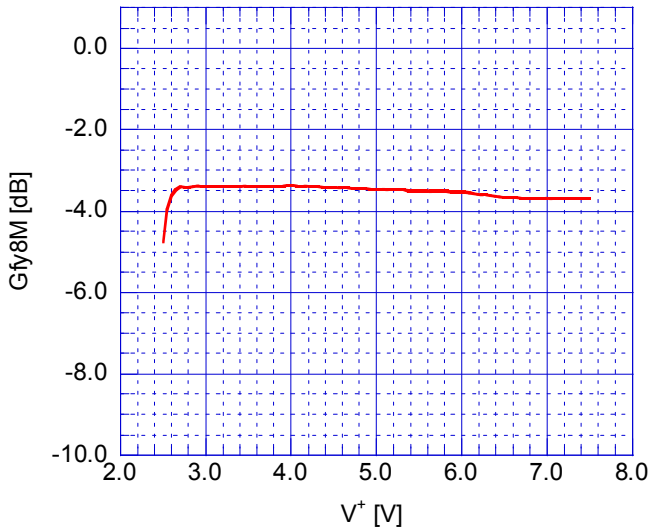
V+ vs Gfy4.5M

f=4.5MHz/100kHz, Vin=0.3Vpp



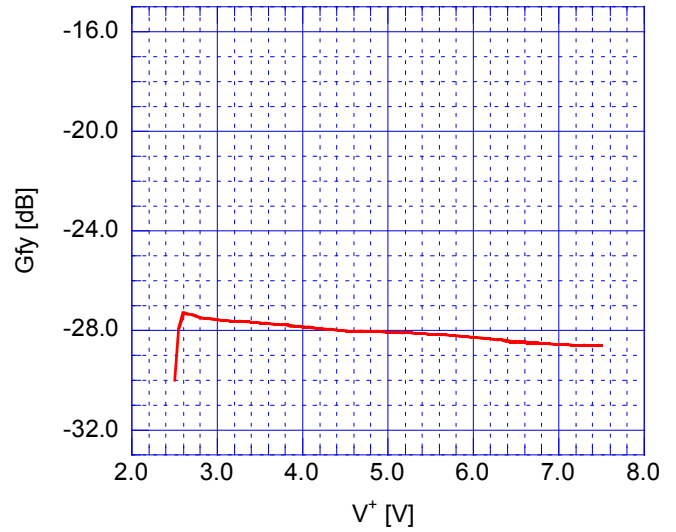
V⁺ vs G_{fy8M}

f=8MHz/100kHz, Vin=0.3Vpp



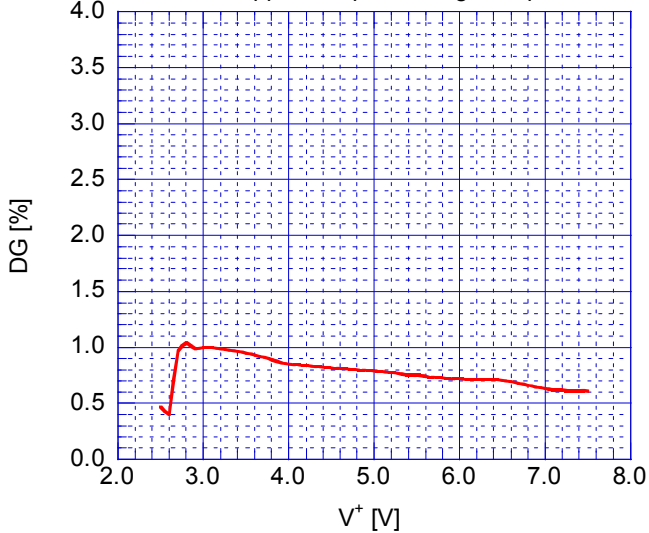
V⁺ vs G_{fy23.5M}

f=23.5MHz/100kHz, Vin=0.3Vpp



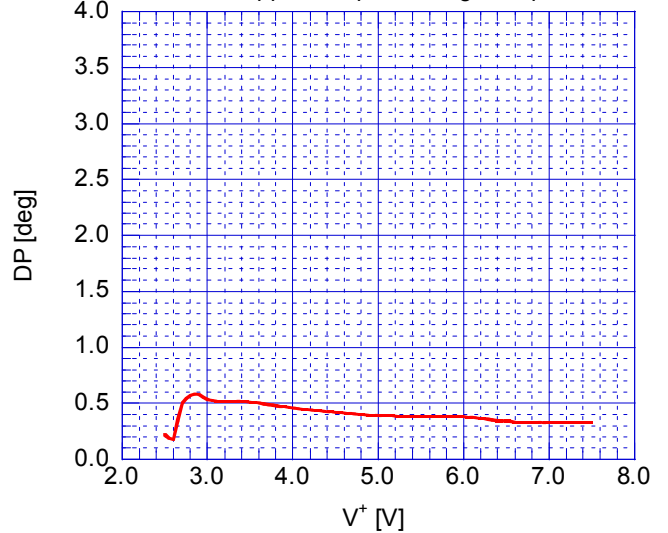
V⁺ vs DG

0.3Vpp, 10step video signal input



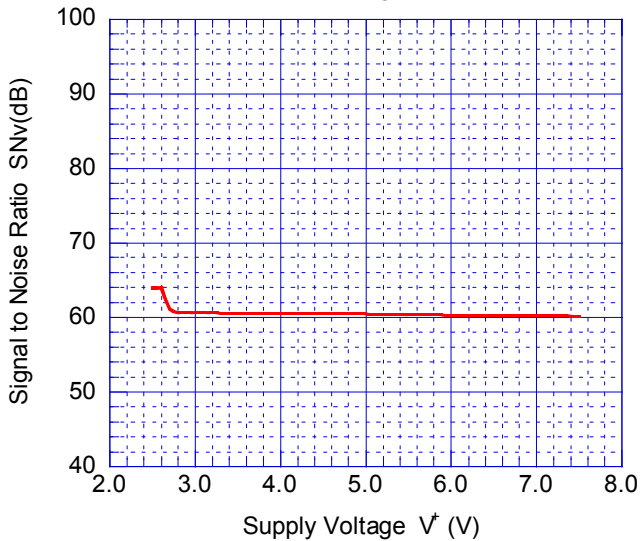
V⁺ vs DP

0.3Vpp, 10step video signal input



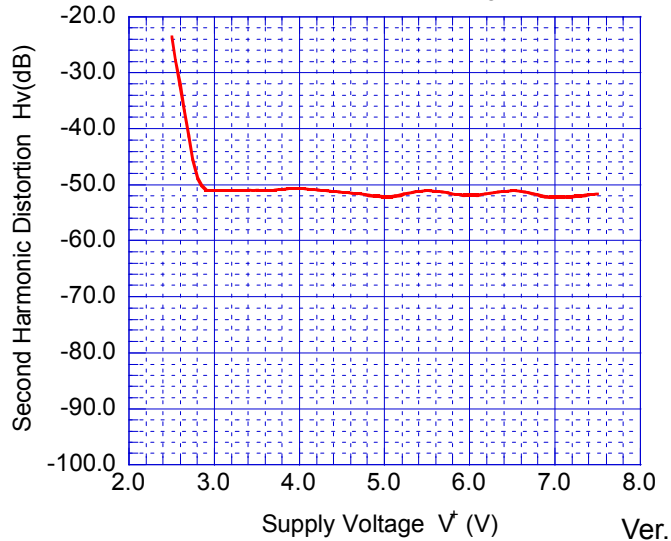
Signal to Noise Ratio vs. Supply Voltage

0.3Vpp, 100% white video signal input, 100kHz-6MHz



Second Harmonic Distortion vs. Supply Voltage

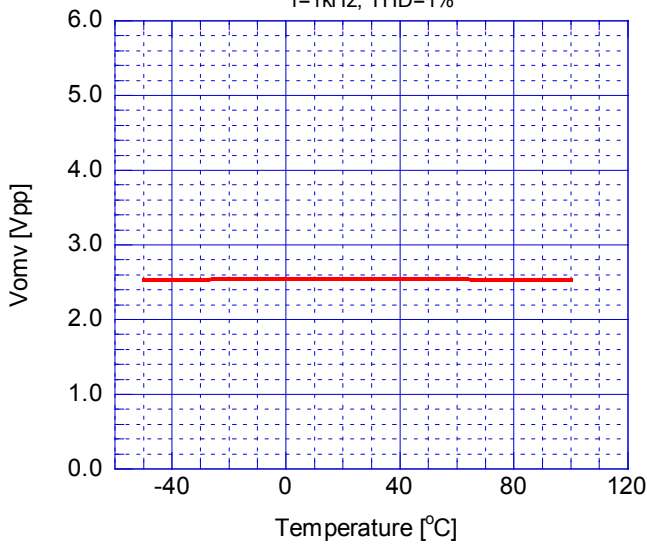
0.3Vpp, 3.58MHz sinewave signal input



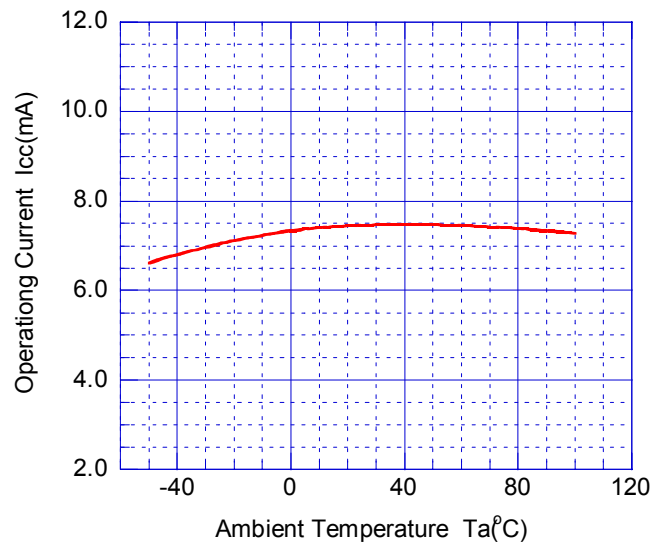
Ver.1

Temperature vs Vomv

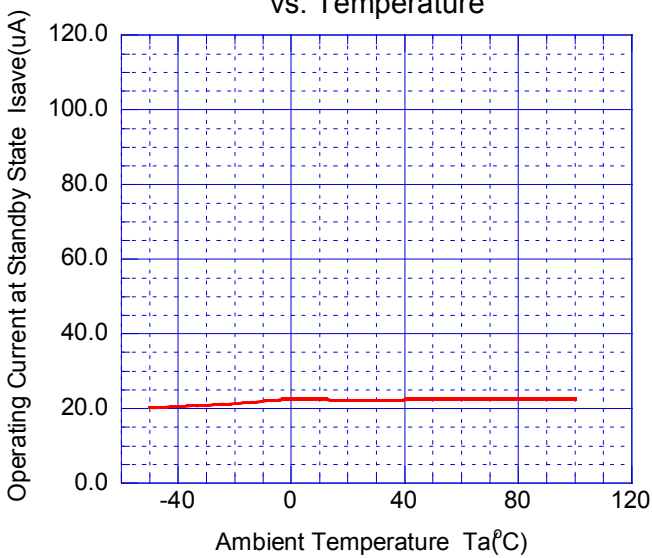
f=1kHz, THD=1%



Operating Current vs. Temperature

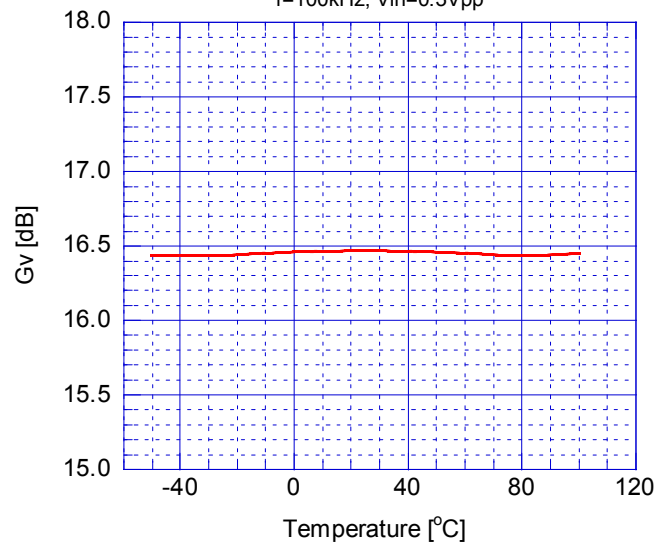


Operating Current at Standby State vs. Temperature



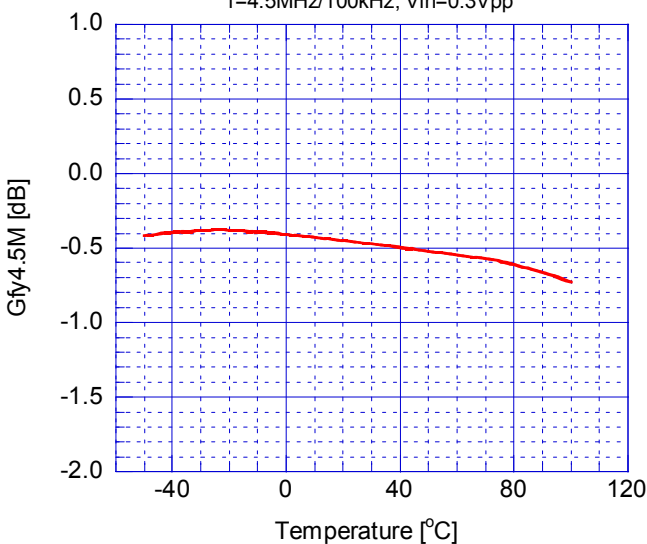
Temperature vs Gv

f=100kHz, Vin=0.3Vpp



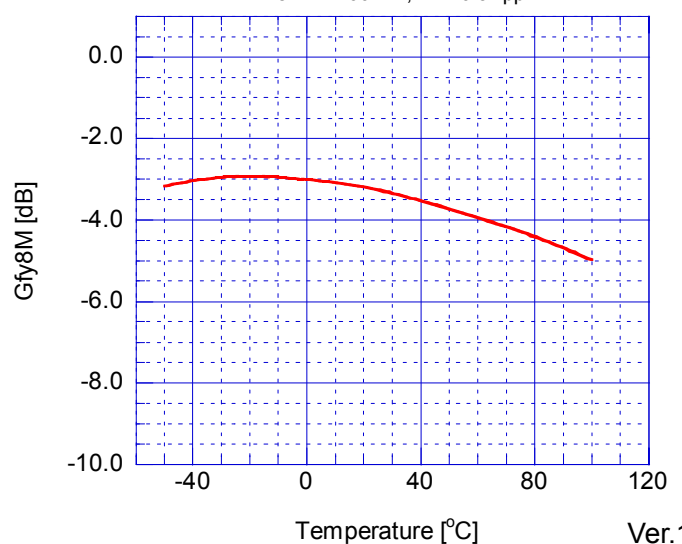
Temperature vs Gfy4.5M

f=4.5MHz/100kHz, Vin=0.3Vpp



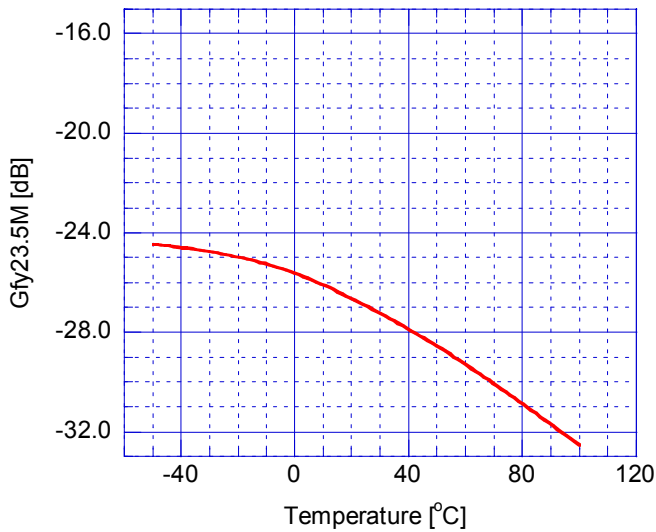
Temperature vs Gfy8M

f=8MHz/100kHz, Vin=0.3Vpp



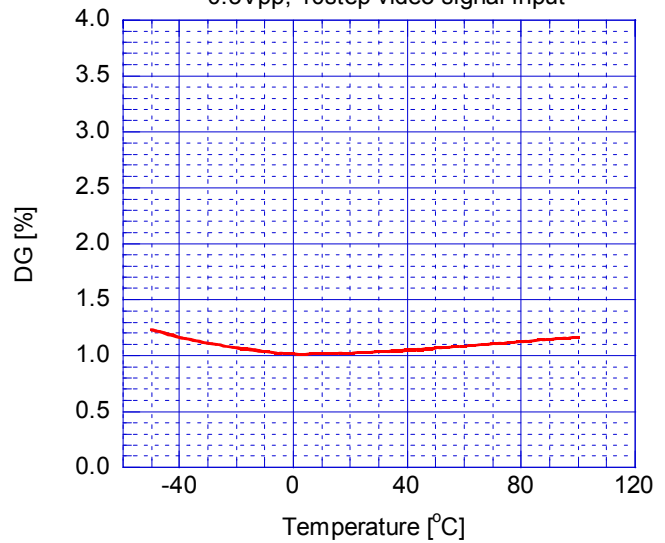
Temperature vs Gfy_{23.5M}

f=23.5MHz/100kHz, Vin=0.3Vpp



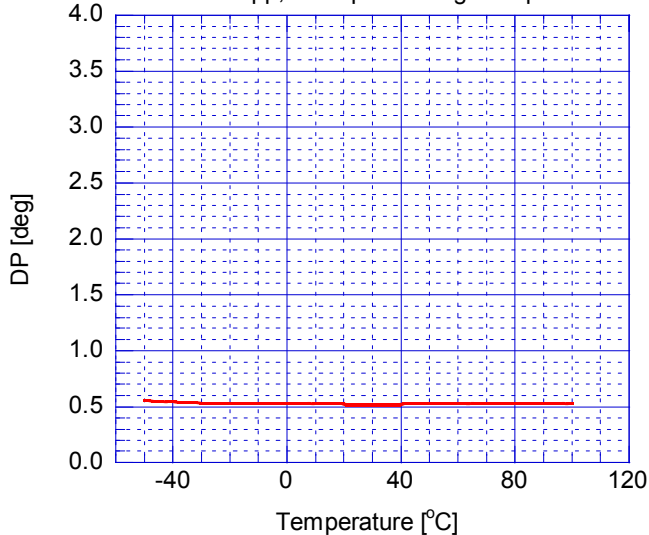
Temperature vs DG

0.3Vpp, 10step video signal input



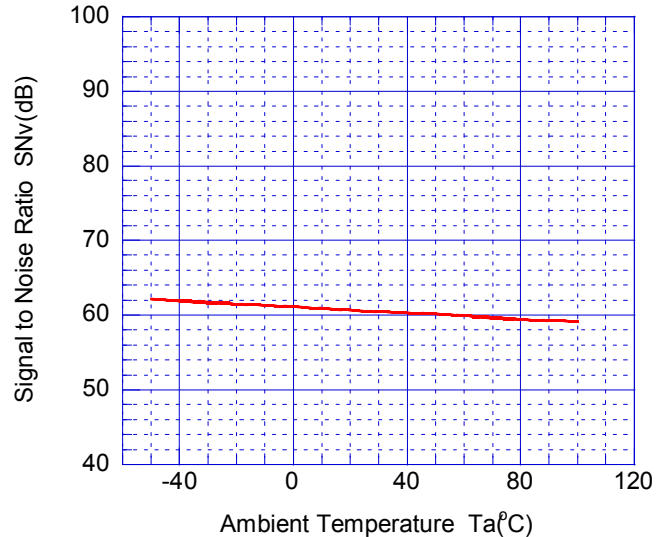
Temperature vs DP

0.3Vpp, 10step video signal input



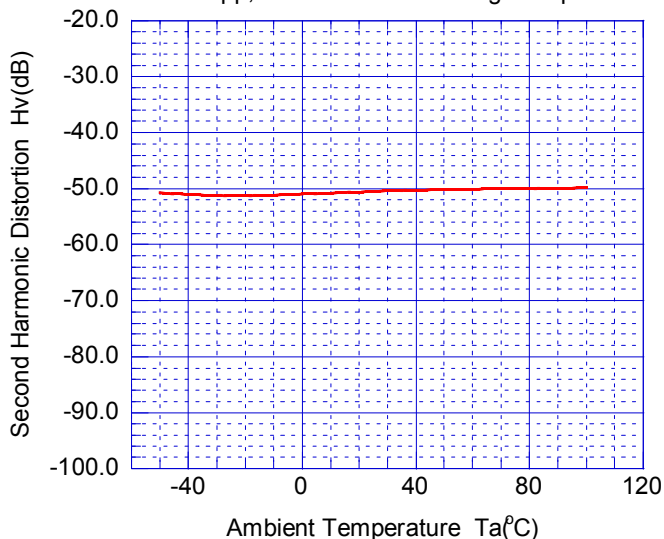
Signal to Noise Ratio vs. Temperature

0.3Vpp, 100% white video signal input, 100kHz-6MHz



Second Harmonic Distortion vs. Temperature

0.3Vpp, 3.58MHz sinewave signal input



[CAUTION]
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