HA118070

T-77-07-05

Video Switch with Preamplifier (1-circuit, 2-contact)

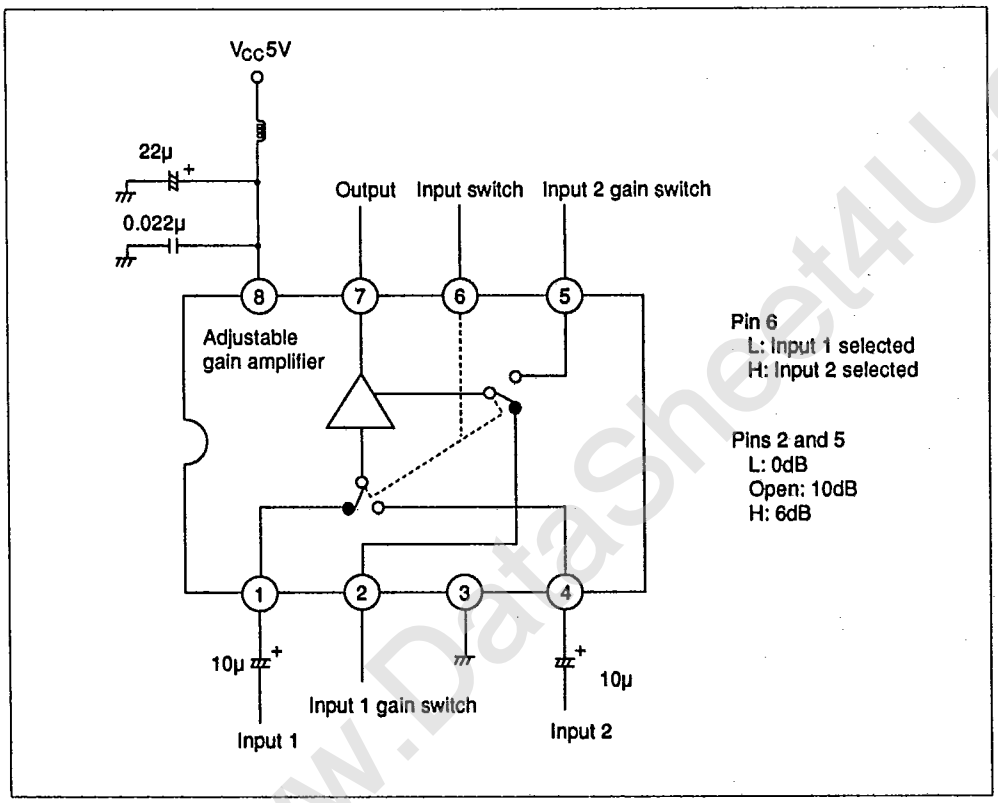
Features

- 5V single supply operation
- 2 inputs, 2 control inputs
- 3 gain levels available (0, 6, 10dB)
- Outstanding frequency characteristics, perfect for wide band VCRs
- Compact package

Ordering Information

Type No.	Package
HA118070	300mil 8-pin plastic DIP
HA118070FP	8-pin plastic SOP

Block Diagram



T-77-07-05

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating	Unit
Supply Voltage*1	V_{CC}	7	V
Control Terminal Applied Voltage	V_{CTL}	0 to V_{CC}	V
Power Dissipation*2	P_T	150	mW
Operating Temperature	Topr	−10 to +75	°C
Storage Temperature	Tstg	−45 to +125	°C

*1. Recommended supply voltage range: 4.5 to 5.0 to 5.5V
*2. Rated value at Ta = 75°C

Electrical Characteristics (Ta = 25°C)

No.	Item	Symbol	Min	Typ	Max	Unit	Test Condition	Test Pin
1	Quiescent Supply Current	I_Q	5.5	7.5	10.5	mA	V_{CC} = 5V Pin 2, 5, 6, open	Pin 8
2	Input 1 Voltage Gain (LO)	G_V 1-L	−1.0	0	1.0	dB	V_1 = 1Vpp, f = 3.58MHz R_g = 50Ω, R_O = ∞ Pin 2 GND, pin 6 open	Pin 7
3	Input 1 Voltage Gain (MID)	G_V 1-M	5.0	6.0	7.0	dB	Same as item 2, except: V_1 = 0.5Vpp, pin 2 V_{CC}	Pin 7
4	Input 1 Voltage Gain (HI)	G_V 1-H	9.0	10.0	11.0	dB	Same as item 2, except: V_1 = 0.3Vpp, pin 2 open	Pin 7
5	Input 2 Voltage Gain (LO)	G_V 2-L	−1.0	0	1.0	dB	V_4 = 1Vpp, f = 3.58MHz R_g = 50Ω, R_O = ∞ Pin 5 GND, pin 6 V_{CC}	Pin 7
6	Input 2 Voltage Gain (MID)	G_V 2-M	5.0	6.0	7.0	dB	Same as item 5, except: V_4 = 0.5Vpp, pin 5 V_{CC}	Pin 7
7	Input 2 Voltage Gain (HI)	G_V 2-H	9.0	10.0	11.0	dB	Same as item 5, except: V_4 = 0.3Vpp, pin 5 open	Pin 7
8	Input 1-2 Crosstalk	CR 1-2	40	60	—	dB	V_1 = 1.0Vpp, f = 3.58MHz R_g = 50Ω, R_O = ∞ Pin 2, 5 GND, pin 6 V_{CC}	Pin 7
9	Input 2-1 Crosstalk	CR 2-1	40	60	—	dB	V_4 = 1.0Vpp, f = 3.58MHz R_g = 50Ω, R_O = ∞ Pin 2, 5 GND, pin 6 V_{CC}	Pin 7
10	Input 1 Total Harmonic Ratio	THD1	—	0.3	1.0	%	V_1 = 0.5Vpp, f = 1kHz R_g = 600Ω, R_O = ∞ Pin 2 GND, pin 6 open	Pin 7
11	Input 2 Total Harmonic Ratio	THD2	—	0.3	1.0	%	V_4 = 0.5Vpp, f = 1kHz R_g = 600Ω, R_O = ∞ Pin 5 GND, pin 6 V_{CC}	Pin 7

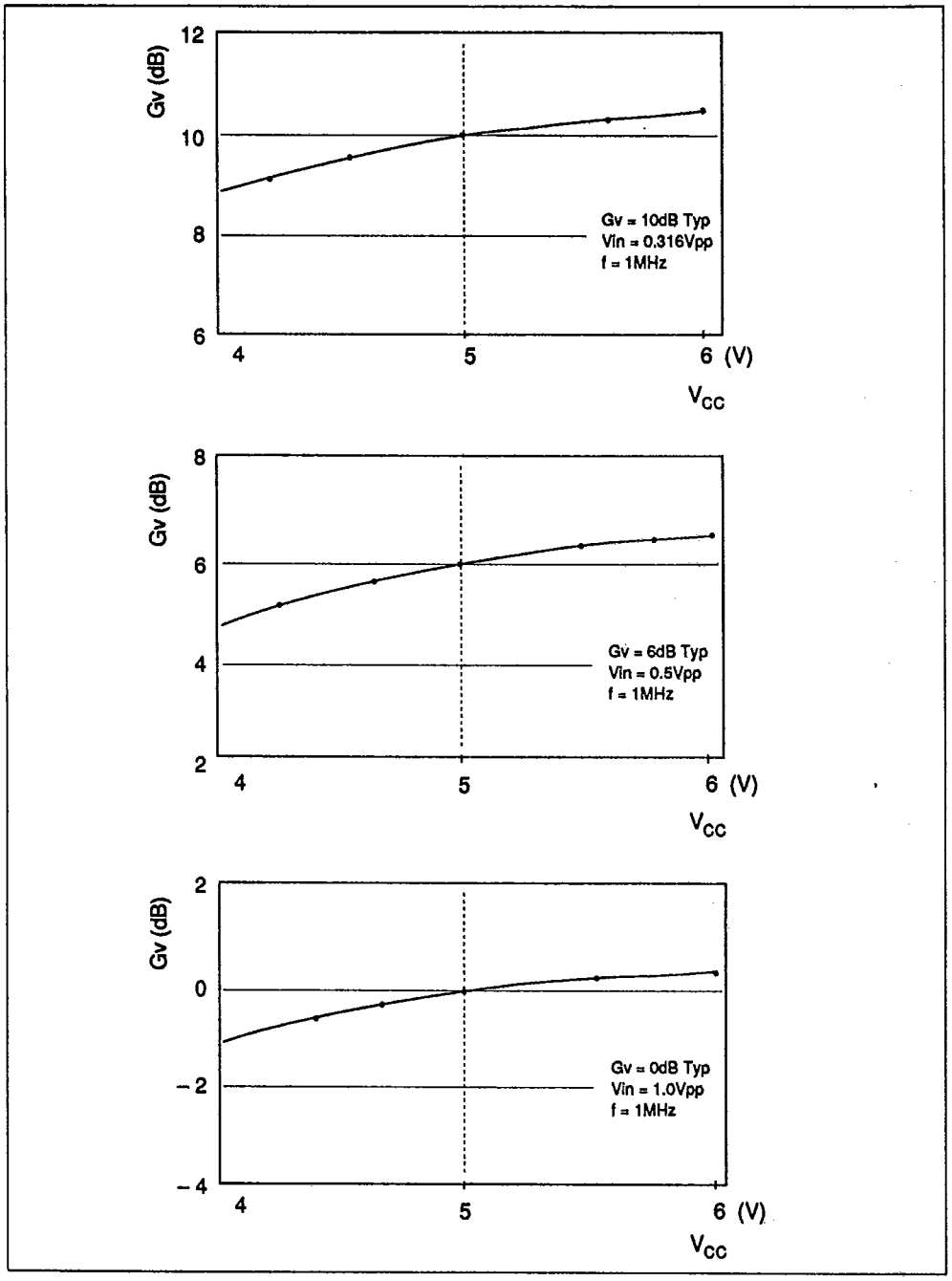
HA118070

T-77-07-05

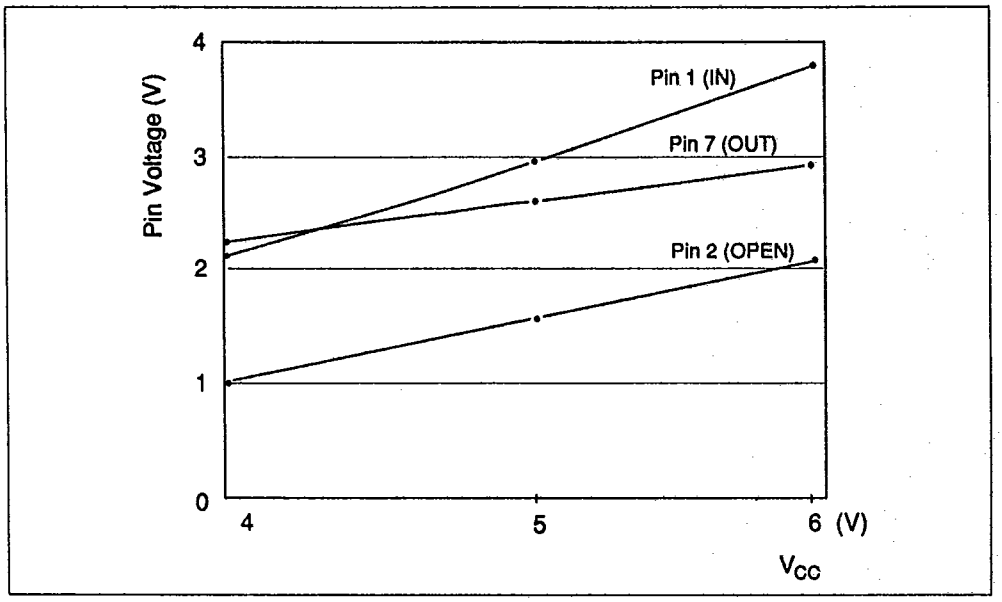
No.	Item	Symbol	Min	Typ	Max	Unit	Test Condition	Test Pin
12	Input 1 Gain Switch Voltage (LO)	V 2L	—	—	0.7	V	Pin 6 Open	Pin 2
13	Input 1 Gain Switch Voltage (MID)	V 2M	1.3	1.5	1.7	V	Pin 6 Open	Pin 2
14	Input 1 Gain Switch Voltage (HI)	V 2H	2.5	—	—	V	Pin 6 Open	Pin 2
15	Input 2 Gain Switch Voltage (LO)	V 5L	—	—	0.7	V	Pin 6 V_{CC}	Pin 5
16	Input 2 Gain Switch Voltage (MID)	V 5M	1.3	1.5	1.7	V	Pin 6 V_{CC}	Pin 5
17	Input 2 Gain Switch Voltage (HI)	V 5H	2.5	—	—	V	Pin 6 V_{CC}	Pin 5
18	Input Switch Voltage (LO)	V	—	—	0.5	V		Pin 6
19	Input Switch Voltage (HI)	V	2.5	—	—	V		Pin 6

T-77-07-05

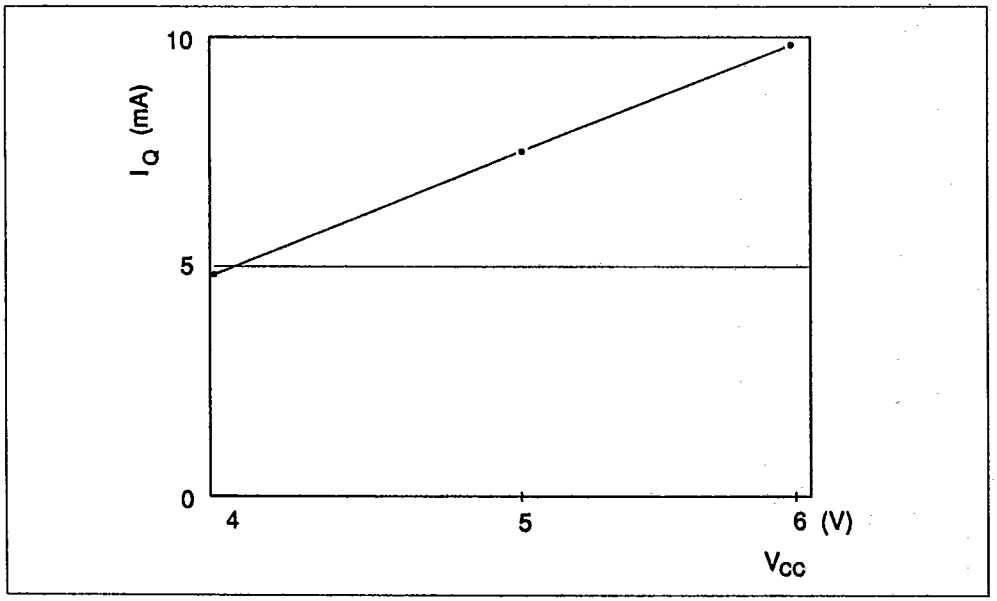
Amplifier Gain vs. Supply Voltage



I/O Terminal Voltage vs. Supply Voltage

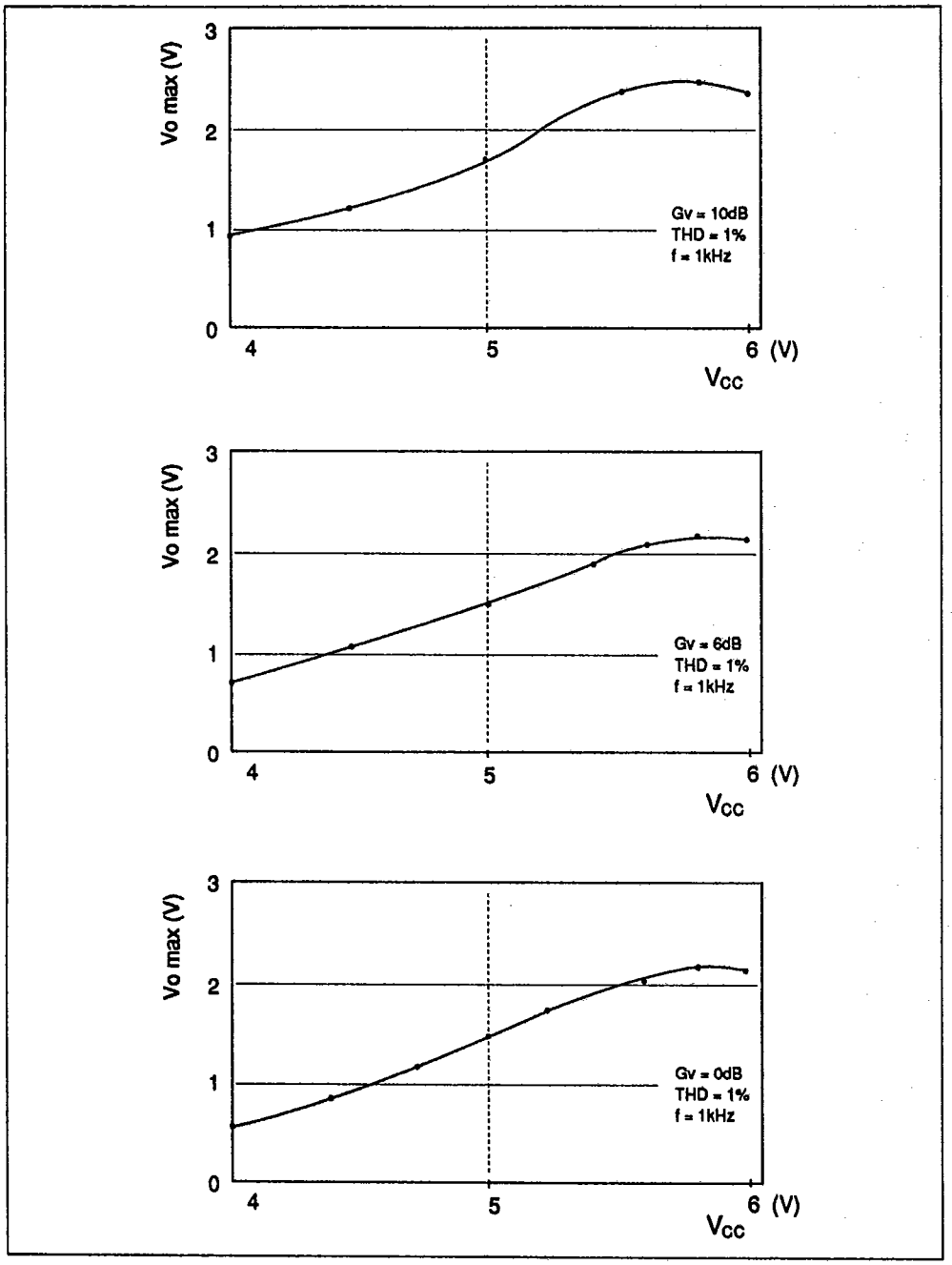


Quiescent Current vs. Supply Voltage

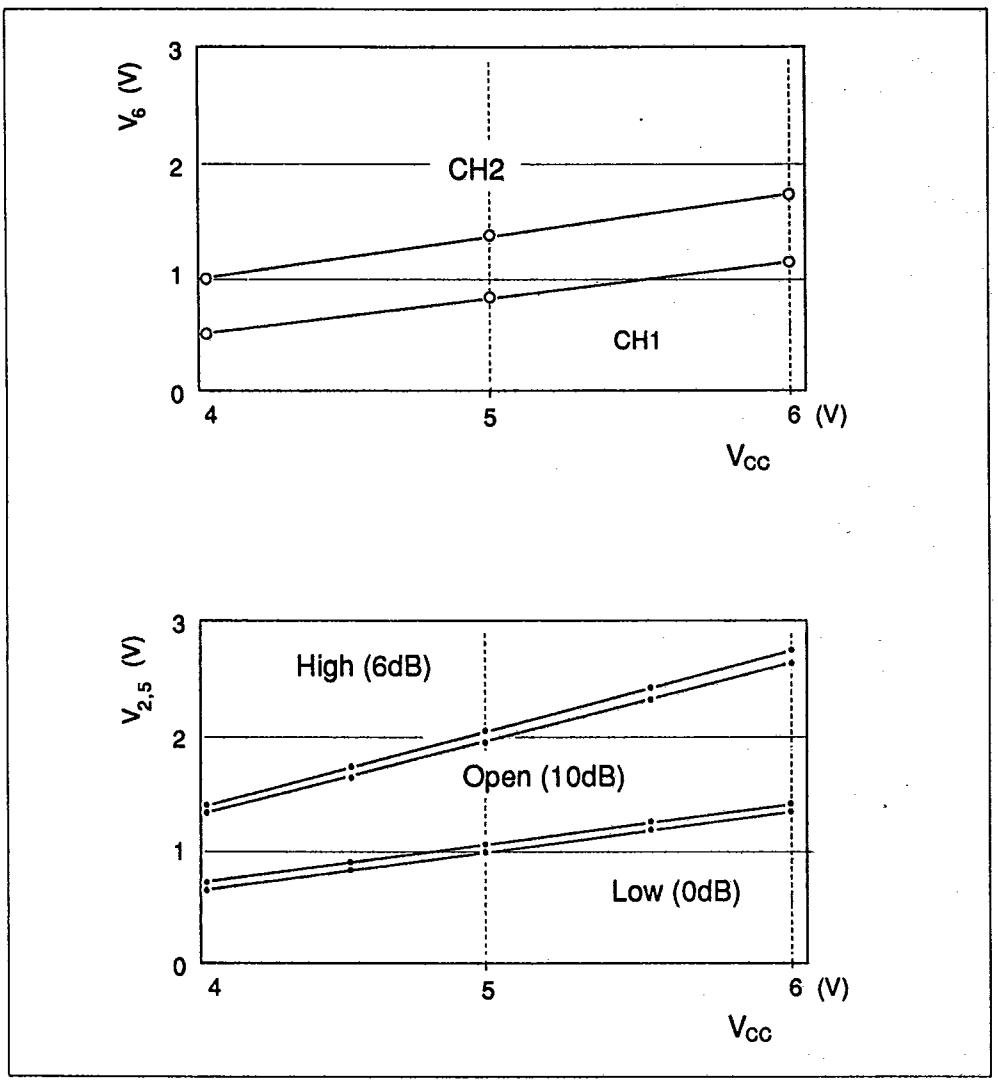


T-77-07-05

Output Voltage vs. Supply Voltage

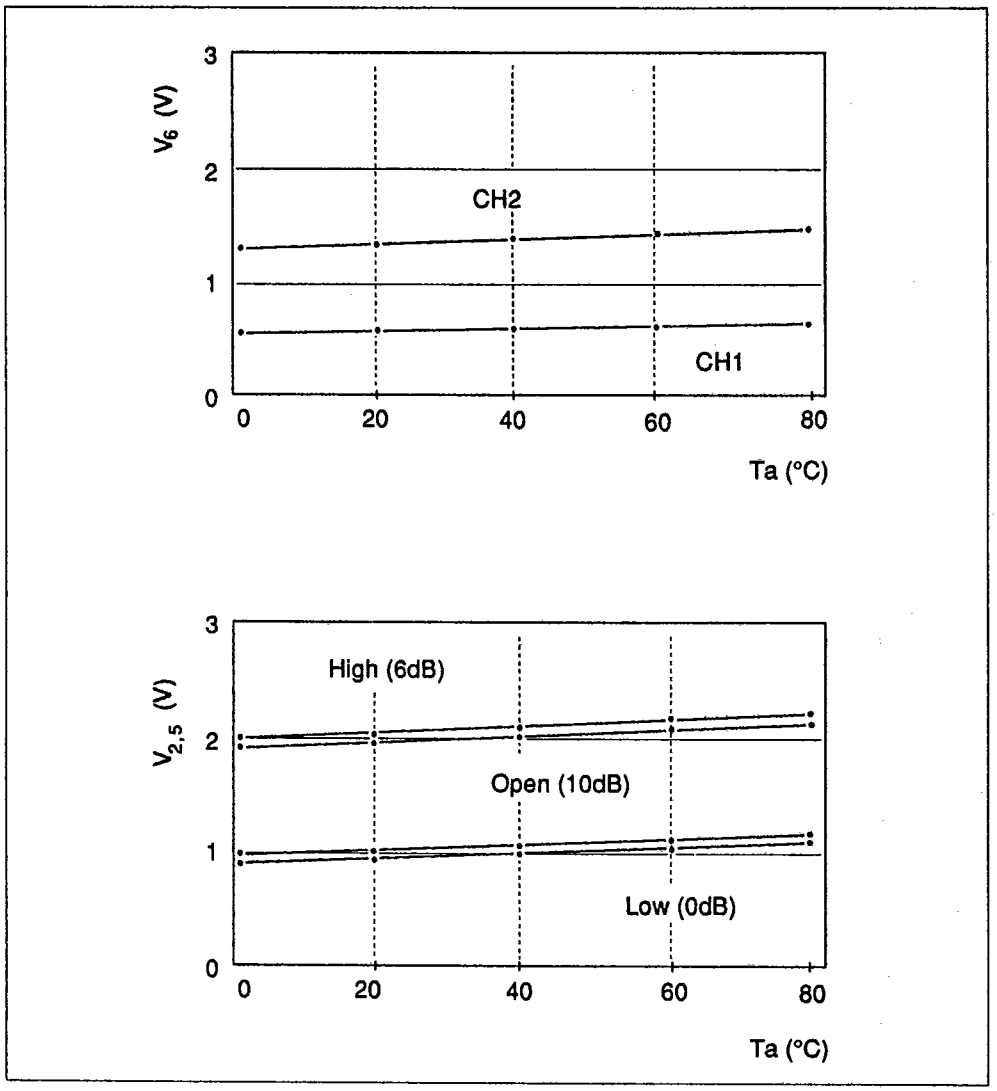


Control Terminal Voltage vs. Supply Voltage

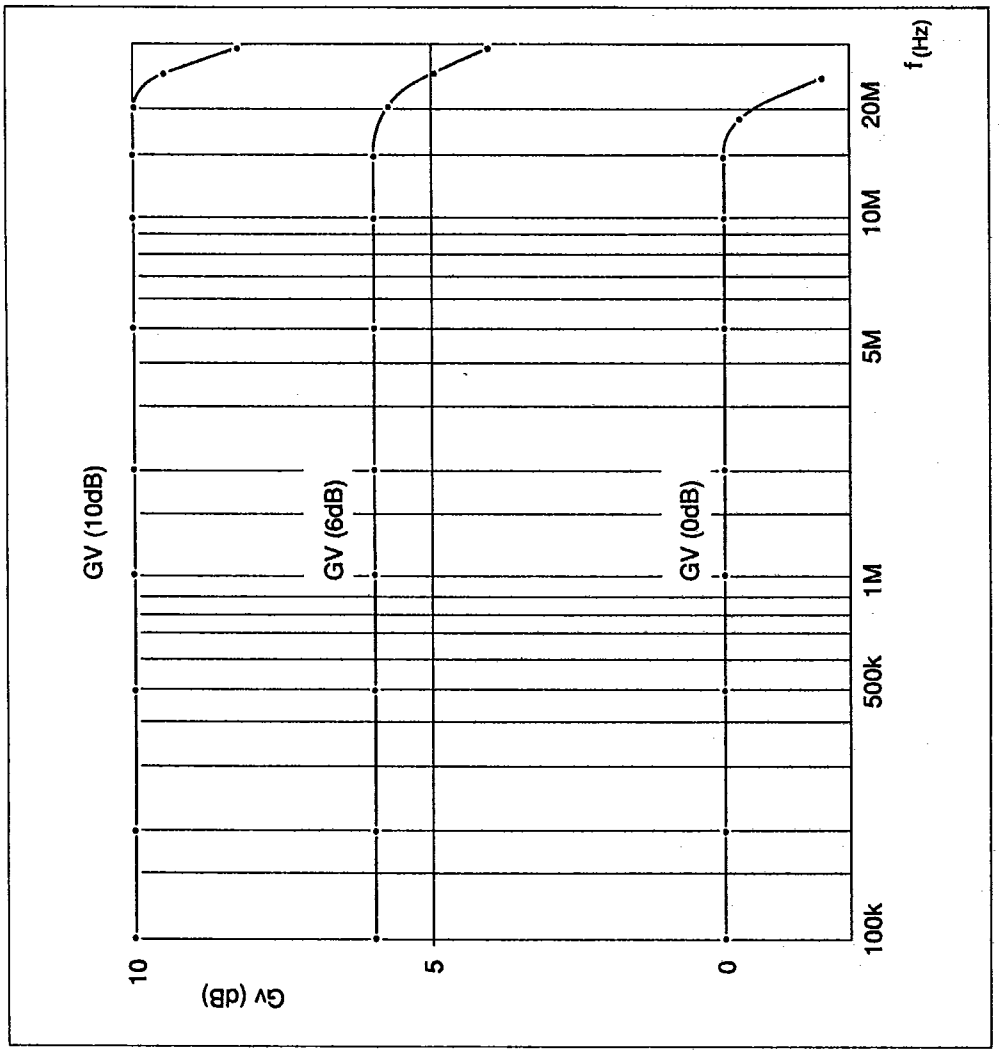


T-77-07-05

Control Terminal Voltage vs. Ambient Temperature

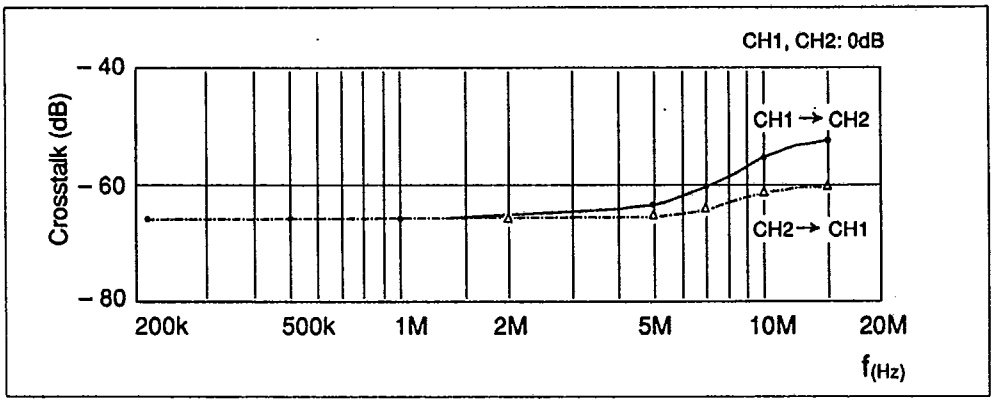


Amplifier Gain vs. Frequency

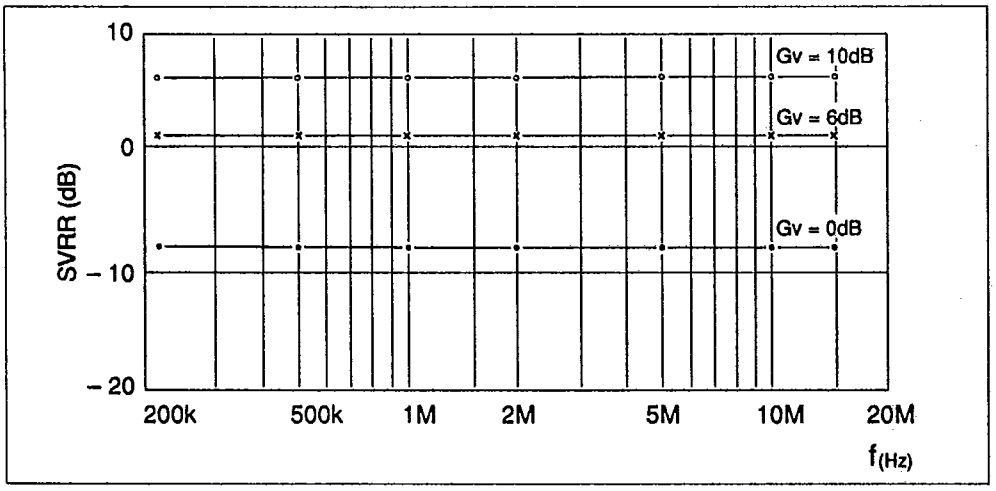


T-77-07-05

Crosstalk vs. Frequency



SVRR vs. Frequency



T.H.D vs. Output Voltage