TRIPLE ISOLATION AMPLIFIER

■ GENERAL DESCRIPTION

NJM41033 is the triple isolation amplifier developed for the component video signal. It can remove the noise of a signal with isolation amplifier. It is suitable for the interface of the video signal of a car AV system.

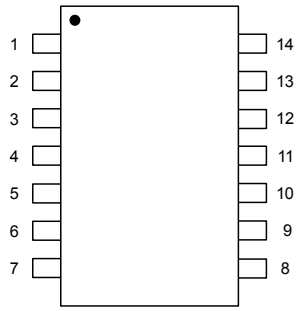
■ PACKAGE OUTLINE

NJM41033V

■ FEATURES

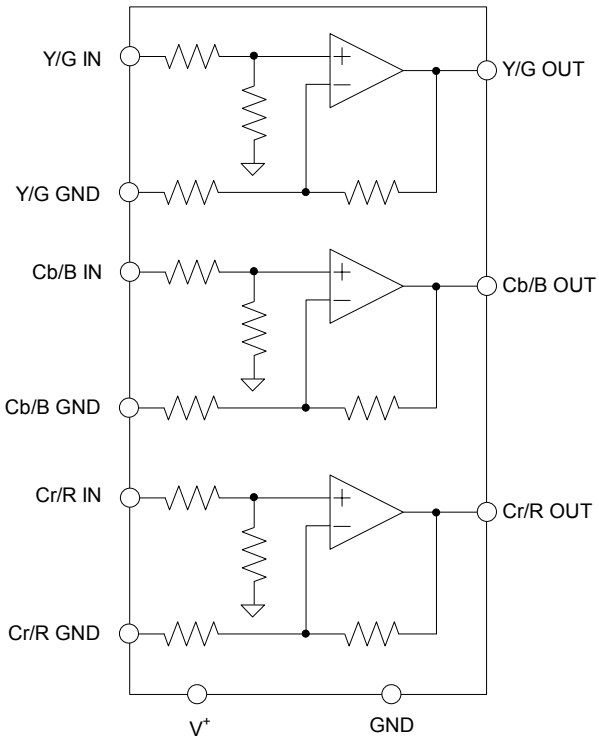
- Operating Voltage 2.6 to 5.5V
- Common Mode Noise Rejection Ratio –55dBtyp.
- Voltage Gain 0dBtyp.
- Frequency Characteristics 0dBtyp.at 13.5MHz(for 480p)
- Bipolar Technology
- Package SSOP14

■ PIN CONFIGURATION



1. Y/G in
2. Y/G GND
3. GND
4. Cb/B in
5. Cb/B GND
6. Cr/R in
7. Cr/R GND
8. N.C.
9. Cr/R out
10. N.C.
11. Cb/B out
12. V+
13. Y/G out
14. N.C.

■ BLOCK DIAGRAM



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

PARAMETERS	SYMBOL	RATINGS	UNIT
Supply Voltage	V+	15.0	V
Power Dissipation	P_D	440(Note)	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +125	°C

(Note 1) At on a board of EIA/JEDEC specification. (114.3 x 76.2 x 1.6mm 2 layers, FR-4)

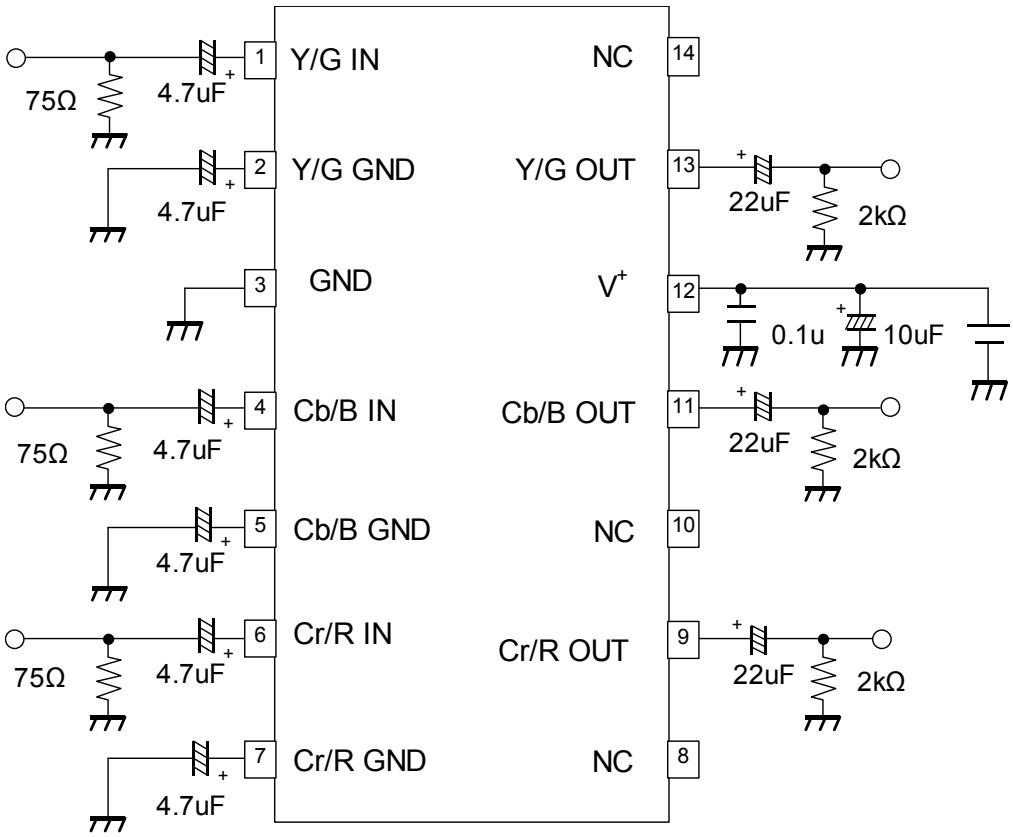
■ **RECOMMENDED OPEARATING CONDITION** (Ta= 25 °C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	Vopr		+2.6	-	+5.5	V

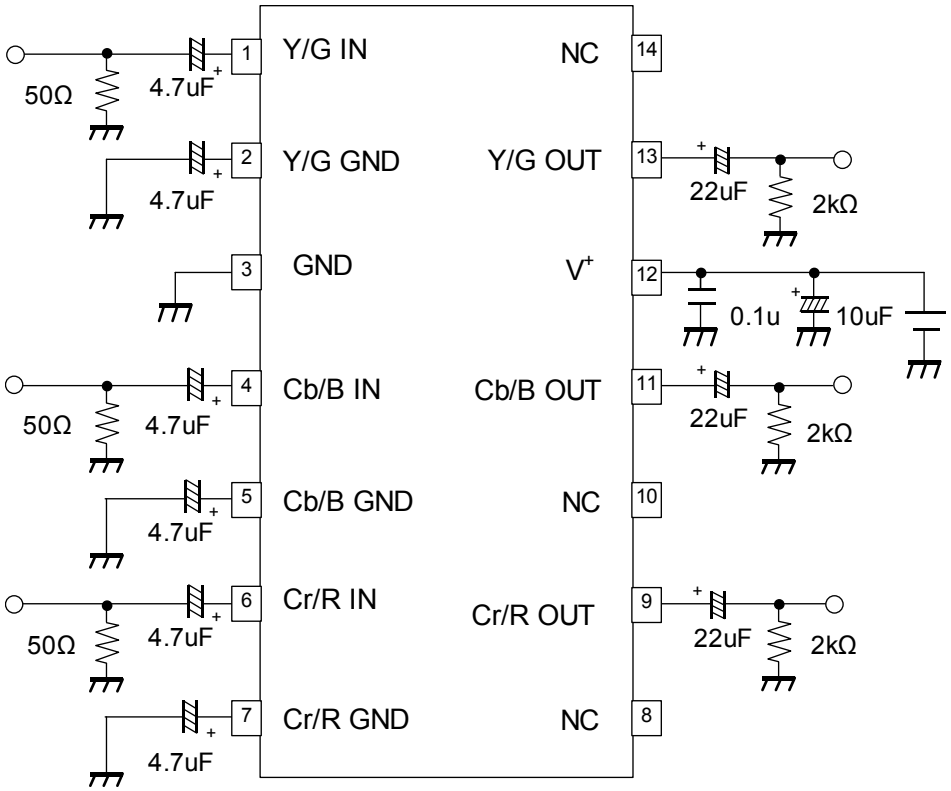
■**ELECTRICAL CHARACTERISTICS** (Vcc= 5.0V, Ta= 25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	I_{CC}	No signal	-	23	29	mA
Maximum Output Level	Vom	Vin=100kHz,sin-signal, THD=1%,	3.9	4.6	-	Vp-p
Voltage Gain	Gv	Vin=100kHz, 1.0Vp-p sin-signal	-1.0	0	1.0	dB
Frequency Characteristics	Gf	Vin=13.5MHz/ 1MHz ,1.0Vpp sin-signal	-1.0-	0	1.0	dB
Common Mode Noise Ratio	CMR	Vin=20KHz,Vin=1Vpp	-	-55	-	dB
Differential Gain	DG	Vin=1.0Vp-p 10step video signal	-	0.5	-	%
Differential Phase	DP	Vin=1.0Vp-p 10step video signal	-	0.5	-	deg
Channel Cross-talk	CT	Vin=13.5MHz,1.0Vp-p	-	-55	-	dB

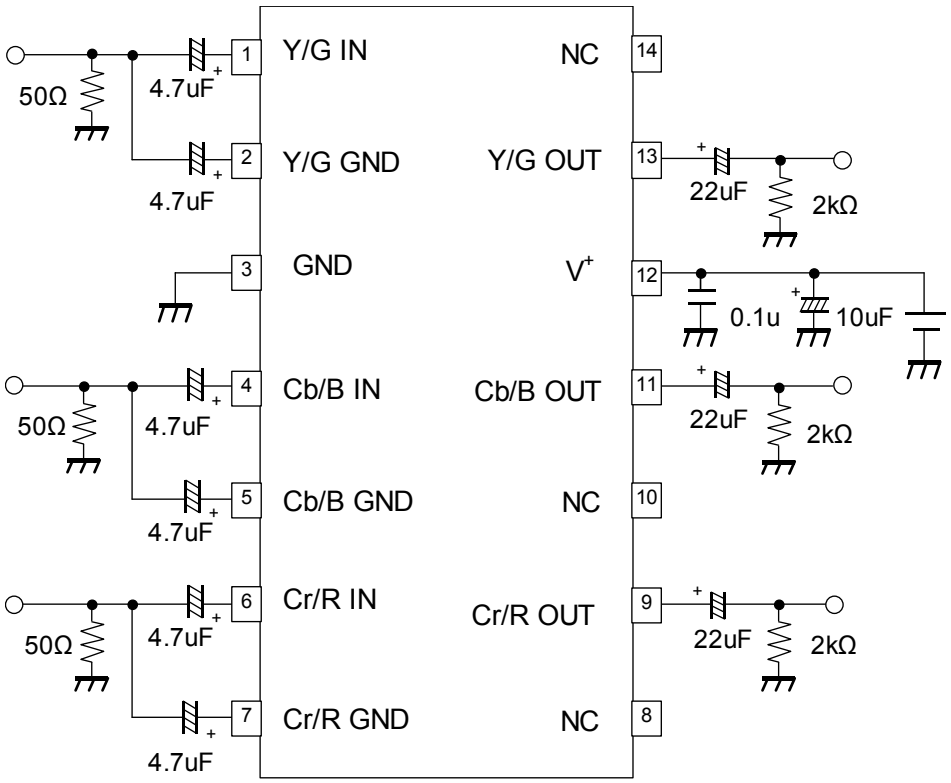
■ **TEST CIRCUIT 1 (Icc, Vom,DG,DP,S/N)**



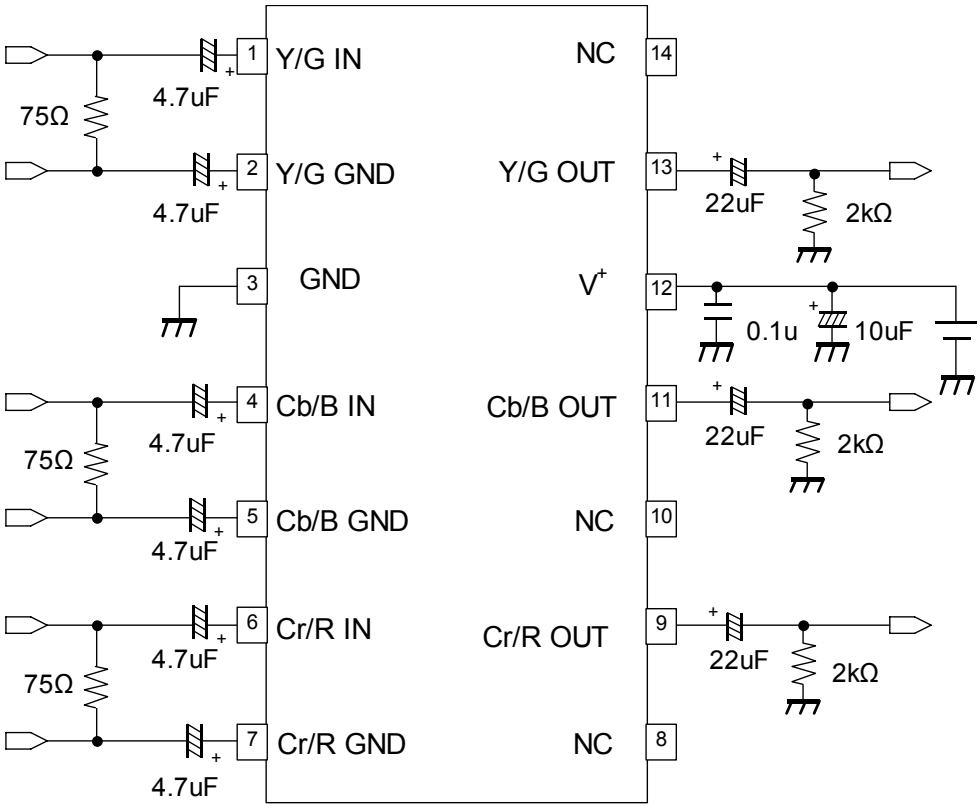
■ **TEST CIRCUIT 2 (Gf, Gv)**



■ **TEST CIRCUIT 3 (CMRR)**

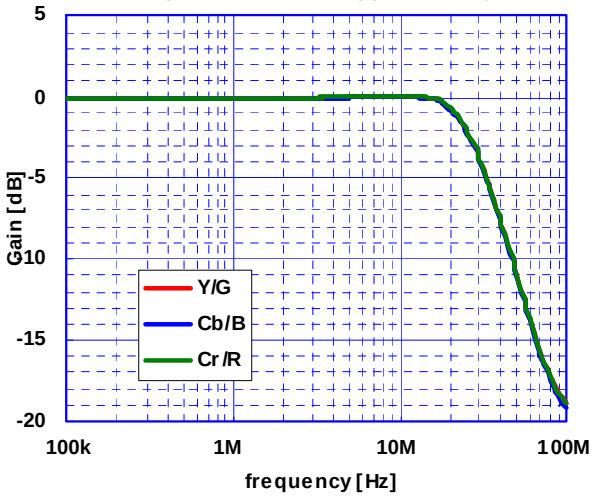


■ **APPLICATION CIRCUIT**

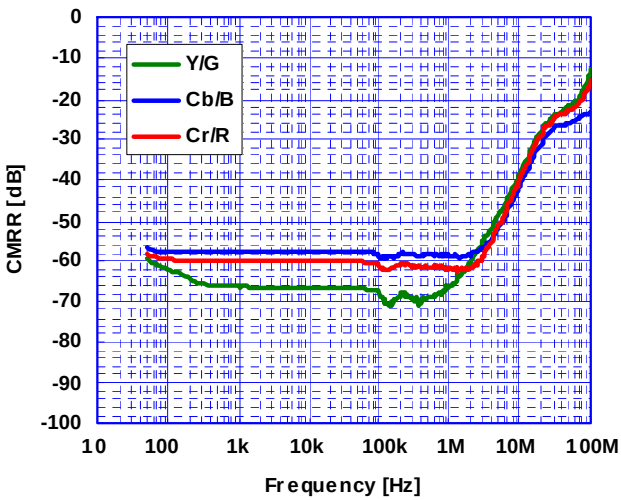


■TYPICAL CHARACTERISTICS

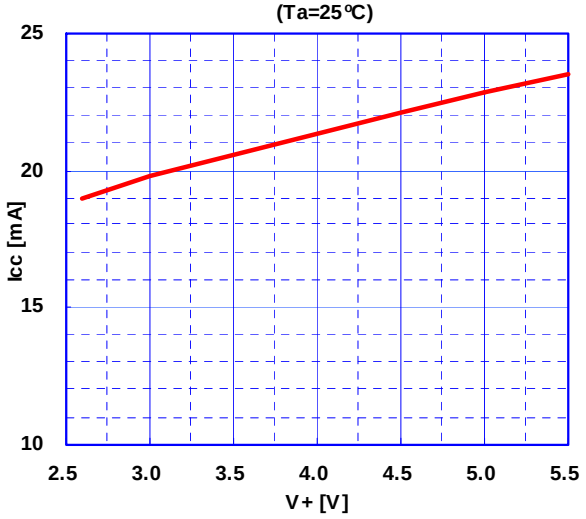
Voltage gain vs Frequency
(V+=5.0V , VIN=1.0Vpp , Ta=25ºC)



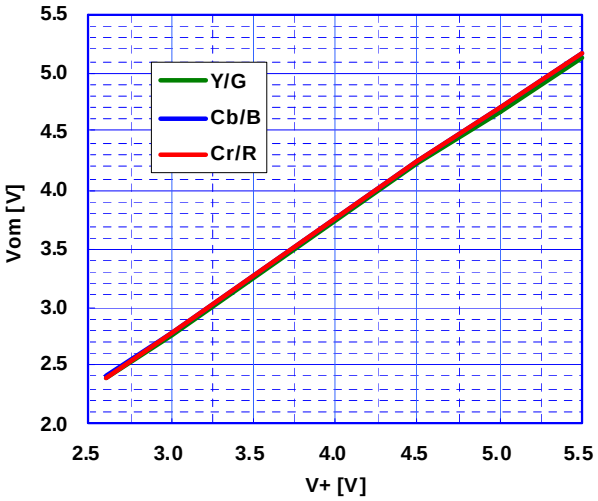
Common mode noise ratio vs Frequency
(V+=5.0V , VIN=VGND=1.0Vpp , Ta=25ºC)



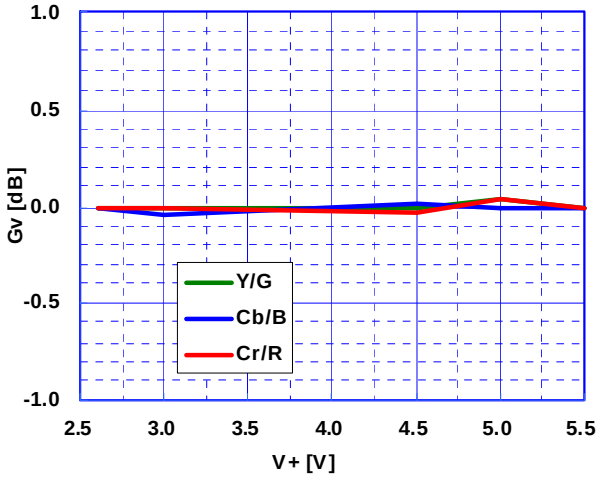
Supply current vs Voltage
(Ta=25ºC)



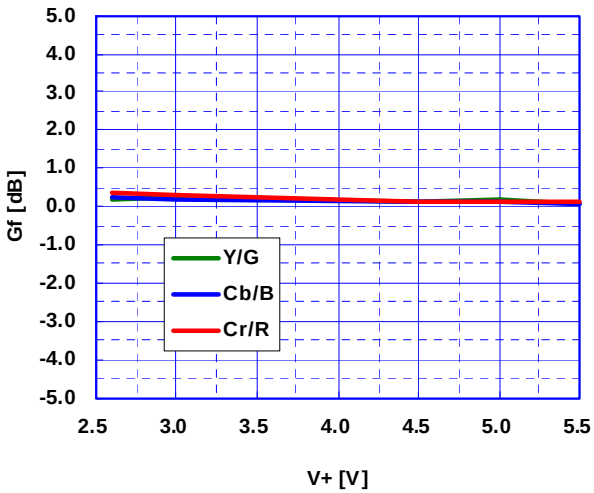
Maximum output voltage vs Voltage
(VIN=100kHz , THD=1% , Ta=25ºC)



Voltage gain vs Voltage
(VIN=100kHz , 1.0Vpp , Ta=25ºC)

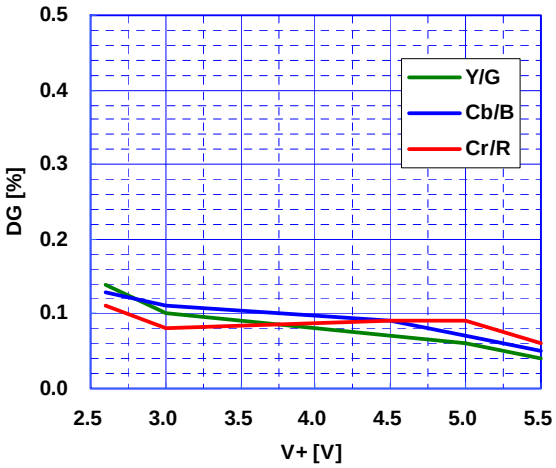


Frequency characteristics vs Voltage
(VIN=1.0Vpp , 13.5MHz/1MHz , Ta=25ºC)

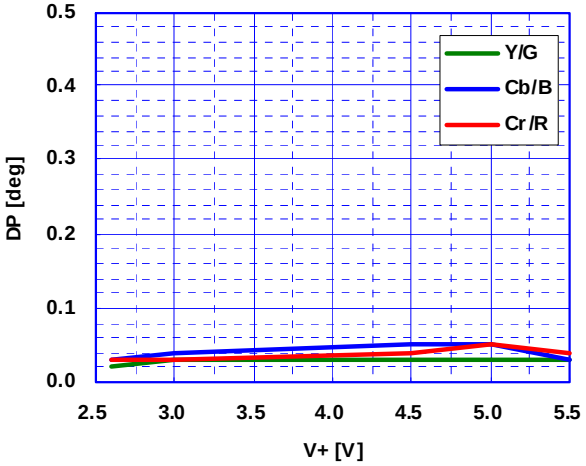


■TYPICAL CHARACTERISTICS

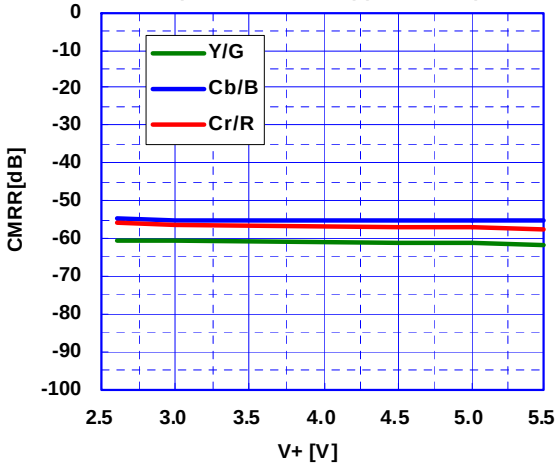
Differential gain vs Voltage
(VIN=1.0Vpp ,10step video signal , Ta=25°C)



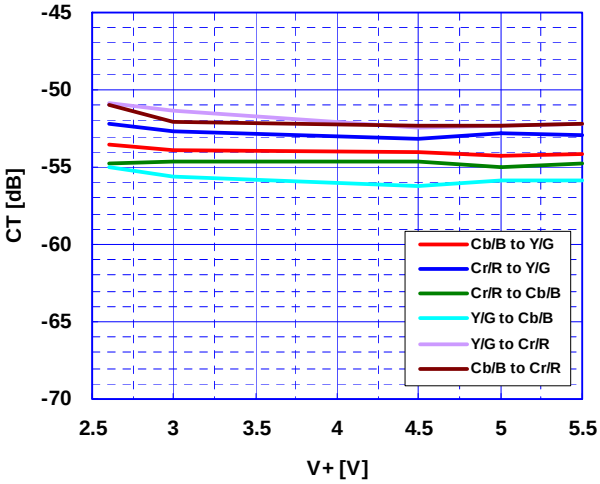
Differential phase vs Voltage
(VIN=1.0Vpp ,10step video signal , Ta=25°C)



Common mode noise ratio vs Voltage
(VIN=20kHz , 1.0Vpp , Ta=25°C)

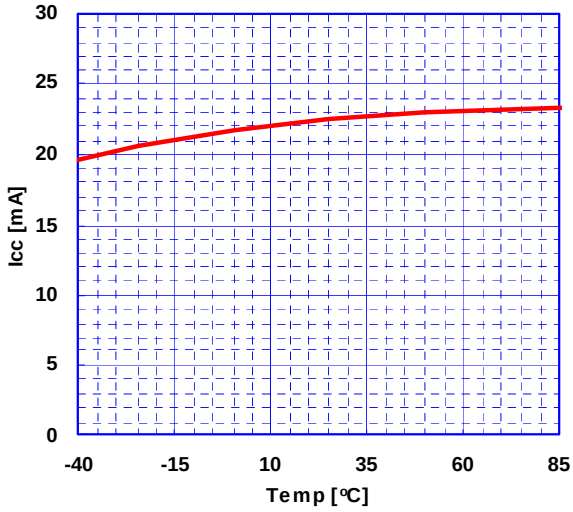


Cross talk vs Voltage
(VIN=13.5MHz , 1.0Vpp , Ta=25°C)

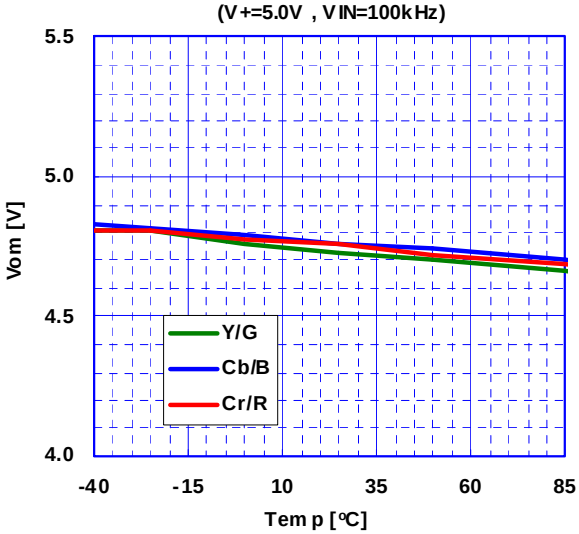


■TYPICAL CHARACTERISTICS

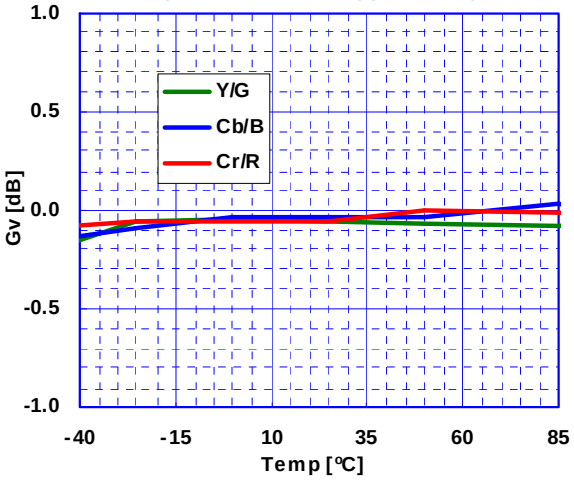
Supply current vs Temperature
(V+=5.0V)



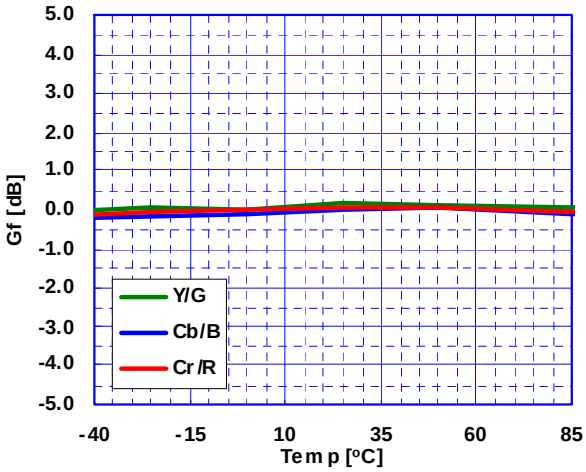
Maximum output voltage vs Temperature
(V+=5.0V , VIN=100kHz)



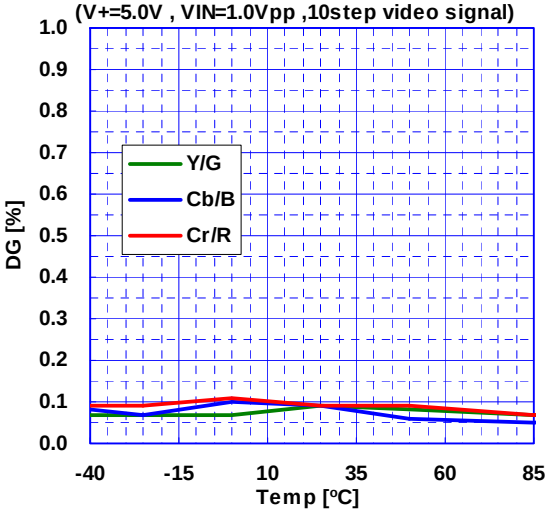
Voltage gain vs Temperature
(V+=5.0V , VIN=1.0Vpp , 100kHz)



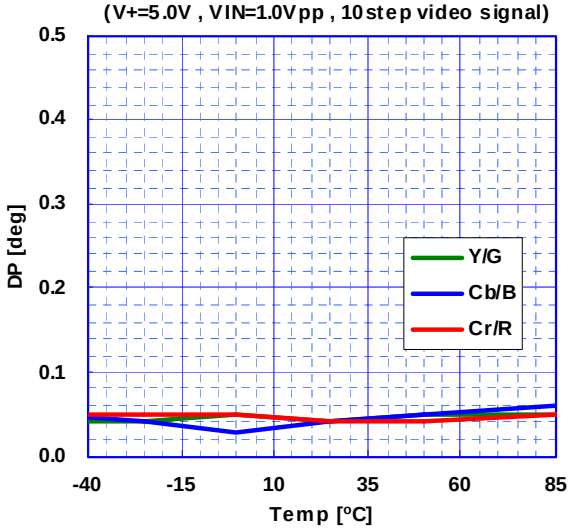
Frequency characteristics vs Temperature
(V+=5.0V , VIN=1.0Vpp , 100kHz)



Differential gain vs Temperature
(V+=5.0V , VIN=1.0Vpp ,10step video signal)



Differential phase vs Temperature
(V+=5.0V , VIN=1.0Vpp , 10step video signal)



■TYPICAL CHARACTERISTICS