

2-INPUT 1-OUTPUT VIDEO SWITCH

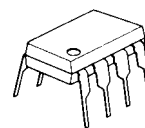
■ GENERAL DESCRIPTION

The **NJM2533** is a video switch for VCR, TV, and others.
It contains two bias-type inputs and one buffer-type output.

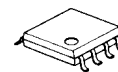
■ FEATURES

- Operating Voltage (+4.75V to +13V)
- Low Operating Current (MAX : 3.7mA)
- Crosstalk (-70dB)
- 2-Input, 1-Output
- Bipolar Technology
- Package Outline DIP8, DMP8, SIP8, SSOP8

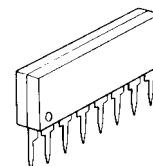
■ PACKAGE OUTLINE



NJM2533D



NJM2533M

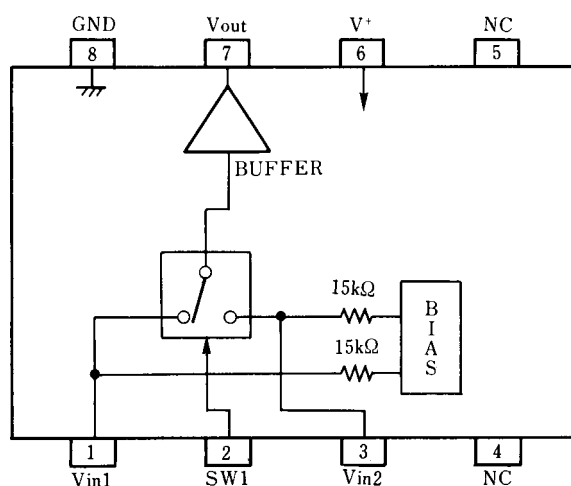


NJM2533L



NJM2533V

■ PIN CONFIGURATION



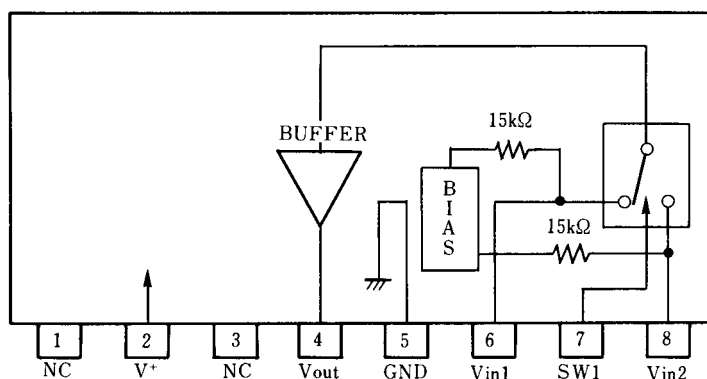
PIN FUNCTION

- 1 : Vin1
- 2 : SW1
- 3 : Vin2
- 4 : NC
- 5 : NC
- 6 : V⁺
- 7 : V_{OUT}
- 8 : GND

NJM2533D

NJM2533M

NJM2533V



PIN FUNCTION

- 1 : NC
- 2 : V⁺
- 3 : NC
- 4 : V_{OUT}
- 5 : GND
- 6 : Vin1
- 7 : SW1
- 8 : Vin2

NJM2533L

■ ABSOLUTE MAXIMUM RATINGS

(T_a = 25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	+15	V
Power Dissipation	P _D	(DIP-8) 500 (DMP-8) 300 (SIP-8) 800 (SSOP-8) 250	mW
Operating Temperature Range	T _{opr}	-40 to +85	°C
Storage Temperature Range	T _{stg}	-40 to +125	°C

■ ELECTRICAL CHARACTERISTICS

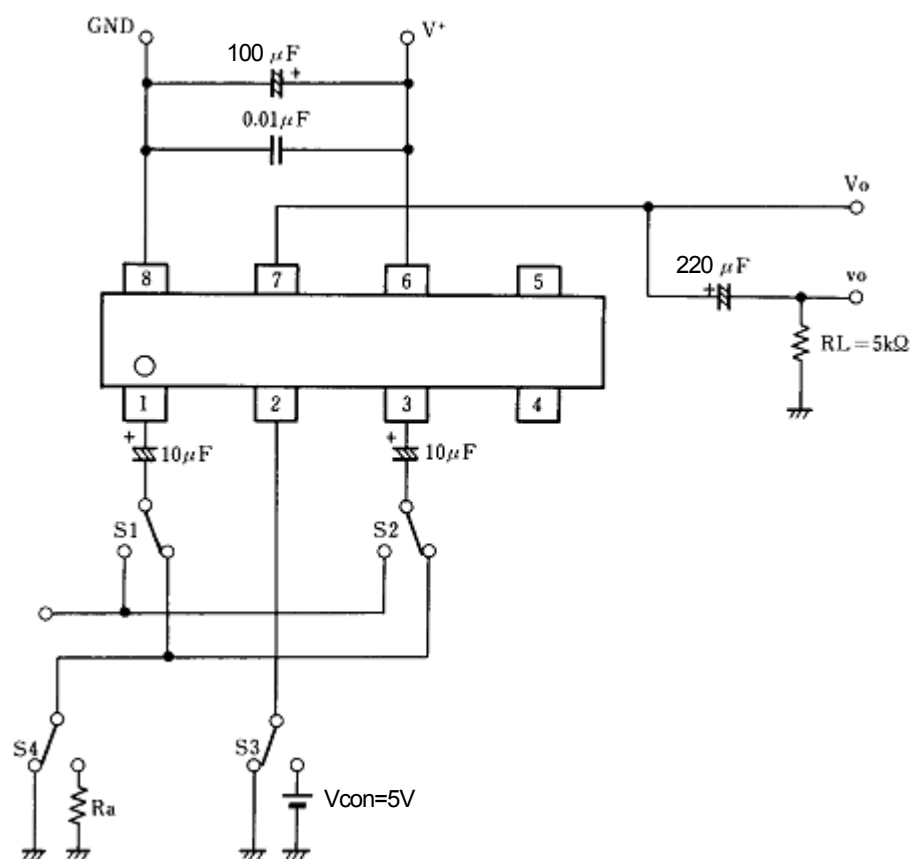
(V⁺ = 5V, T_a = 25°C)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V ⁺		+4.5	-	+13.0	V
Operating Current	I _{CC}		-	2.7	3.7	mA
Frequency Characteristics	G _f	V _{IN} = 2V _{PP} , V _O = 10MHz/100kHz	-1.0	0	+1.0	dB
Voltage Gain	G _v	V _{IN} = 2V _{PP} , 100kHz	-0.5	0	+0.5	dB
Total Harmonic Distortion	THD	V _{IN} = 2.5V _{PP} , 1kHz	-	0.05	0.1	%
Differential Gain	DG	V _{IN} = 2V _{PP} , Standard staircase signal, APL = 50%	-	0.2	3.0	%
Differential Phase	DP	V _{IN} = 2V _{PP} , Standard staircase signal, APL = 50%	-	0.2	3.0	deg
Output Offset Voltage	V _{off}		-15	0	+15	mV
Crosstalk	CT	V _{IN} = 2V _{PP} , 4.3MHz	-	-70	-60	dB
Switching Voltage	V _{CH}		2.4	-	-	V
	V _{CL}		-	-	0.8	V
Input Impedance	R _i		-	30	-	kΩ
Output Impedance	R _O		-	25	-	Ω
Input Bias Voltage	V _{IN}		-	2.5	-	V

■ CONTROL SIGNAL-OUTPUT SIGNAL

SW1	OUTPUT SIGNAL
L	V _{IN1}
H	V _{IN2}

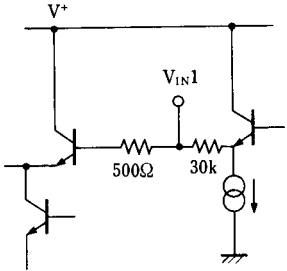
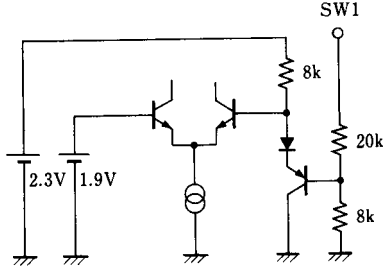
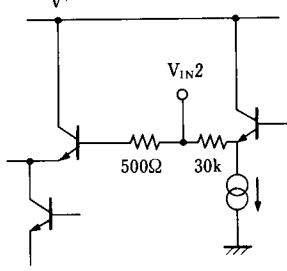
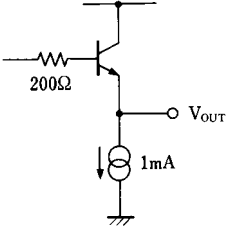
■ TEST CIRCUIT



Terminal DC voltage at test circuit (Ta=25°C)

Terminal name	Vin1	Vin2	Vout
DC voltage (V)	$V^+/2$	$V^+/2$	$V^+/2 - 0.7$

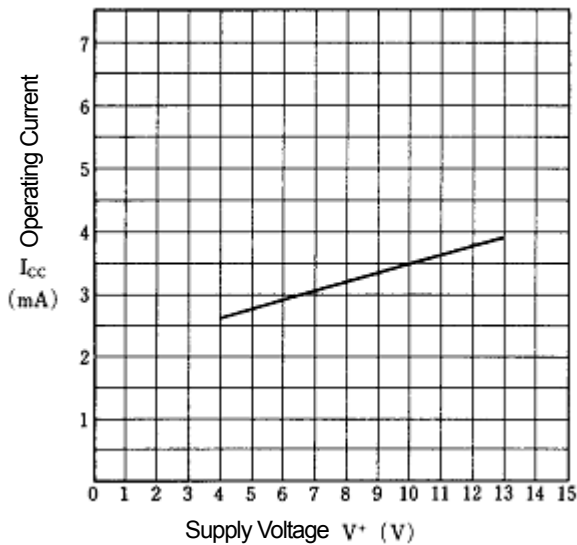
■ TERMINAL DESCRIPTION (Terminal number indicates the DIP , DMP, SSOP)

No.	SYMBOL	EQUIVALENT CIRCUIT	No.	SYMBOL	EQUIVALENT CIRCUIT
1	V _{IN1}		5	NC	_____
2	SW1		6	V ⁺	_____
3	V _{IN2}		7	V _{OUT}	
4	NC	_____	8	GND	_____

■ TYPICAL CHARACTERISTICS

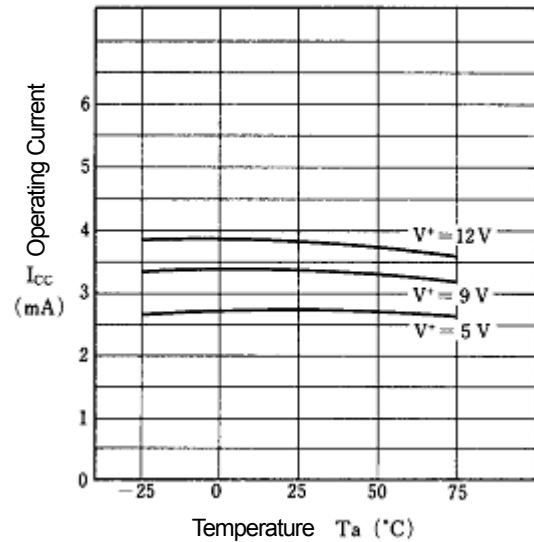
Operating Current vs. Supply Voltage

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



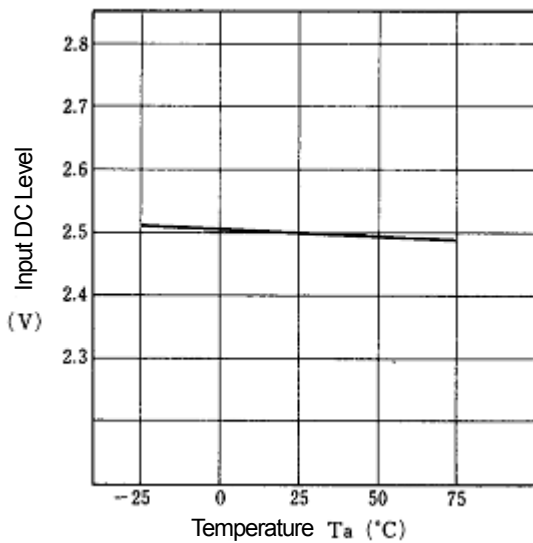
Operating Current vs. Temperature

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



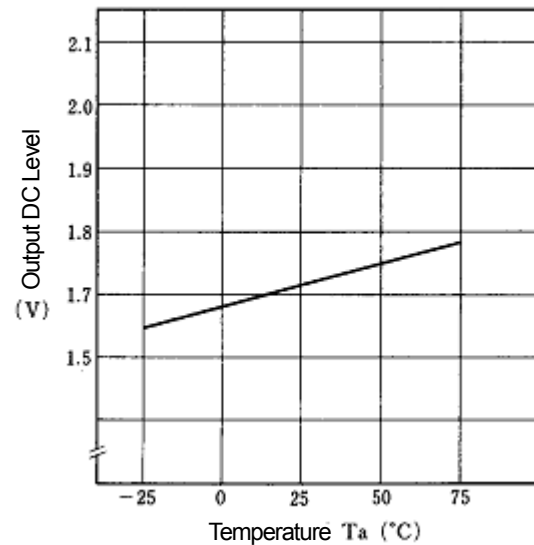
Input DC Level vs. Temperature

($V^+ = 5\text{V}$, $T_a = 25^\circ\text{C}$)



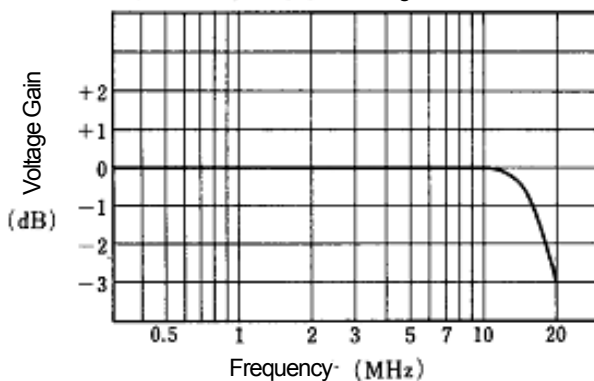
Output DC Level vs. Temperature

($V^+ = 5\text{V}$)



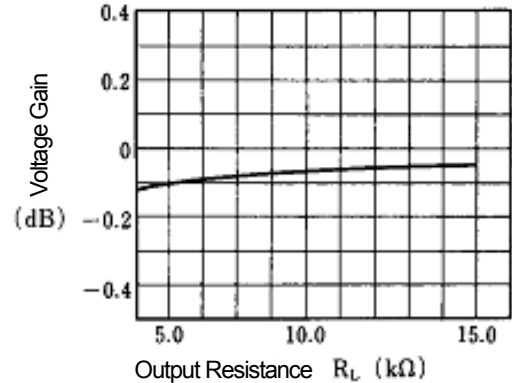
Voltage Gain vs. Frequency

($V^+ = 5\text{V}$, $2V_{P-P}$ Sin signal, $R_L = 5\text{k}\Omega$)



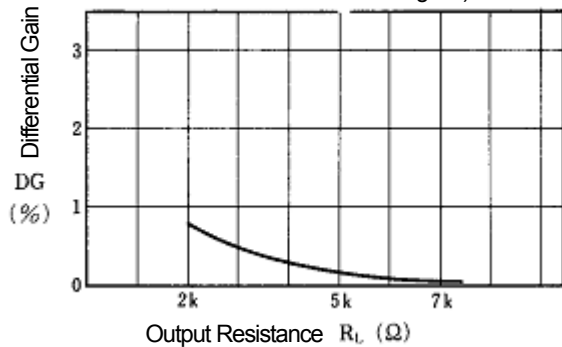
Voltage Gain vs. Output Resistance

($V^+ = 5\text{V}$, $2V_{P-P}$ Sin signal)

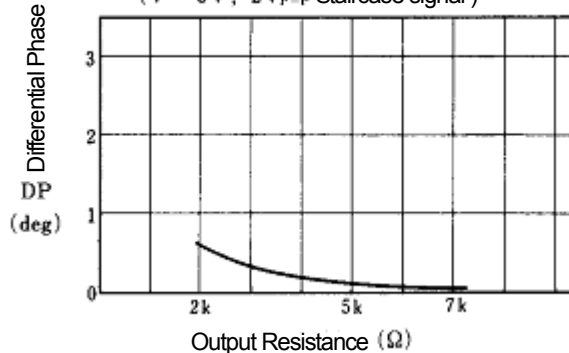


■ TYPICAL CHARACTERISTICS

Differential Gain vs. Output Resistance
($V^+ = 5V$, $2V_{P-P}$ Staircase signal)

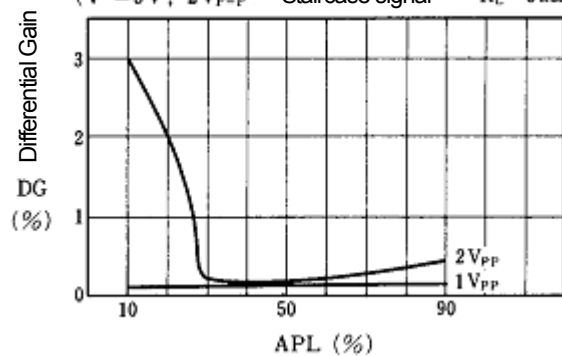


Differential Phase vs. Output Resistance
($V^+ = 5V$, $2V_{P-P}$ Staircase signal)



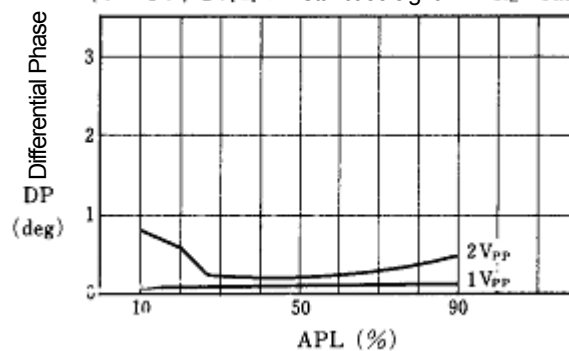
Differential Gain vs. APL

($V^+ = 5V$, $2V_{P-P}$ Staircase signal $R_L = 5k\Omega$)



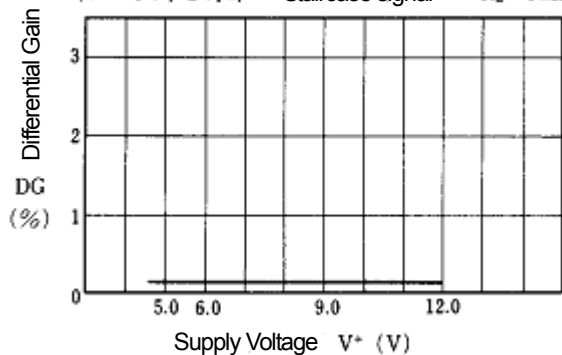
Differential Phase vs. APL

($V^+ = 5V$, $2V_{P-P}$ Staircase signal $R_L = 5k\Omega$)



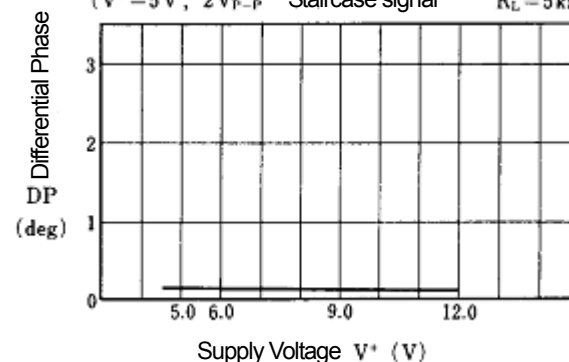
Differential Gain vs. Supply Voltage

($V^+ = 5V$, $2V_{P-P}$ Staircase signal $R_L = 5k\Omega$)

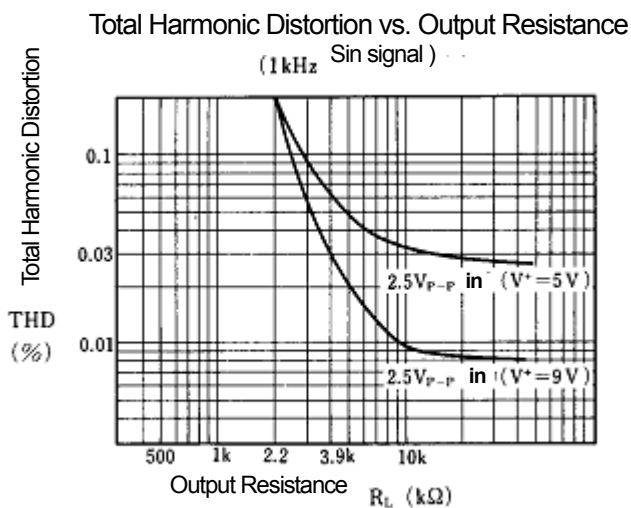
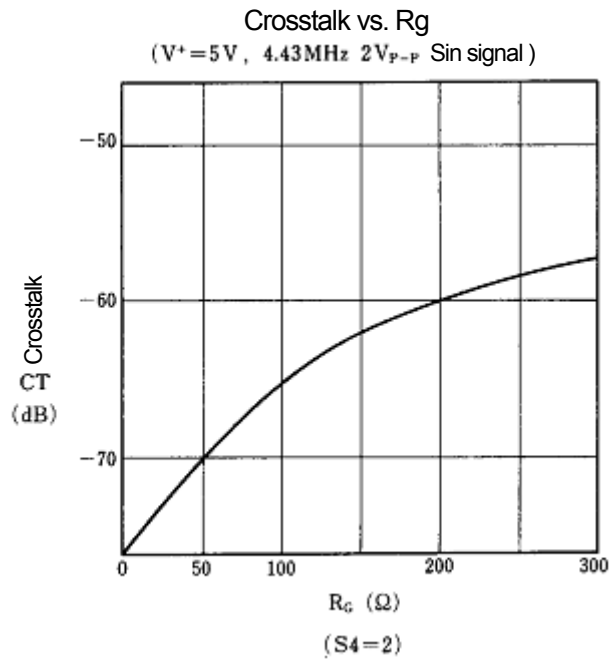
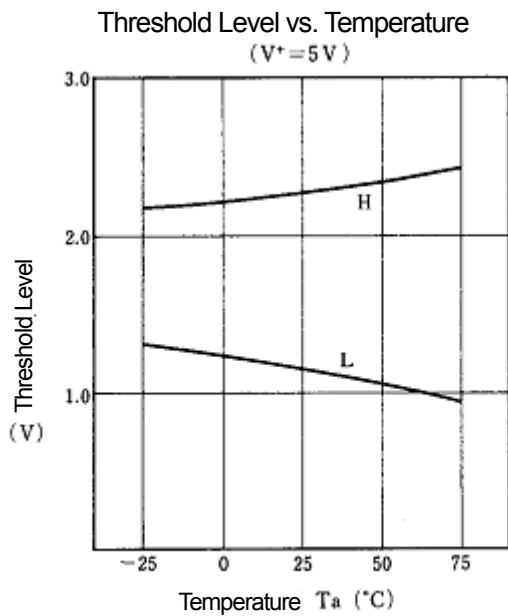
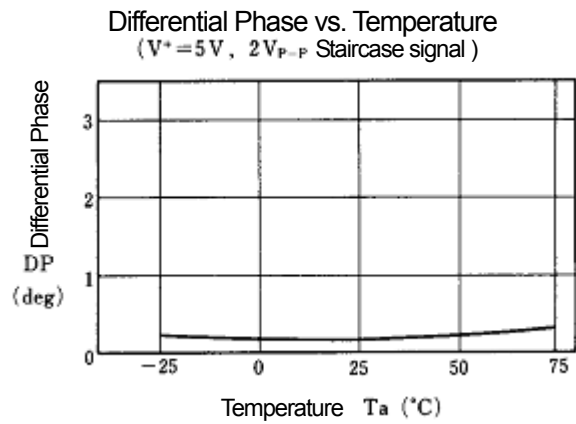
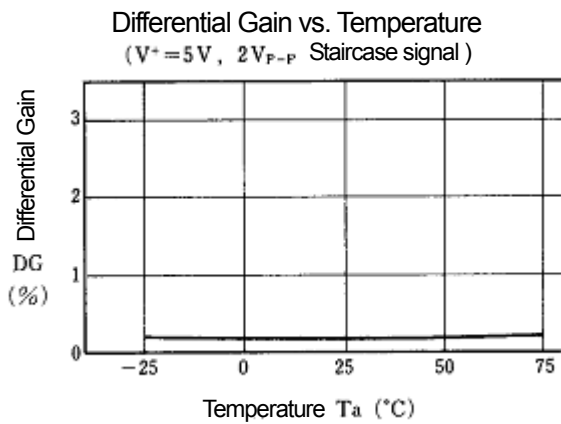


Differential Phase vs. Supply Voltage

($V^+ = 5V$, $2V_{P-P}$ Staircase signal $R_L = 5k\Omega$)

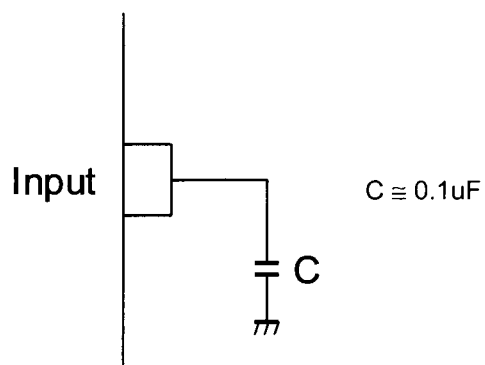


■ TYPICAL CHARACTERISTICS



■ APPLICATION

This IC requires 0.1 μ F capacitor between INPUT and GND for bias type input at mute mode.



[CAUTION]

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