

## SINGLE ISOLATION AMPLIFIER

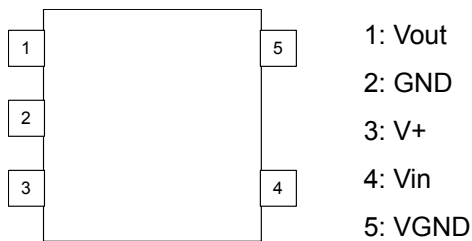
### ■ GENERAL DESCRIPTION

NJM2505A is the single isolation amplifier developed by the video signal. It can remove the noise of a signal with isolation amplifier and carries in the small package (MTP5), it is suitable for the interface of the video signal of a car AV system.

### ■ FEATURES

- Operating Voltage 4.5 to 9.0V
- Input: Sync-tip Clamp
- Common Mode Noise Rejection Ratio -55dBtyp.
- Voltage Gain 0dBtyp.
- Frequency Characteristics 0dBtyp.at 10MHz
- Bipolar Technology
- Package MTP5

### ■ PIN CONFIGURATION

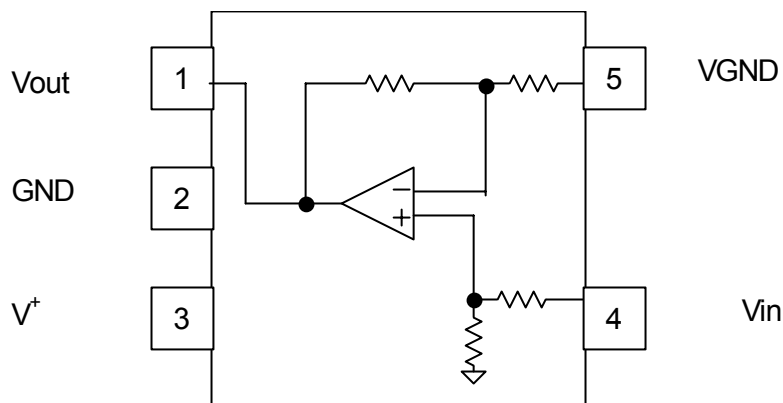


### ■ PACKAGE OUTLINE



NJM2505AF

### ■ BLOCK DIAGRAM



# NJM2505A

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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup>	15.0	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

## ■ RECOMMENDED OPERATING CONDITION(Ta=25°C)

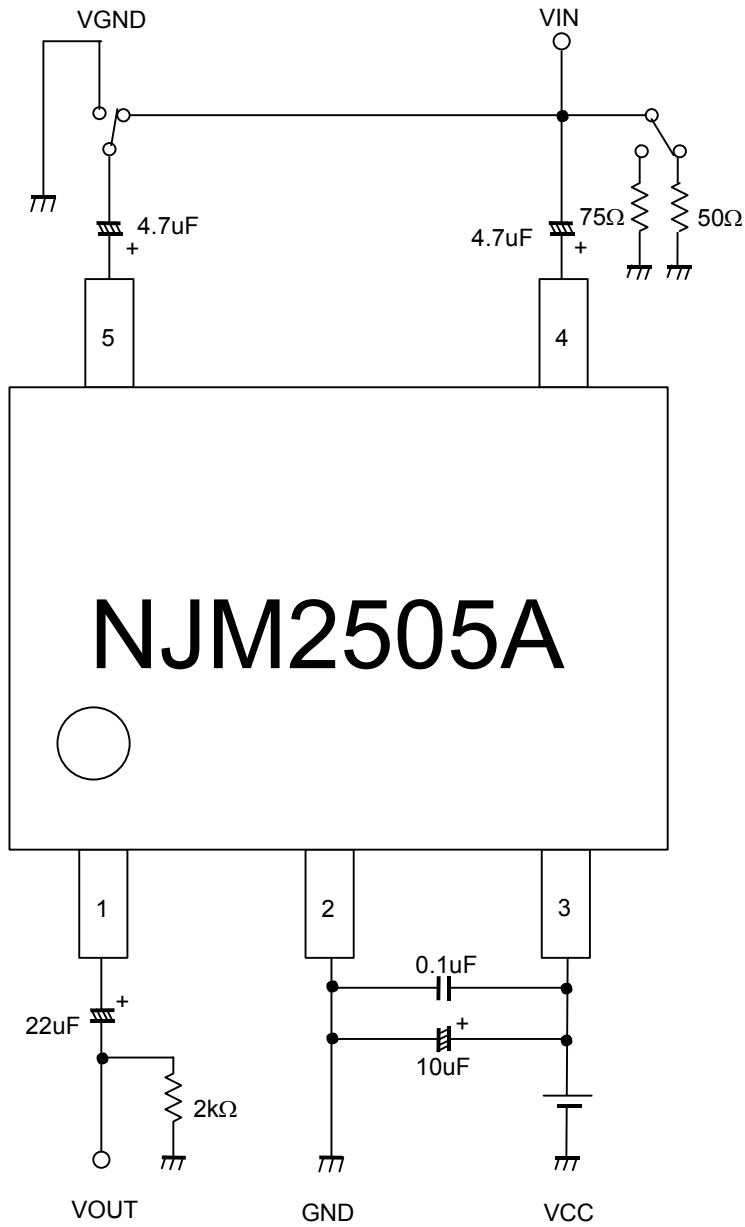
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage Range	Vopr		4.5	-	9.0	V

## ■ ELECTRICAL CHARACTERISTICS( V<sup>+</sup> =5.0V, Ta=25°C)

PARAMETR	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	I <sub>CC</sub>	No Signal	-	3.0	6.0	mA
Maximum Output Voltage Level	Vom	Vin=100kHz, Sin-Signal, THD=1%,	2.0	2.2	-	Vp-p
Voltage Gain	Gv	Vin=100kHz, 1.0Vp-p, Sin-Signal	-1.0	0	1.0	dB
Frequency Characteristics	Gf	Vin=10MHz / 1MHz , 1.0VppSin-Signal	-1.0	0	1.0	dB
Common Mode Noise Rejection Ratio	CMR	Vin=20KHz, Vin=1Vpp	-	-55	-	dB
Differential Gain	DG	Vin=1.0Vp-p, 10step Video Signal	-	0.3	-	%
Differential Phase	DP	Vin=1.0Vp-p, 10step Video Signal	-	0.4	-	deg

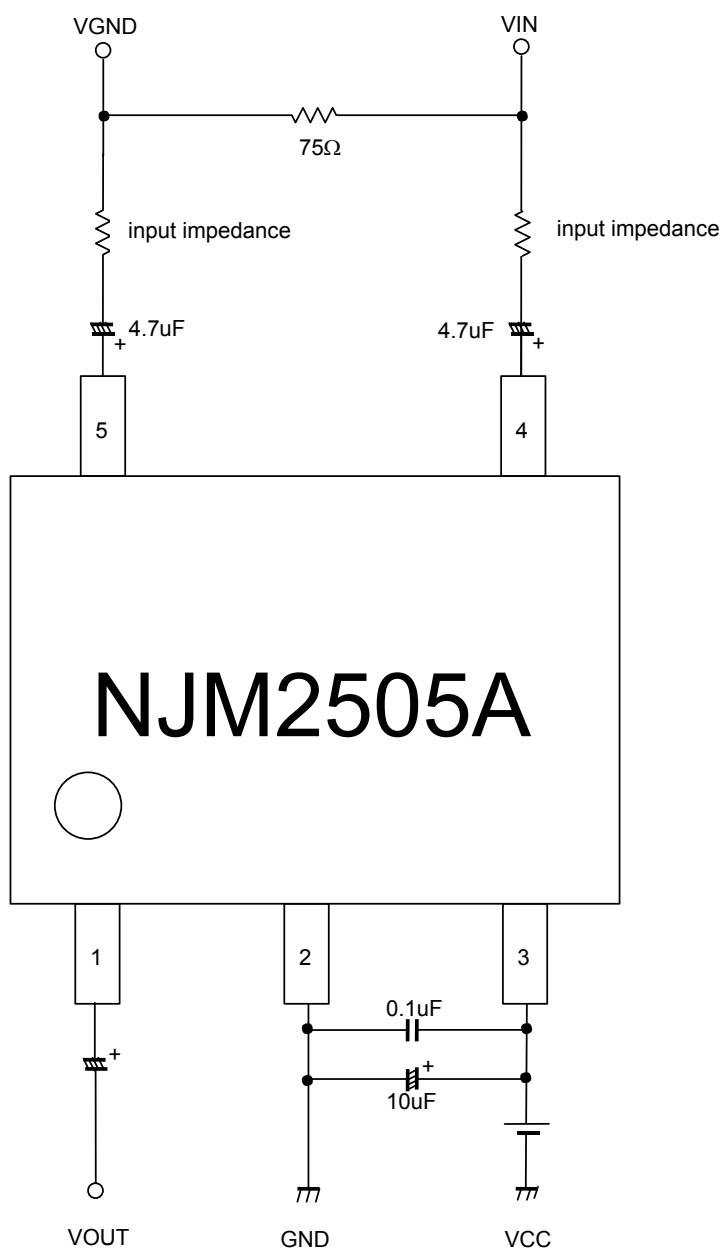
## ■ TEST CIRCUIT

When CMR is measured, VGND is connected with VIN.



# NJM2505A

## ■ APPLICATION CIRCUIT



\* NJM2505A don't built-in 75Ω driver circuit. This IC's load capability is than 2kΩ.  
Please make adequate evaluation.

## APPLICATION

1: Please connect input surge resistance to 4pin(Vin) and 5pin(VGND). Please refer to Fig. 1. If resistance is enlarged, a waveform may deteriorate.

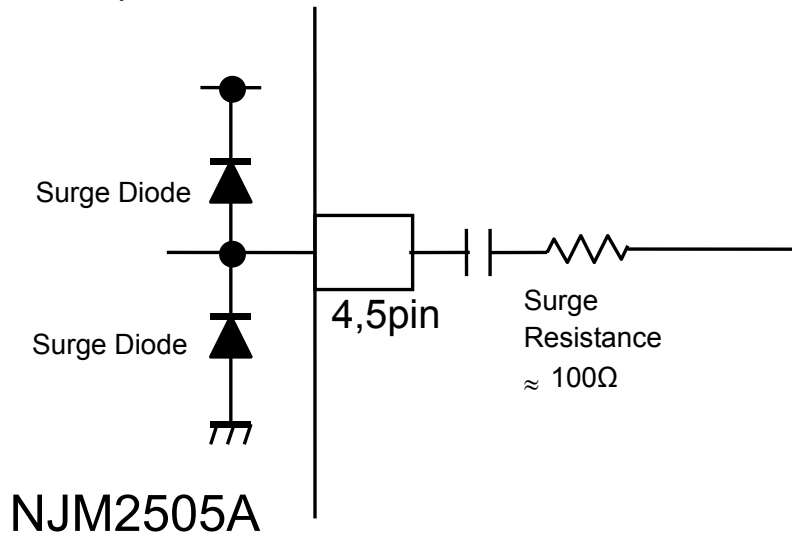


Fig1: External connection

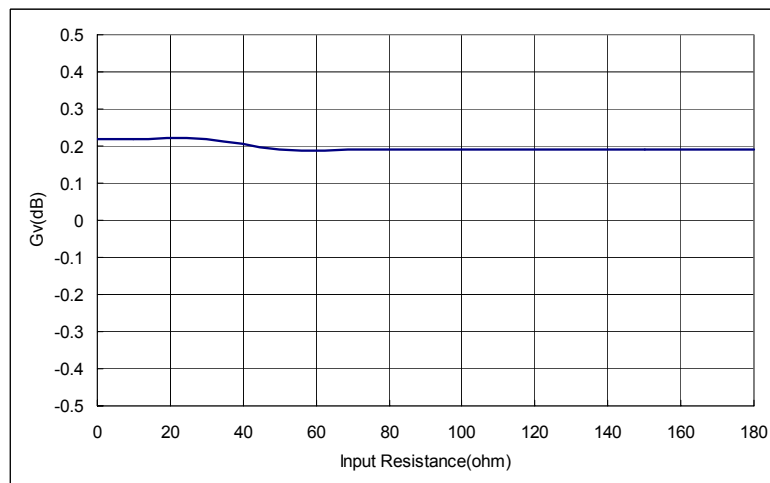


Fig2: Input resistance vs. Voltage gain

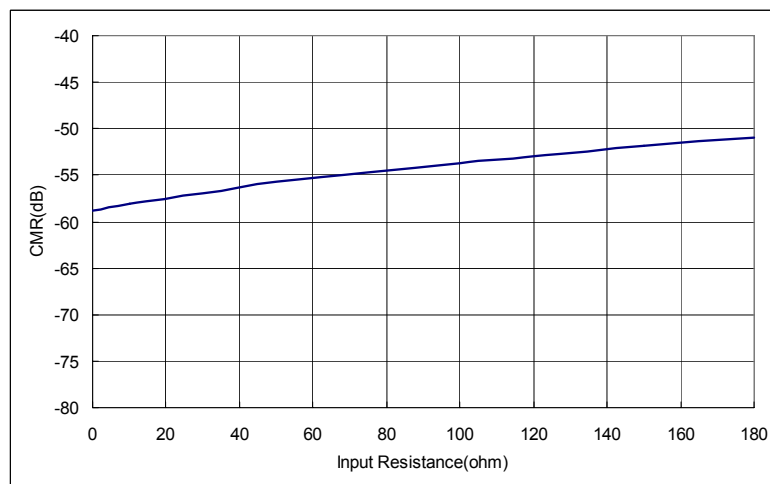


Fig3: Input resistance vs. Common mode rejection ratio

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2: Please connect a diode in a VGND at large common mode noise may be inputted into a Vin(4pin) and VGND(5pin). Thereby, large common noise is restricted(refer to Fig.4).Current flows to a diode. Be careful of current capacity.

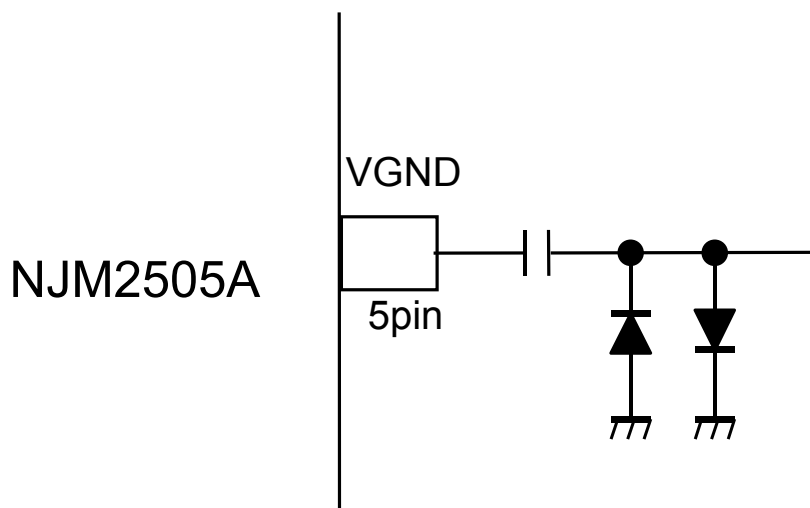


Fig4: External connection

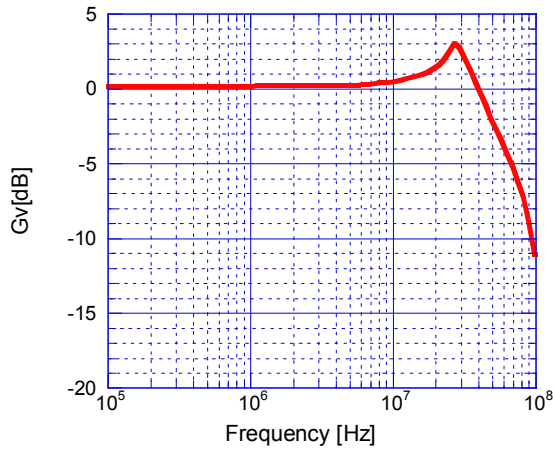
## ■ EQUIVALENT CIRCUIT

Pin.No	Symbol	Inside Equivalent Circuit	Voitage
1	Vout		0.92V
2	GND	-	-
3	V <sup>+</sup>	-	-
4	Vin		1.67V
5	VGND		1.67V

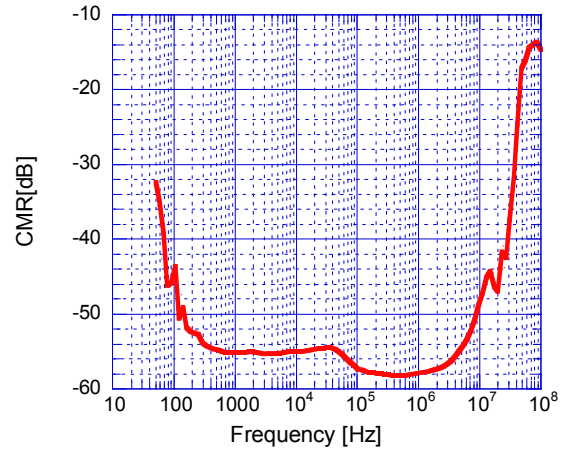
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## ■ TYPICAL CHARACTERISTICS

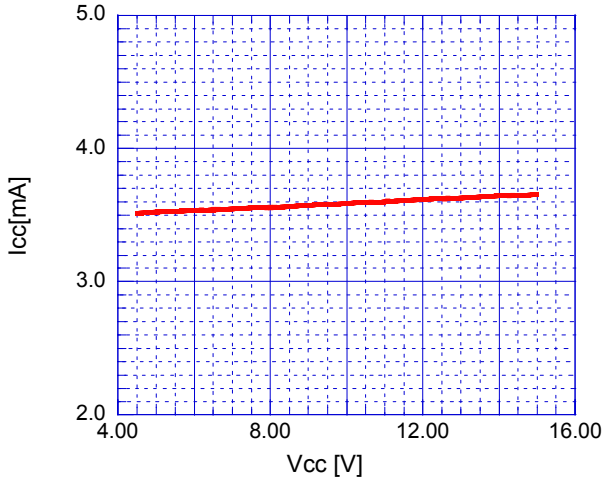
Voltage gain vs. Frequency  
( $V_{in}=100\text{kHz}$ ,  $1.0\text{Vp-p}$ ,  $T_a=25^\circ\text{C}$ )



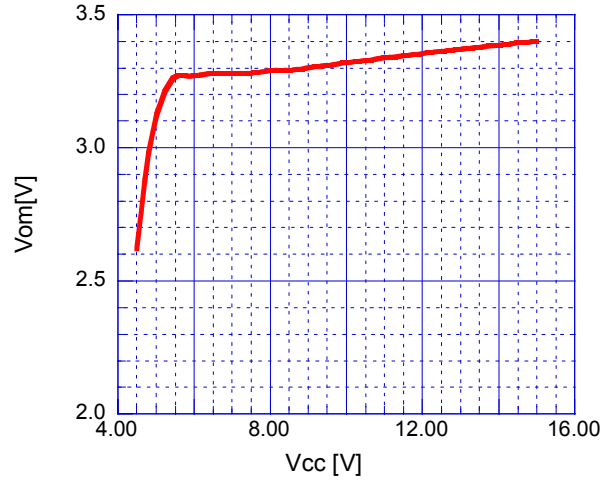
Common mode rejection ratio vs. Frequency  
( $V_{in}=1.0\text{Vp-p}$ ,  $T_a=25^\circ\text{C}$ )



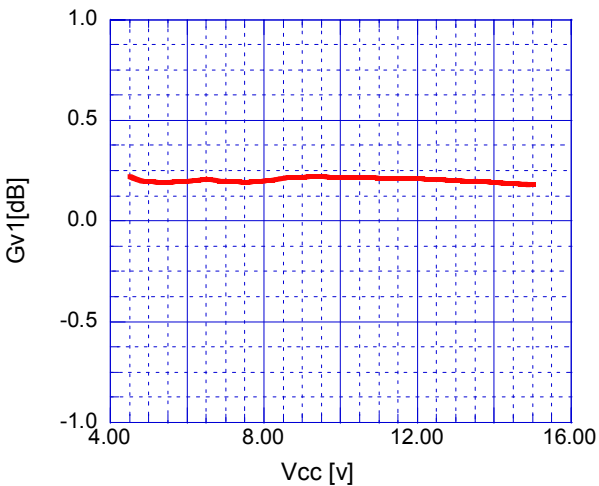
Supply current vs. Supply voltage  
( $T_a=25^\circ\text{C}$ )



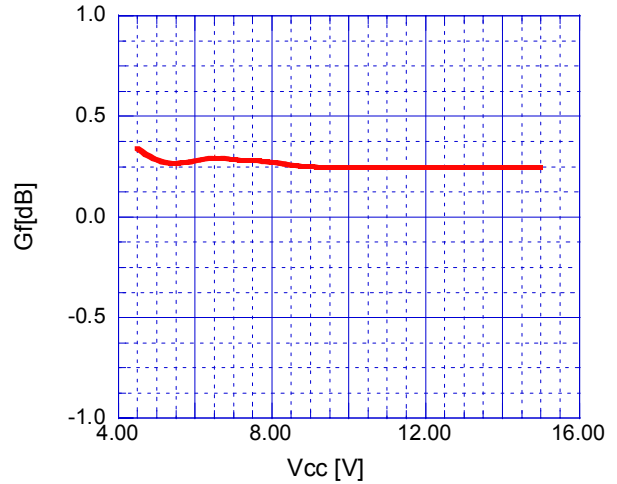
Maximum output voltage vs. Supply voltage  
( $V_{in}=100\text{kHz}$ ,  $T_a=25^\circ\text{C}$ )



Voltage gain vs. Supply voltage  
( $V_{in}=100\text{kHz}$ ,  $1.0\text{Vpp}$ ,  $T_a=25^\circ\text{C}$ )

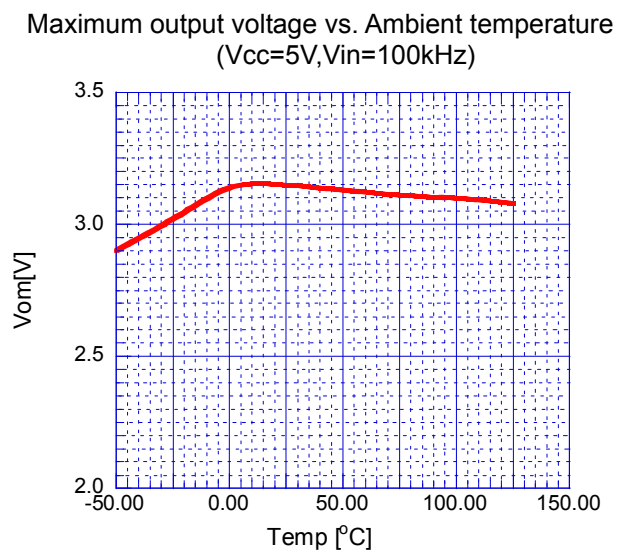
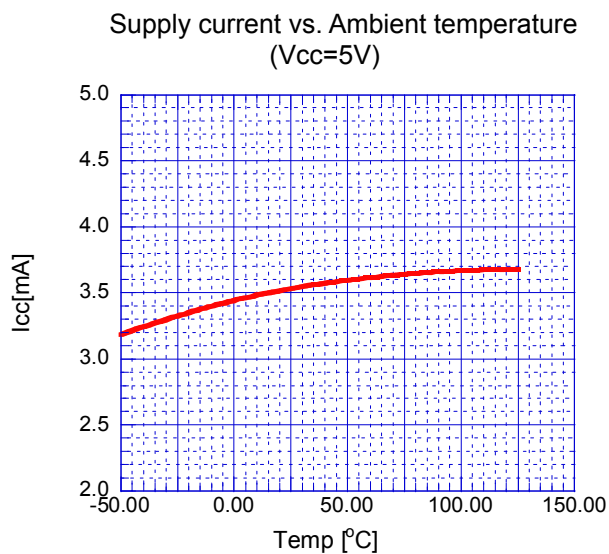
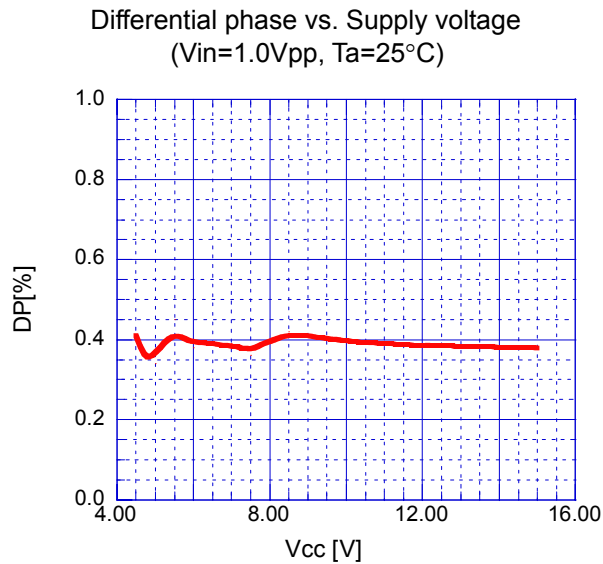
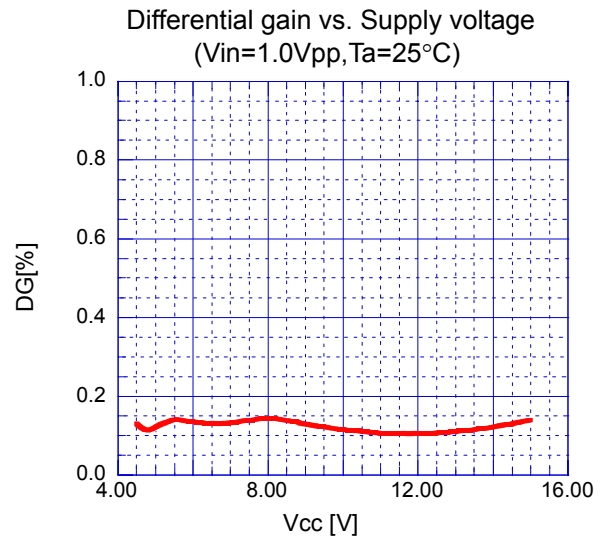
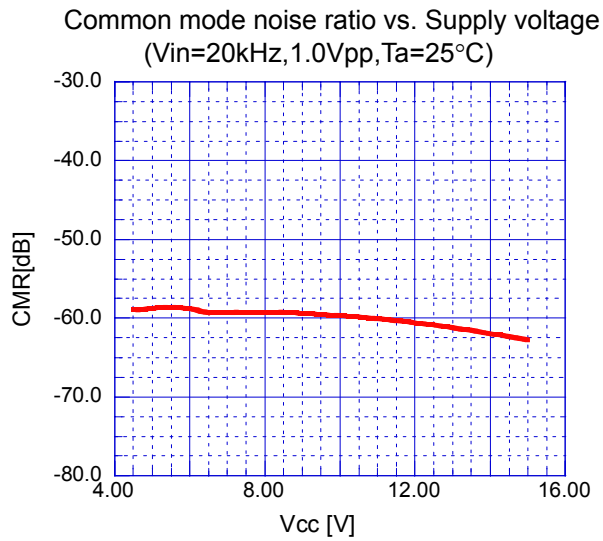


Frequency characteristics vs. Supply voltage  
( $V_{in}=1.0\text{Vpp}$ ,  $10\text{MHz}/1\text{MHz}$ ,  $T_a=25^\circ\text{C}$ )

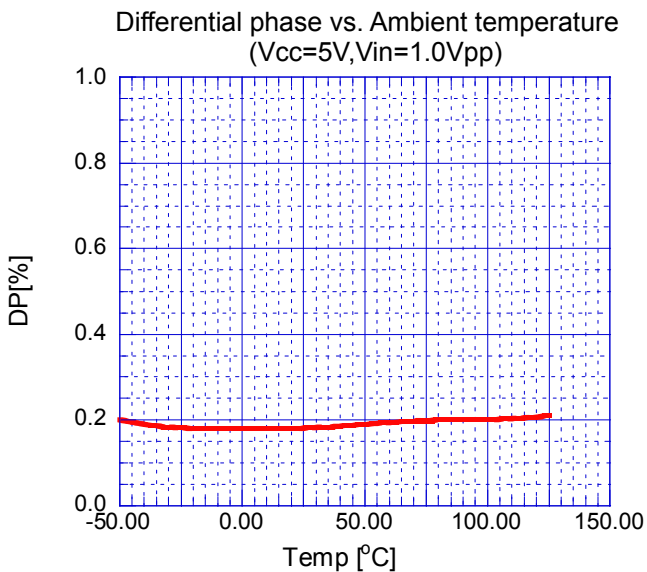
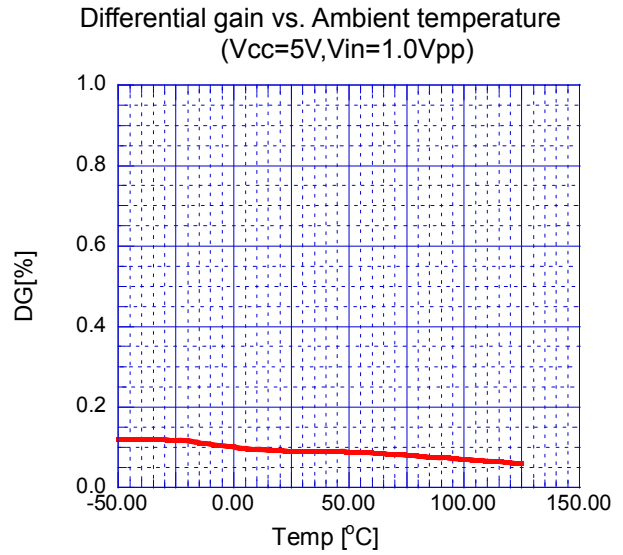
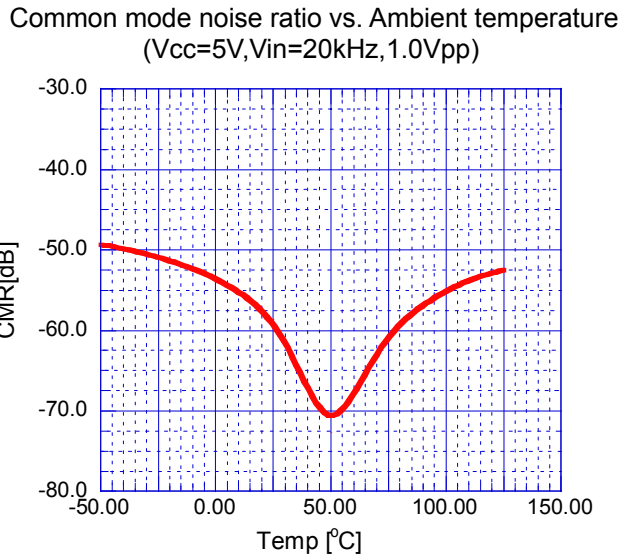
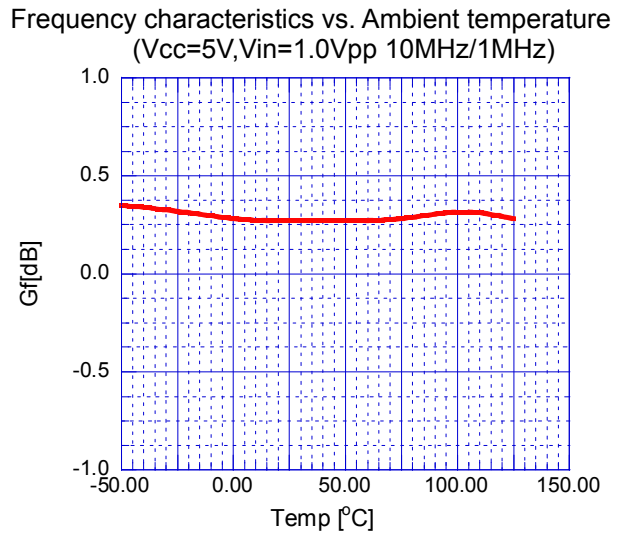
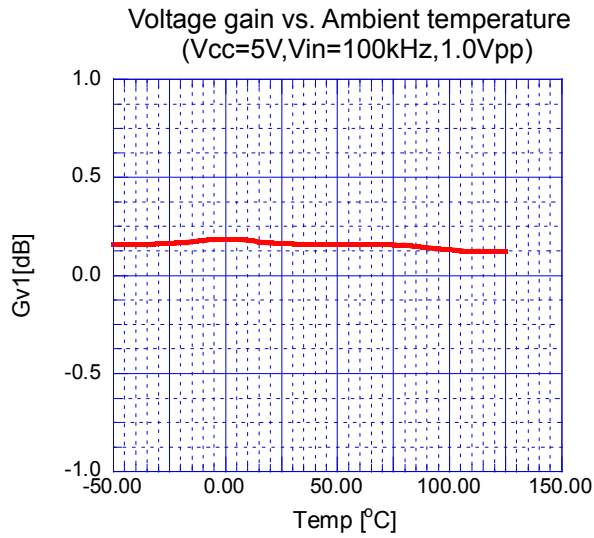




## ■ TYPICAL CHARACTERISTICS



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