

## 3-INPUT 2-OUTPUT VIDEO SWITCH FOR AV-SET

### ■ GENERAL DESCRIPTION

**NJM2279** is 3-input, 2-output video switch with 75Ω, driver circuit.

This video switch can be connected to TV monitor directly, as it has 6dB amplifier and 75Ω drivers circuit internally.

The **NJM2279** has the mute function.

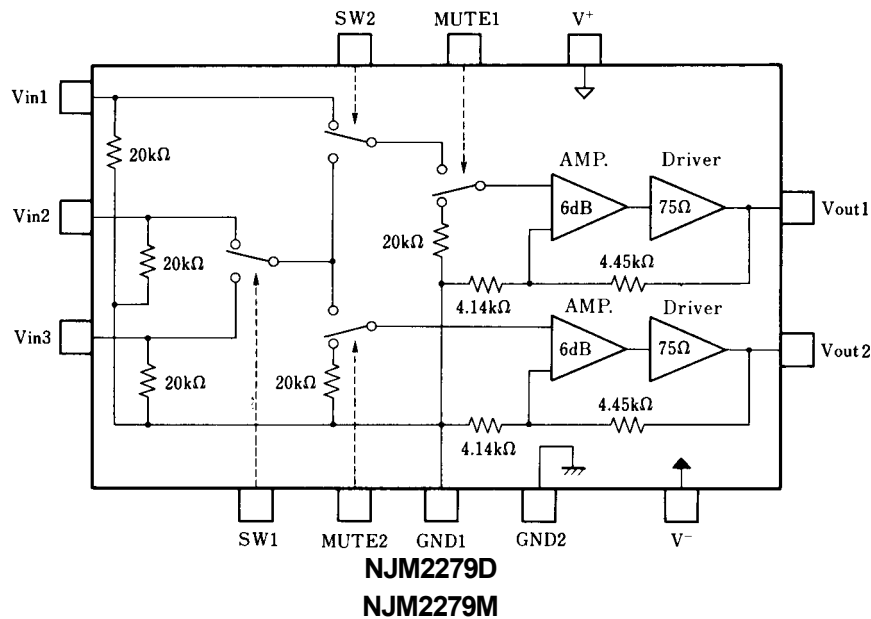
### ■ FEATURES

- 3 input 2 output
- Internal 6dB AMP.
- Internal 75Ω Driver Circuit
- Operating Voltage Dual ( $\pm 4V$  to Single (+8V to
- Internal 2 Output Mute Function
- Package Outline DIP14, DMP14
- Bipolar Technology

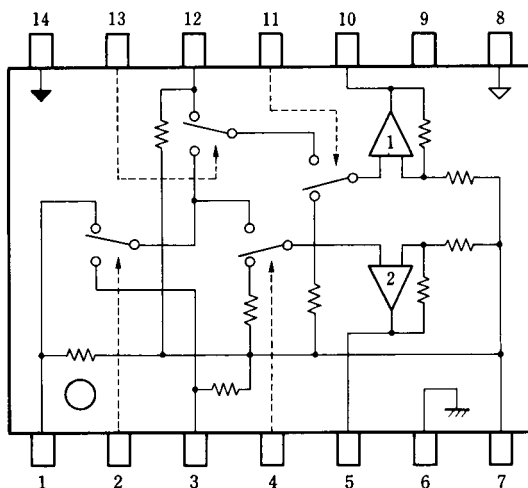
### ■ RECOMMENDED OPERATING CONDITION

- Supply Voltage Dual  $\pm 4.0V$  to  $\pm 7.0V$
- Supply Voltage Single +8V to +14V

### ■ BLOCK DIAGRAM



### ■ PIN CONFIGURATION



#### PIN FUNCTION

- |          |                    |
|----------|--------------------|
| 1. Vin3  | 8. V <sup>+</sup>  |
| 2. SW1   | 9. N.C.            |
| 3. Vin2  | 10. Vout1          |
| 4. MUTE2 | 11. MUTE1          |
| 5. Vout2 | 12. Vin1           |
| 6. GND2  | 13. SW2            |
| 7. GND1  | 14. V <sup>-</sup> |

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## ■ ABSOLUTE MAXIMUM RATINGS

( $T_a = 25^\circ\text{C}$ )

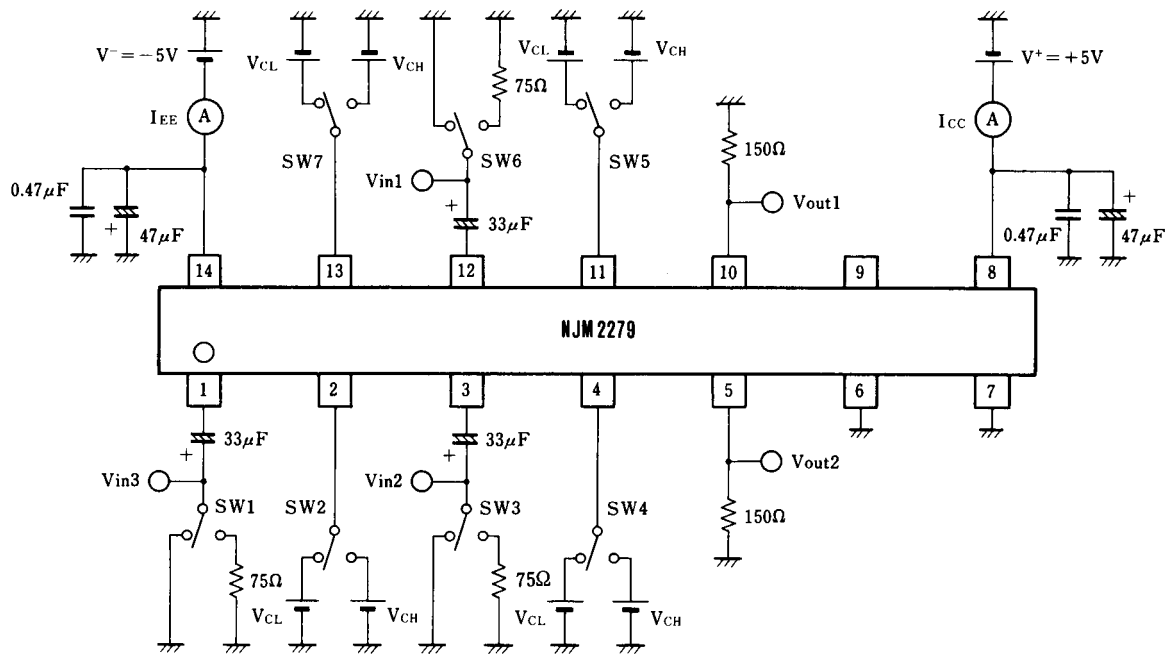
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V^+ / V^-$	$\pm 7.5$	V
Power Dissipation	$P_D$	(DIP14) 700 (DMP14) 300	mW mW
Operating Temperature Range	$T_{opr}$	-20 to +75	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-40 to +125	$^\circ\text{C}$

## ■ ELECTRICAL CHARACTERISTICS

( $V^+ / V^- = \pm 5\text{V}$ ,  $R_L = 150\Omega$ ,  $T_a = 25^\circ\text{C}$ )

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	$I_{CC}$	No signal	10.0	17.3	24.6	mA
	$I_{EE}$	No signal	-24.6	-17.3	-10.0	mA
Voltage Gain	$G_V$	$V_{IN} = 100\text{kHz} / 1.0V_{P-P}$	6.0	6.3	6.8	dB
Frequency Characteristic	$G_f$	5MHz / 100kHz, $1.0V_{P-P}$	-1.0	0.0	+1.0	dB
Differential Gain	DG	$V_{IN} = 1.0V_{P-P}$ , Stair wave	-	0.2	-	%
Differential Phase	DP	$V_{IN} = 1.0V_{P-P}$ , Stair wave	-	0.2	-	deg
Offset output Voltage 1	$V_{OS1}$	$V_{in2} - V_{in3}$ : no signal	-40	0	+40	mV
Offset output Voltage 2	$V_{OS2}$	$V_{in1} - V_{in2} / V_{in3}$ : no signal	-60	0	+60	mV
Input / Output Crosstalk	CT	$V_{IN} = 4.43\text{MHz} / 1.0V_{P-P}$ , $V_O / V_{IN}$	-	-70	-	dB
MUTE Crosstalk	$CT_M$	$V_{IN} = 4.43\text{MHz} / 1.0V_{P-P}$ , $V_O / V_{IN}$	-	-60	-	dB
Switch Change Voltage	$V_{CH}$		2.5	-	$V^+$	V
	$V_{CL}$		0.0	-	1.0	V
Total Harmonic Distortion	THD	$V_{IN} = 1\text{kHz} 1.25V_{P-P}$	-	0.1	-	%
Input Impedance	$R_{in}$		-	20	-	k $\Omega$

## ■ TEST CIRCUIT



PARAMETER	SYMBOL	UNIT	INPUT TERMINAL	TEST TERMINAL	TEST CONDITION
Operating Current	$I_{CC}$	mA	-	8 pin	$V_{in1}$ to 3 = 0V, SW1/2·MUTE1/2 = $V_{CL}$
	$I_{EE}$	mA	-	14 pin	$V_{in1}$ to 3 = 0V, SW1/2·MUTE1/2 = $V_{CL}$
Voltage Gain	$G_V$	dB	1, 3, 12 pin	5, 10 pin	MUTE1/2 = $V_{CL}$
Frequency Characteristic	$G_f$	dB	1, 3, 12 pin	5, 10 pin	MUTE1/2 = $V_{CL}$
Differential Gain	DG	%	1, 3, 12 pin	5, 10 pin	MUTE1/2 = $V_{CL}$
Differential Phase	DP	deg	1, 3, 12 pin	5, 10 pin	MUTE1/2 = $V_{CL}$
Offset output Voltage 1	$V_{OS1}$	mV	1, 3, 12 pin	5, 10 pin	$V_{in1}$ to 3 = 0V
Offset output Voltage 2	$V_{OS2}$	mV	-	5, 10 pin	$V_{in1}$ to 3 = 0V
Input / Output Crosstalk	CT	dB	-	5, 10 pin	MUTE1/2 = $V_{CL}$
MUTE Crosstalk	$CT_M$	dB	1, 3, 12 pin	5, 10 pin	MUTE1/2 = $V_{CL}$
Switch Change Voltage	$V_{CH}$	V	1, 3, 12 pin	5, 10 pin	
	$V_{CL}$	V	-	-	
Total Harmonic Distortion	THD	%	1, 3, 12 pin	5, 10 pin	

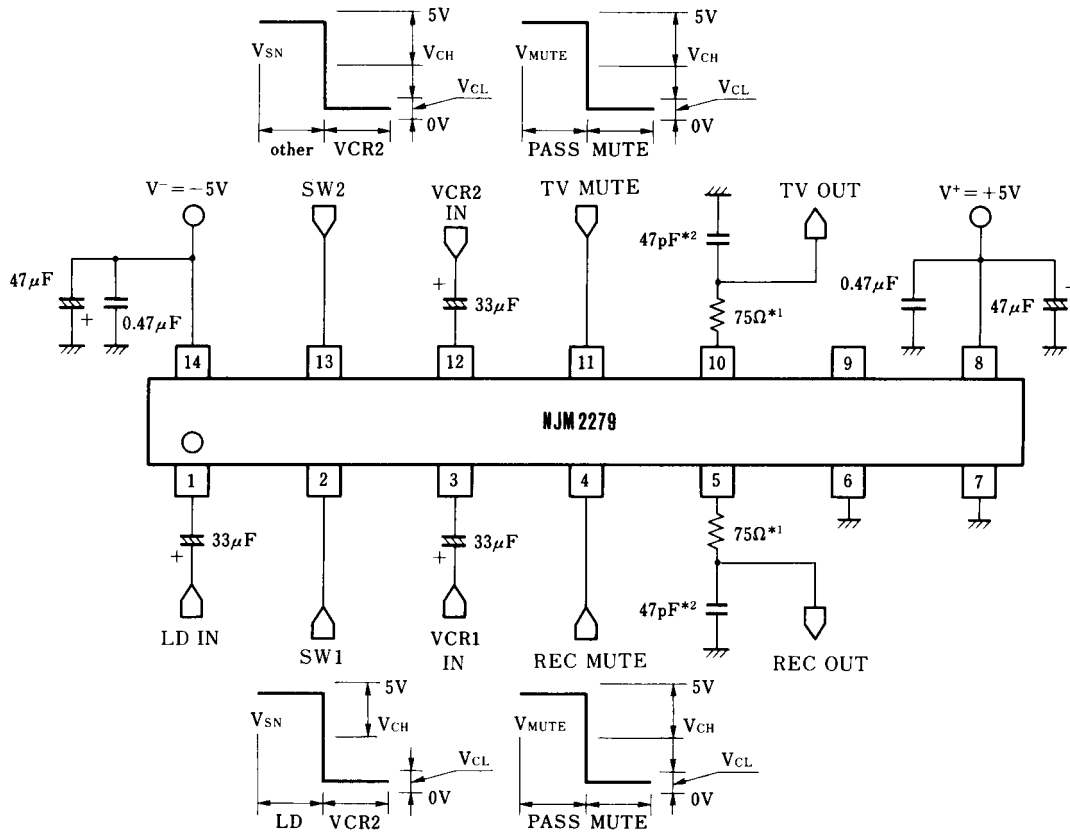
# NJM2279

## CONTROL SIGNAL-OUTPUT SIGNAL

(L =  $V_{CL}$ , H =  $V_{CH}$ , X = LorH)

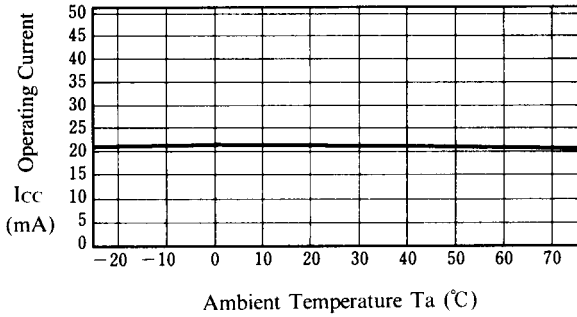
CONTROL SIGNAL				OUTPUT	
SW1 (2 pin)	SW2 (13 pin)	MUTE 1 (11 pin)	MUTE 2 (4 pin)	Vout 1 (10 pin)	Vout 2 (5 pin)
X	X	L	L	GND	GND
X	X	L	H	GND	OUT PUT
X	X	H	L	OUT PUT	GND
L	L	H	H	$V_{IN 1}$	$V_{IN 2}$
L	H	H	H	$V_{IN 2}$	$V_{IN 2}$
H	L	H	H	$V_{IN 1}$	$V_{IN 3}$
H	H	H	H	$V_{IN 3}$	$V_{IN 3}$

## APPLICATION

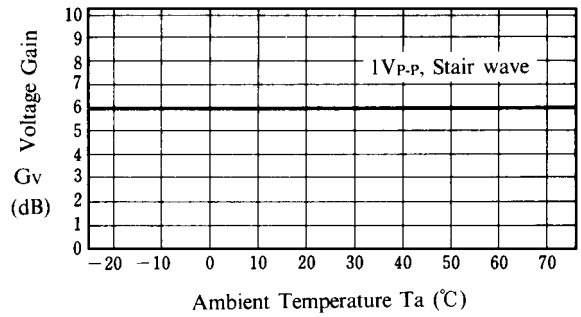


## ■ TYPICAL CHARACTERISTICS

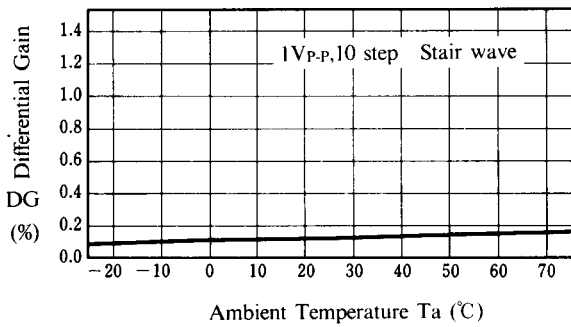
### Operating Current vs. Temperature



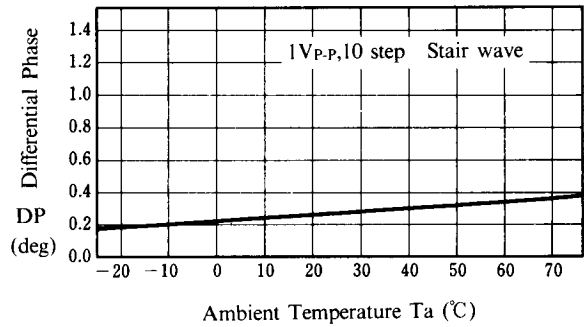
### Voltage Gain vs. Temperature



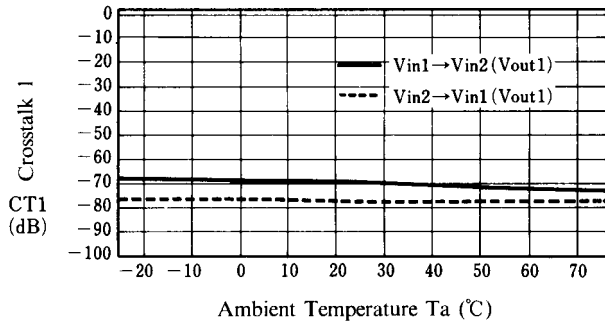
### Differential Gain vs. Temperature



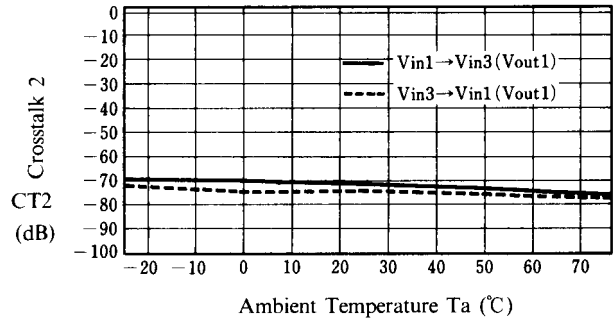
### Differential Phase vs. Temperature



### Crosstalk 1 vs. Temperature

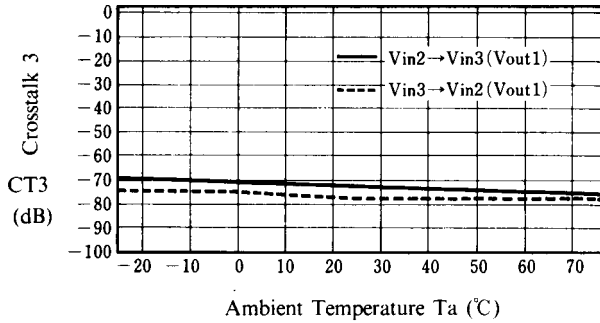


### Crosstalk 2 vs. Temperature

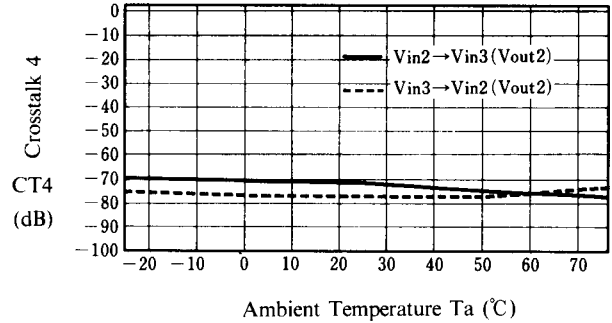


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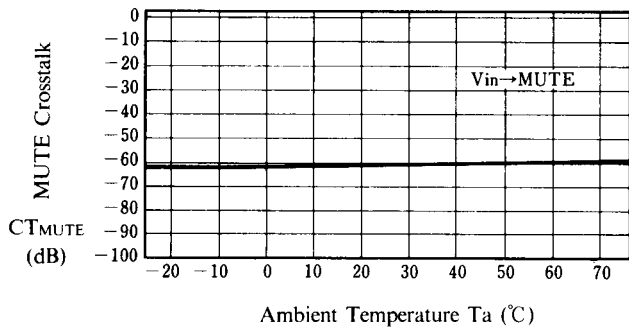
### Crosstalk 3 vs. Temperature



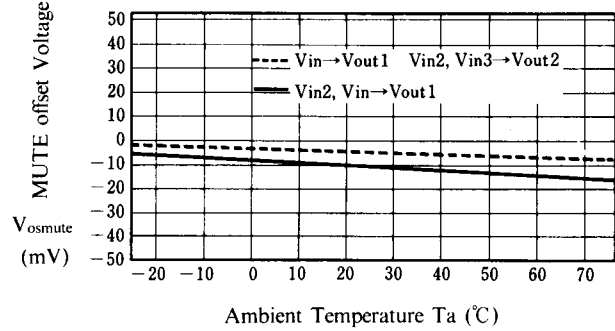
### Crosstalk 4 vs. Temperature



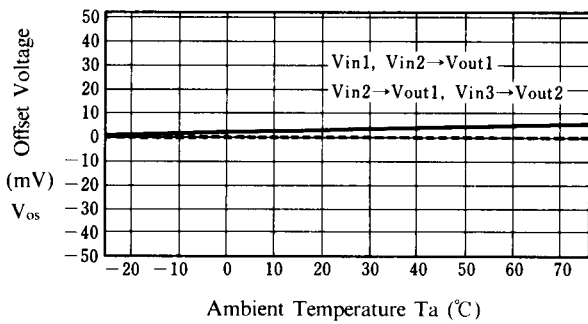
### MUTE Crosstalk vs. Temperature



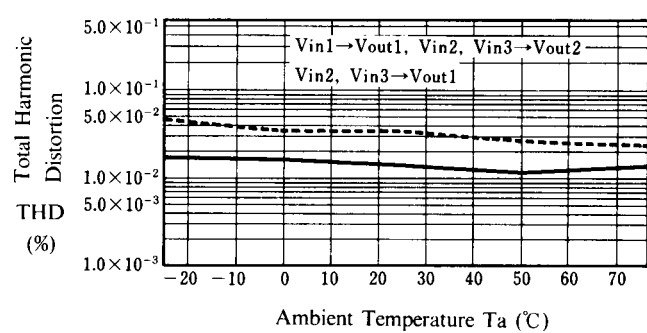
### MUTE offset Voltage vs. Temperature



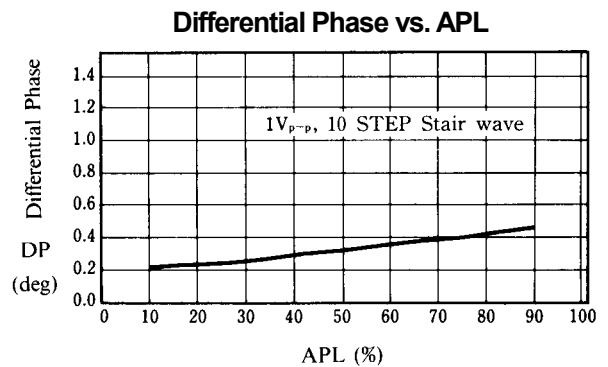
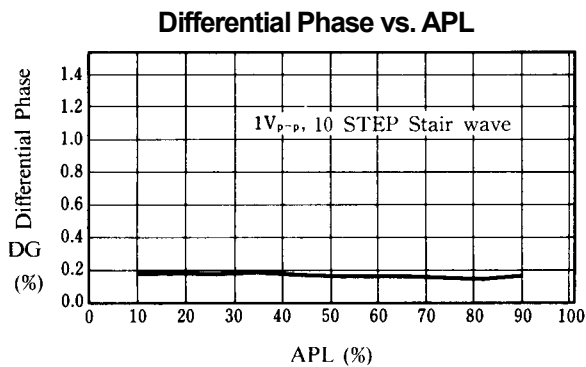
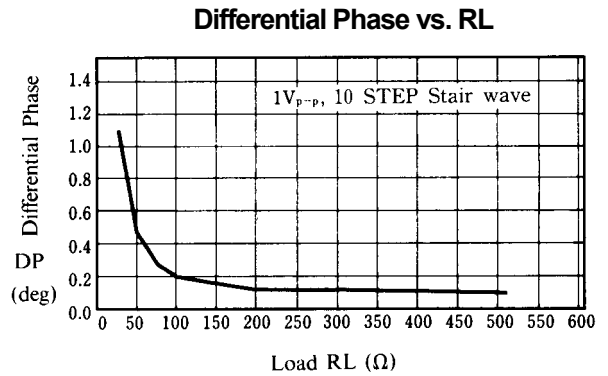
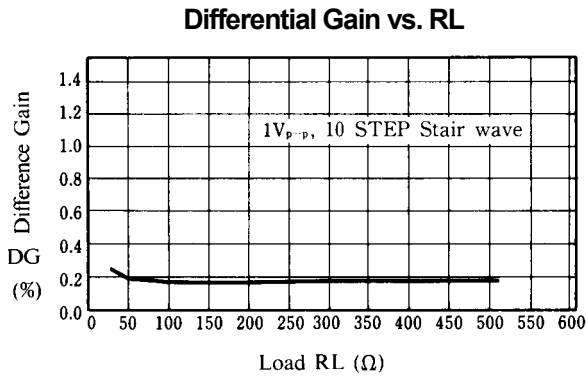
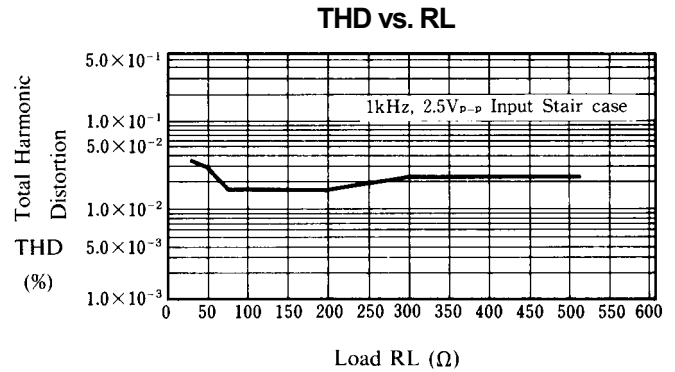
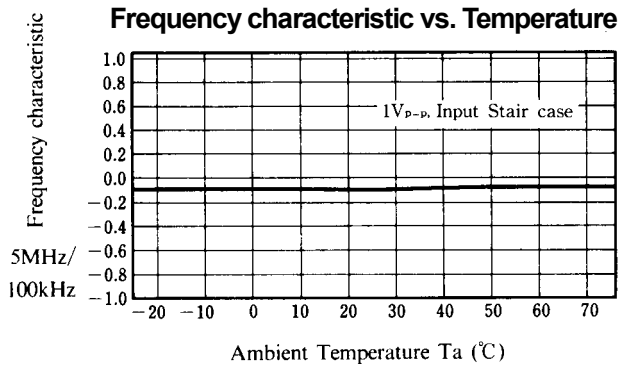
### Channel offset Voltage vs. Temperature



### Total Harmonic Distortion vs. Temperature

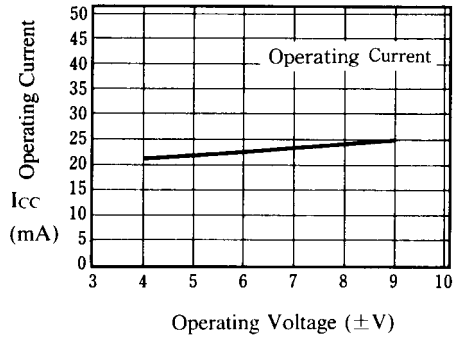


## ■ TYPICAL CHARACTERISTICS

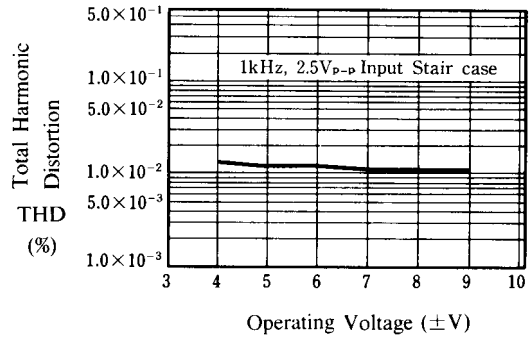


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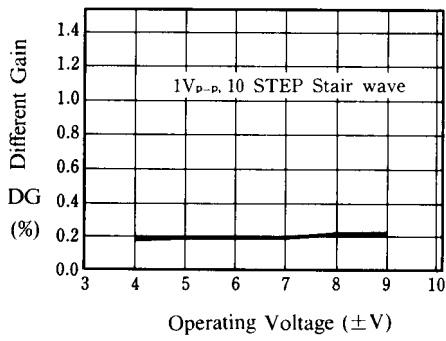
**Operating Current vs. Operating Voltage**



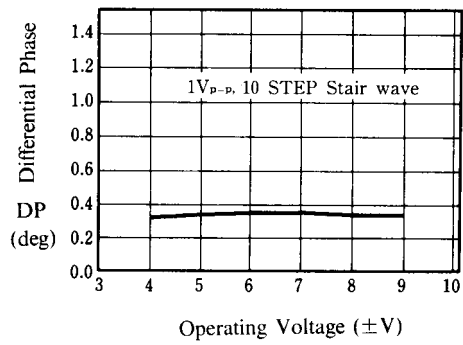
**THD vs. Operating Voltage**



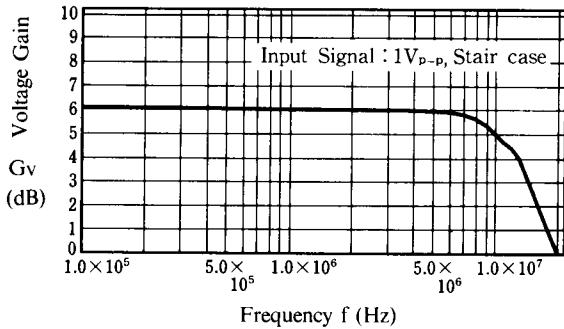
**Different Gain vs. Operating Voltage**



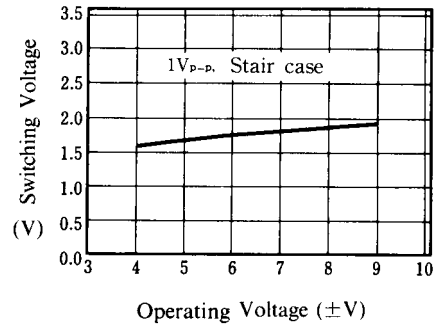
**Differential Phase vs. Operating Voltage**



**Voltage Gain vs. Frequency**

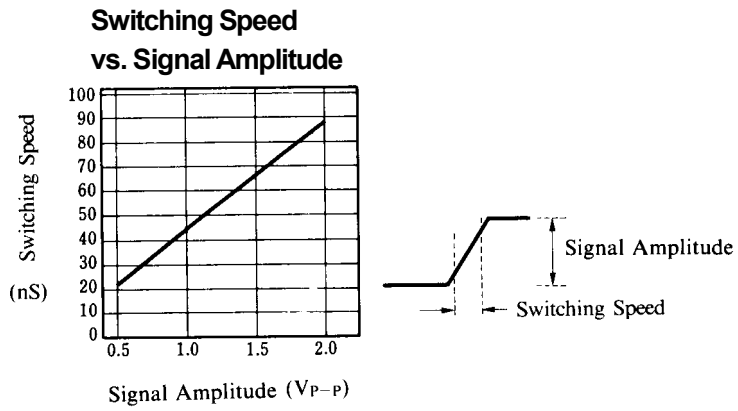


**Switching Voltage vs. Operating Voltage**





## ■ TYPICAL CHARACTERISTICS



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