LOW VOLTAGE VIDEO AMPLIFIER WITH LPF

■GENERAL DESCRIPTION

The NJM2578 is a Low Voltage Video Amplifier contained LPF circuit. Internal 75Ω driver is easy to connect TV monitor directly.

The NJM2578 features low power and small package, and is suitable for low power design on downsizing of DSC and DVC.

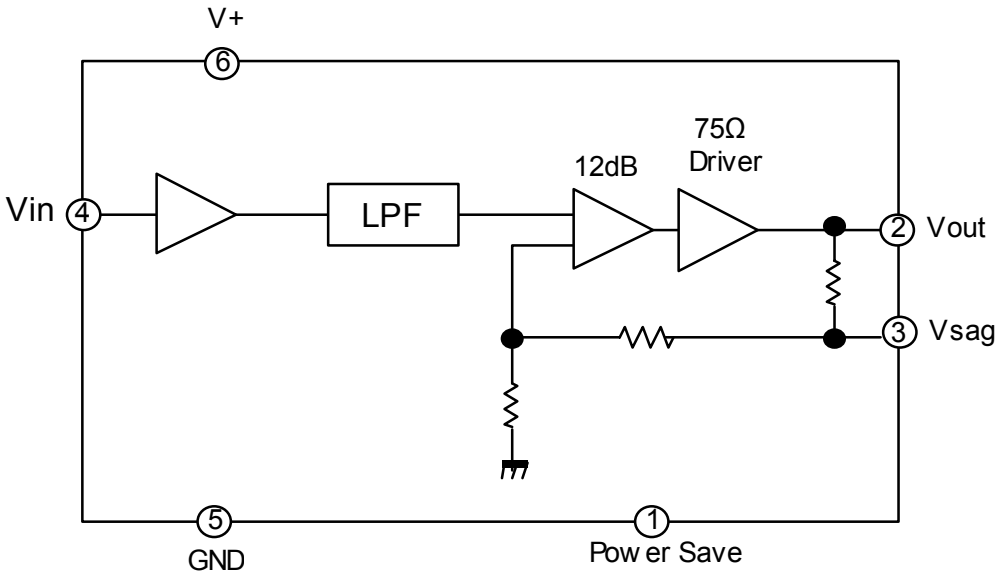
■PACKAGE OUTLINE

NJM2578KJ1

■FEATURES

- Operating Voltage 2.8 to 5.5V
- Input coupling capacitor is not necessary
- 12dB amplifier
- Internal LPF -23dB at 23.5MHz typ.
- Internal 75Ω Driver Circuit (2-system drive)
- Power Save Circuit
- Bipolar Technology
- Package Outline SON6

■BLOCK DIAGRAM



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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	7.0	V
Power Dissipation	P_D	150	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +125	°C

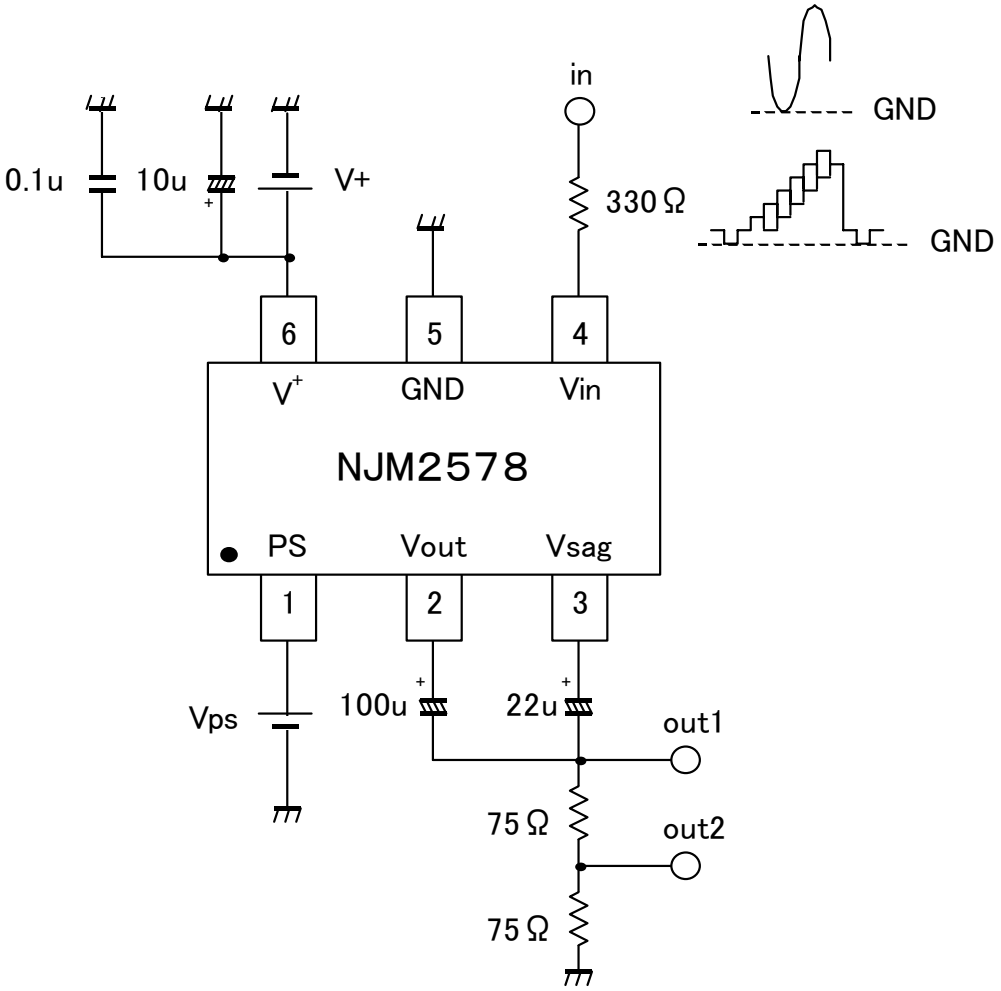
■**ELECTRICAL CHARACTERISTICS** (V^+=3.0V,R_L=150Ω,Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	Vopr		2.8	3.0	5.5	V
Operating Current	I_{CC}	No Signal	-	9.0	12.0	mA
Operating Current at Power Save	Isave	Power Save Mode	-	10	25	uA
Maximum Output Voltage Swing	Vomv	f=100kHz,THD=1%	2.2	2.6	-	Vp-p
Voltage Gain	Gv	Vin=100kHz, 0.5Vp-p, Input Sine Signal	12.0	12.4	12.8	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	-	
	Gfy19M	Vin=19MHz/100kHz, 0.5Vp-p	-	-23	-17	
Differential Gain	DG	Vin=0.5Vp-p, 10step Video Signal	-	0.5	-	%
Differential Phase	DP	Vin=0.5Vp-p, 10step Video Signal	-	0.5	-	deg
S/N Ratio	SNv	Vin=0.5Vp-p, R_L=75Ω 100% White Video Signal, 100KHz to 6MHz	-	+60	-	dB
2nd. Distortion	Hv	Vin=0.5Vp-p, 3.58MHz,Sine 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**

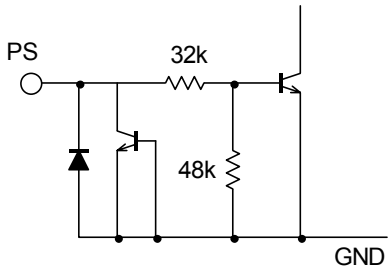
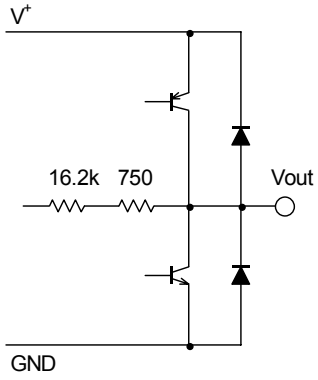
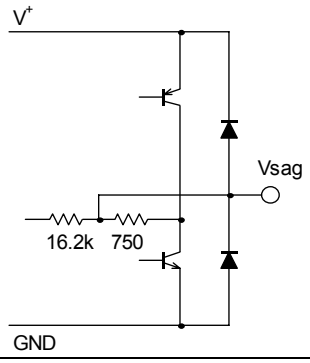
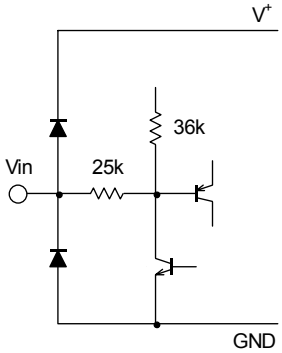
PARAMETER	STATUS	NOTE
Power Save	H	Power Save: OFF
	L	Power Save: ON
	OPEN	Power Save: ON

■TEST CIRCUIT



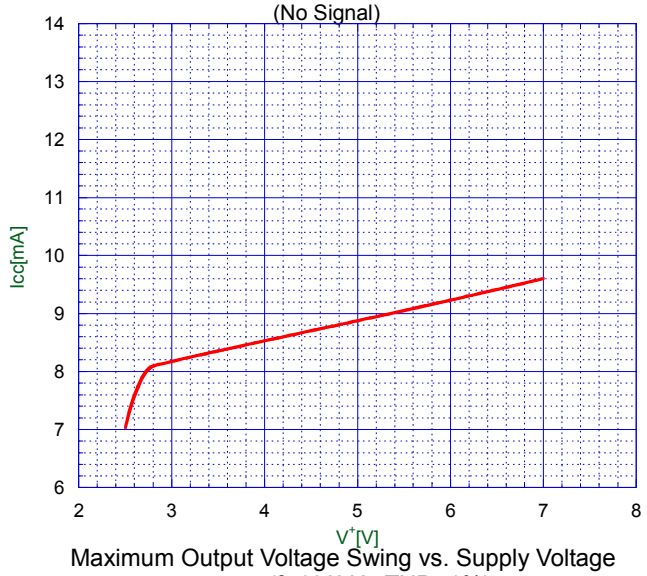
Please input the signal, which made the bottom end of a waveform the GND level.
Please do not set an input terminal to OPEN at non-signal.

■ **EQUIVARENT CIRCUIT**

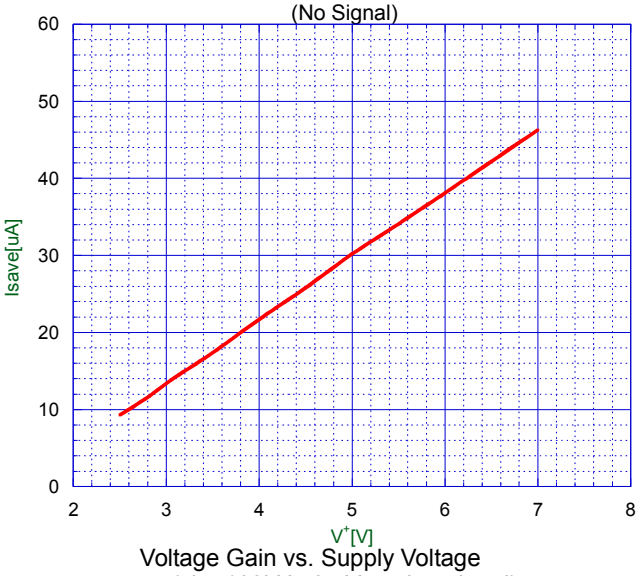
PIN No.	SYNBOL	INSIDE EQUIVARENT CIRCUIT
1	Power Save	
2	Vout	
3	Vsag	
4	Vin	
5	GND	
6	V^+	

■ TYPICAL CHRACTERISTICS

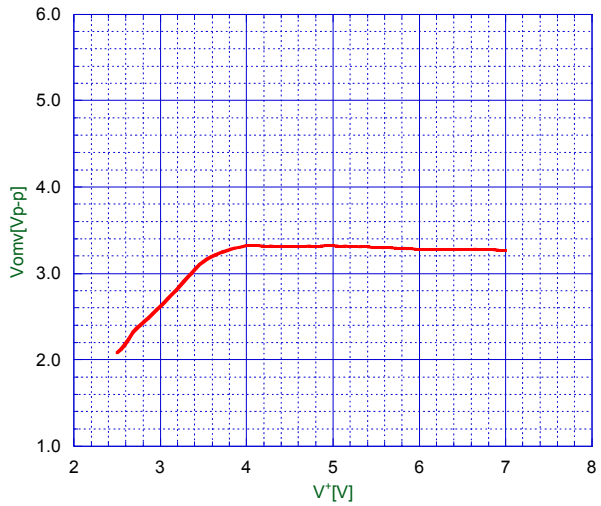
Supply Current vs. Supply Voltage
(No Signal)



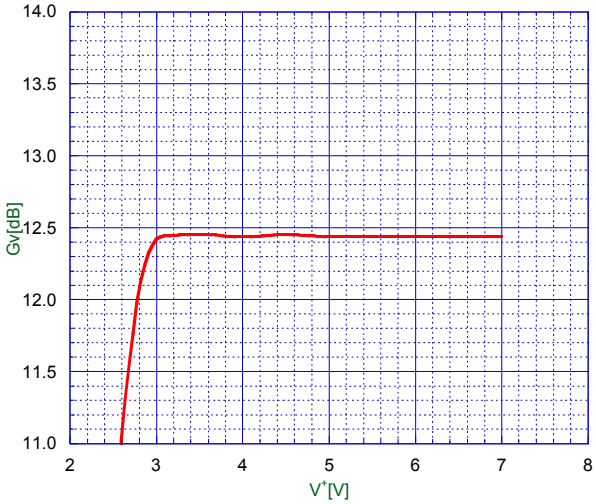
Supply Current at Power Save Mode vs. Supply Voltage
(No Signal)



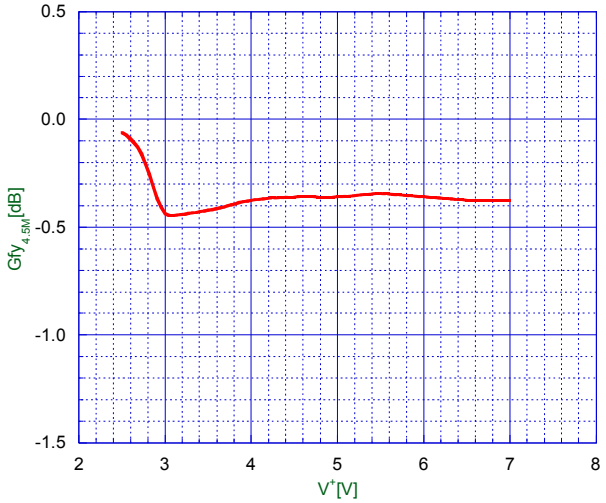
Maximum Output Voltage Swing vs. Supply Voltage
(f=100kHz,THD=1%)



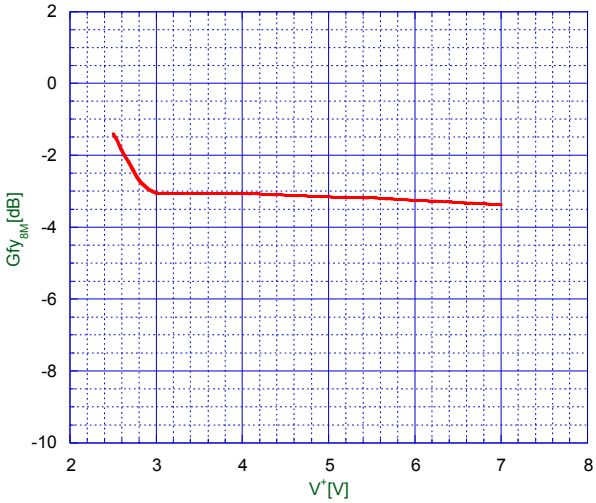
Voltage Gain vs. Supply Voltage
(vin=100kHz,0.5Vpp sine-signal)



LPF Characteristic vs. Supply Voltage
(vin=4.5MHz/100kHz,0.5Vpp)

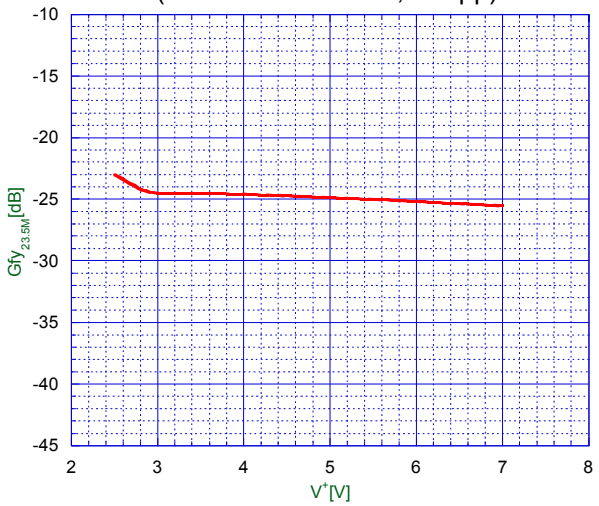


LPF Characteristic vs. Supply Voltage
(vin=8MHz/100kHz,0.5Vpp)

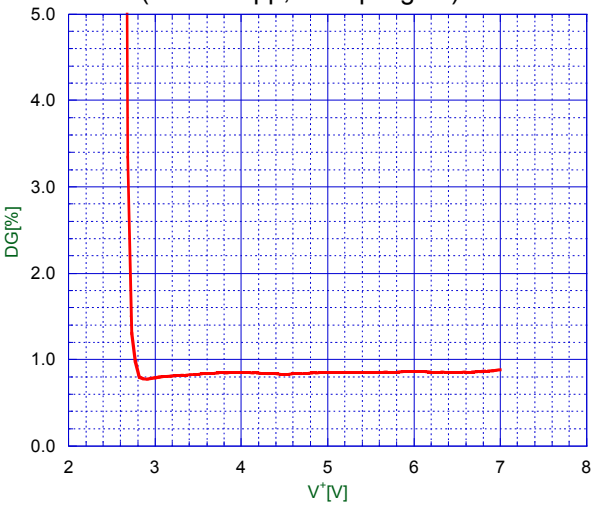


■ TYPICAL CHRACTERISTICS

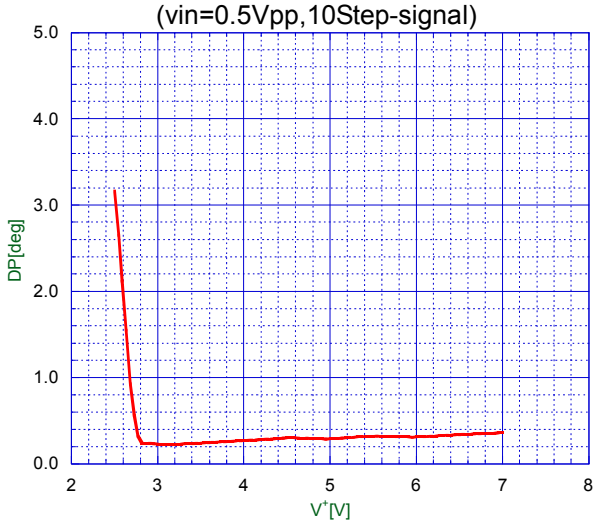
LPF Characteristic vs. Supply Voltage
(vin=19MHz/100kHz,0.5Vpp)



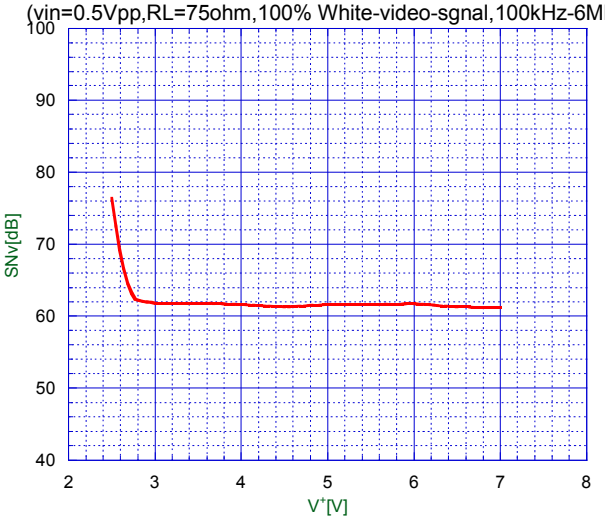
Differential Gain vs. Supply Voltage
(vin=0.5Vpp,10Step signal)



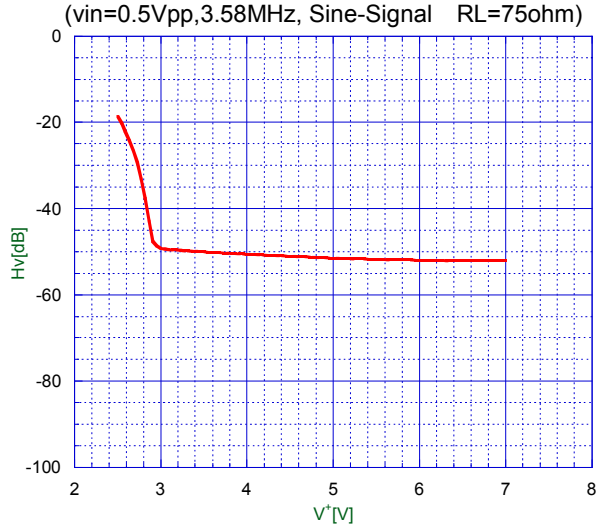
Differential Phase vs. Supply Voltage
(vin=0.5Vpp,10Step-signal)



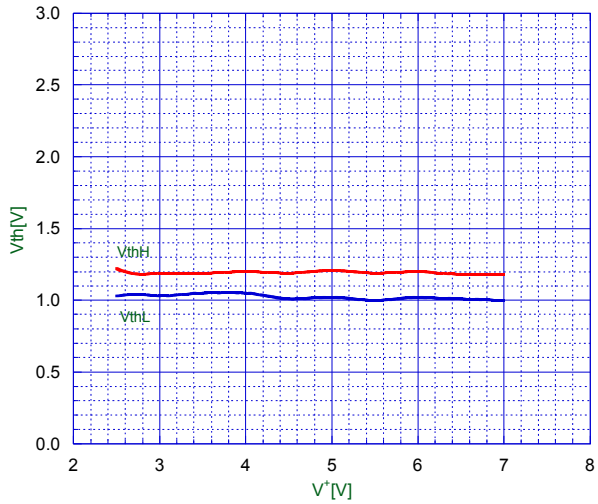
S/N Ratio vs.Supply Voltage
(vin=0.5Vpp,RL=75ohm,100% White-video-sgnal,100kHz-6MHz)



2nd.Distortion vs. Supply Voltage
(vin=0.5Vpp,3.58MHz, Sine-Signal RL=75ohm)

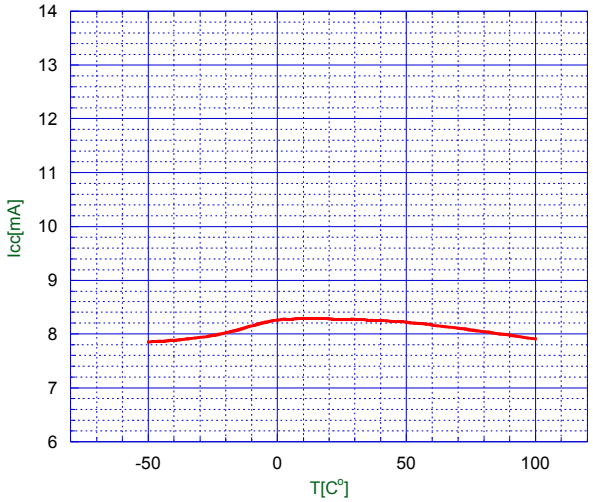


SW Change Voltage vs.Supply Voltage

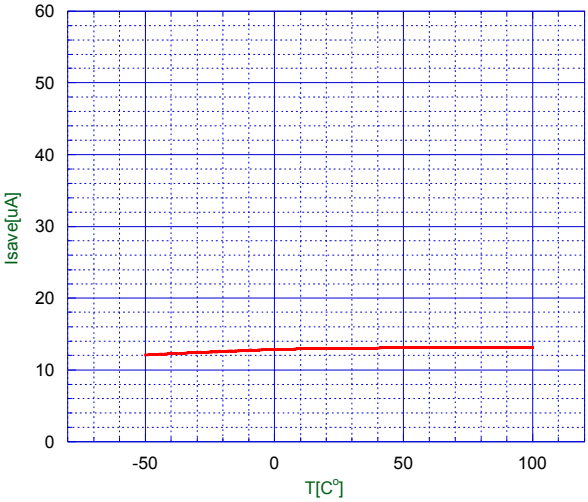


■ TYPICAL CHRACTERISTICS

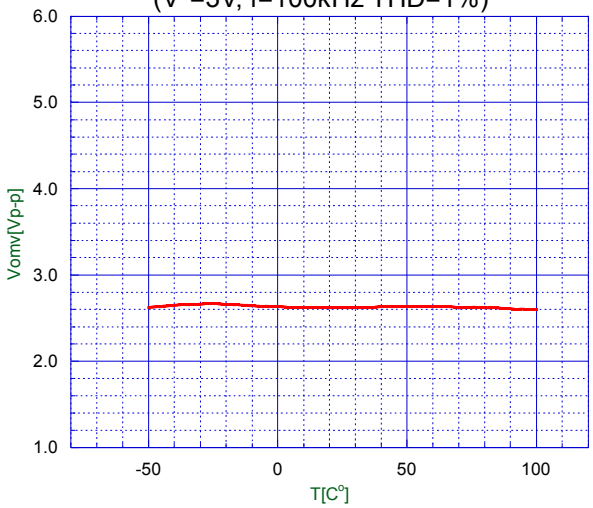
Supply Current vs. Temperature
(V^+=3V No Signal)



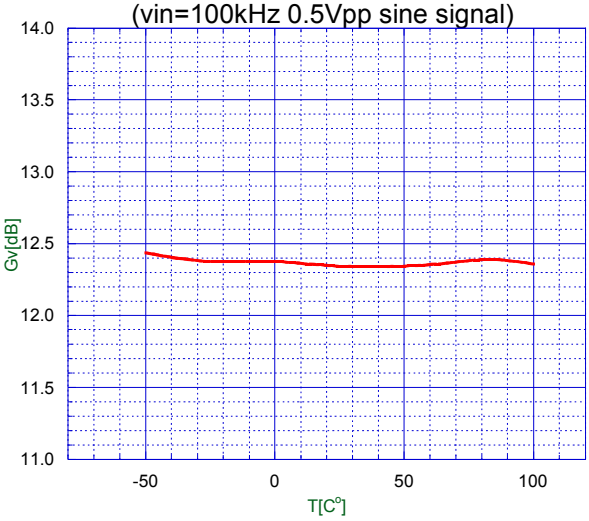
Supply Current at Power Save Mode vs. Temperature
(V^+=3V No Signal)



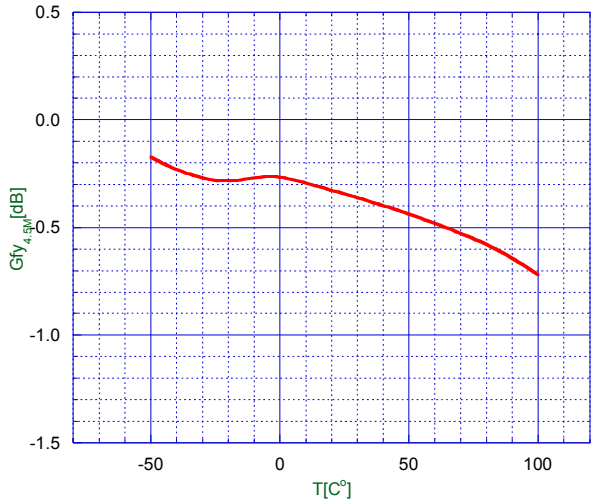
Maximum Output Voltage Swing vs. Temperature
(V^+=3V, f=100kHz THD=1%)



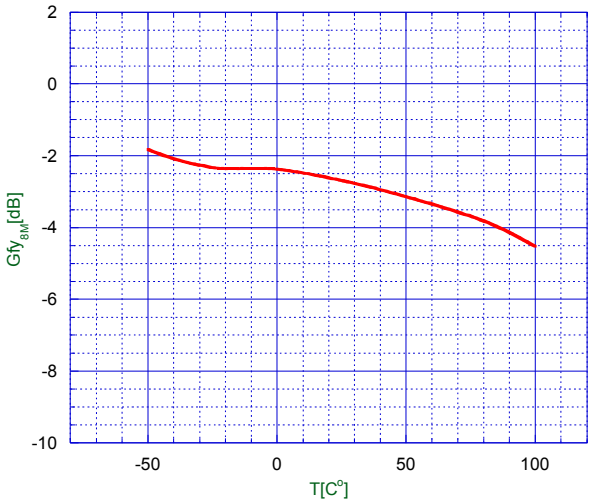
Voltage Gain vs. Temperature
(vin=100kHz 0.5Vpp sine signal)



LPF Characteristics vs. Temperature
(V^+=3V, vin=4.5MHz/100kHz 0.5Vpp)

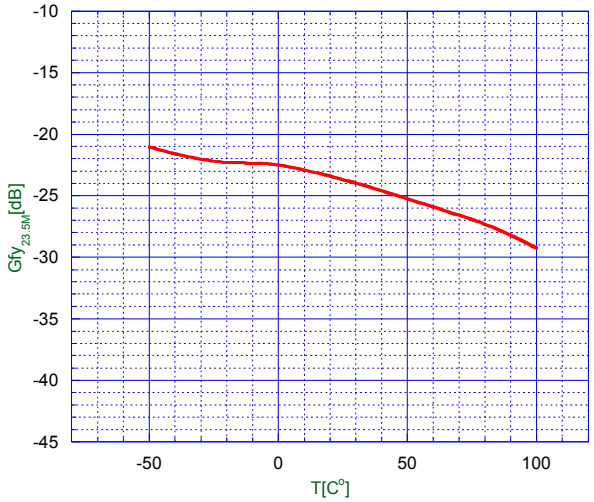


LPF Characteristics vs. Temperature
(V^+=3V, vin=8MHz/100kHz 0.5Vpp)

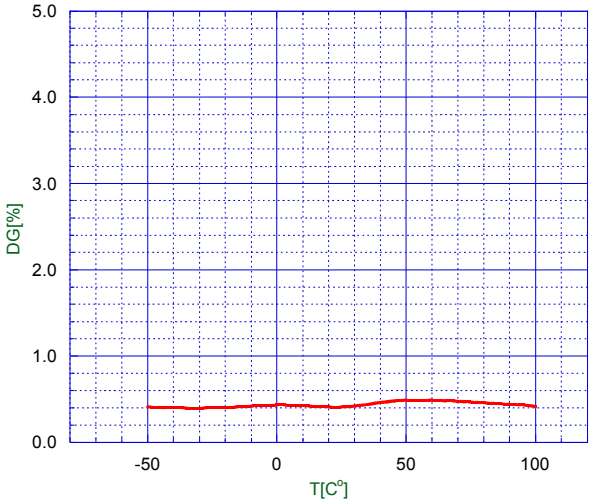


■ TYPICAL CHRACTERISTICS

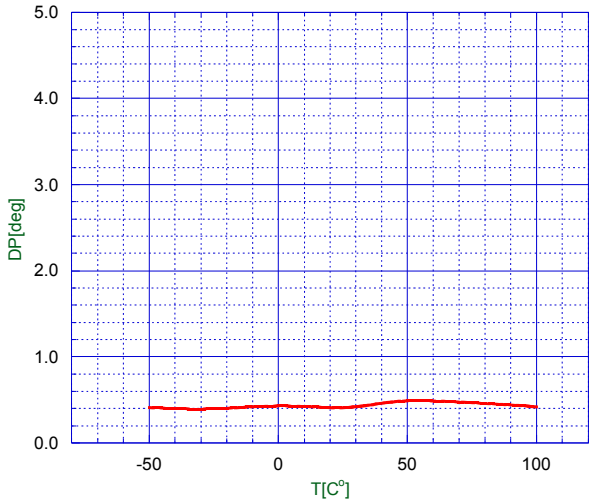
LPF Characteristics vs. Temperature
(V^+=3V, vin=19MHz/100kHz 0.5Vpp)



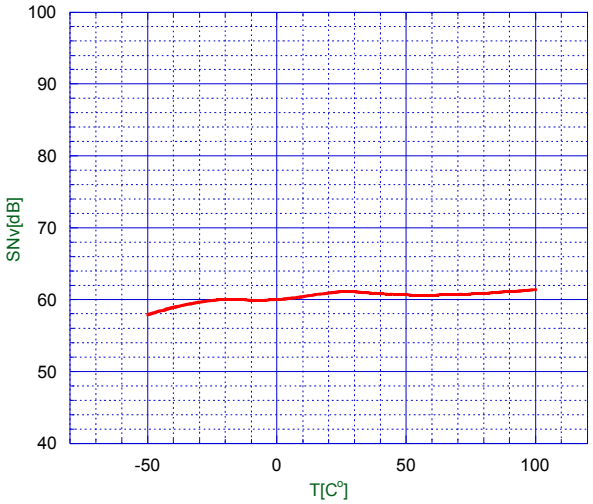
Differential Gain vs. Temperature
(V^+=3V, vin=0.5Vpp 10Step-signal)



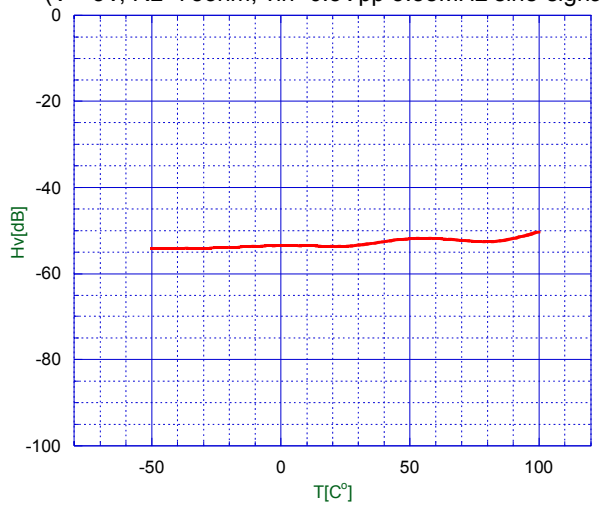
Differential Phase vs. Temperature
(V^+=3V, vin=0.5Vpp 10Step-signal)



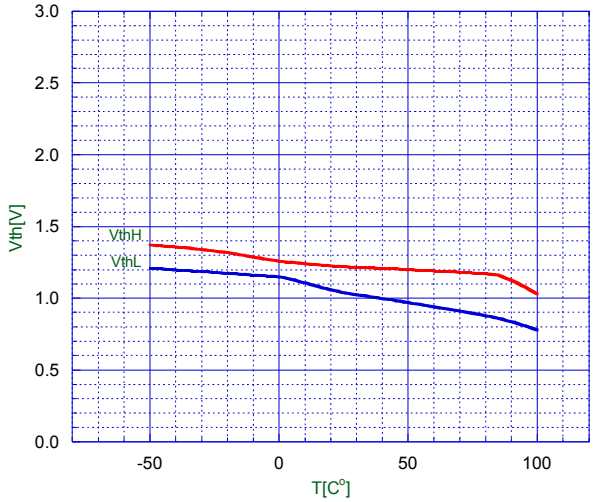
S/N Ratio vs. Temperature
(V^+=3V, RL=75ohm,vin=0.5Vpp White Video Signal 100kHz to 6MHz)



2nd Distortion vs. Temperature
(V^+=3V, RL=75ohm, vin=0.5Vpp 3.58MHz sine-signal)



SW Change Voltage vs. Temperature



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