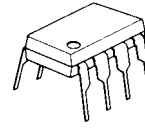


## 2-INPUT 1-OUTPUT VIDEO SWITCH

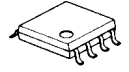
### ■ GENERAL DESCRIPTION

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

### ■ PACKAGE OUTLINE



**NJM2533D**



**NJM2533M**



**NJM2533L**



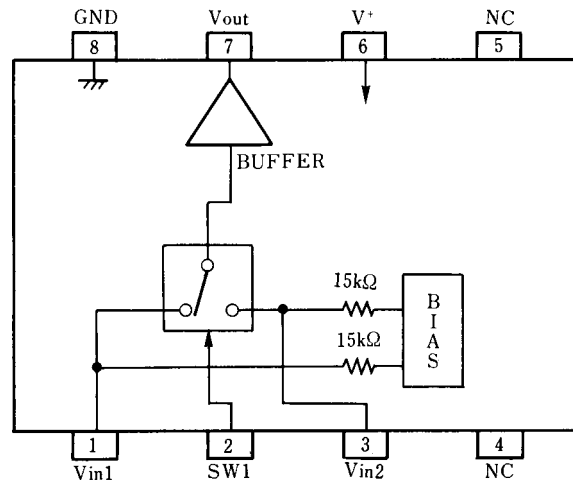
**NJM2533V**

NRND Product

### ■ 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

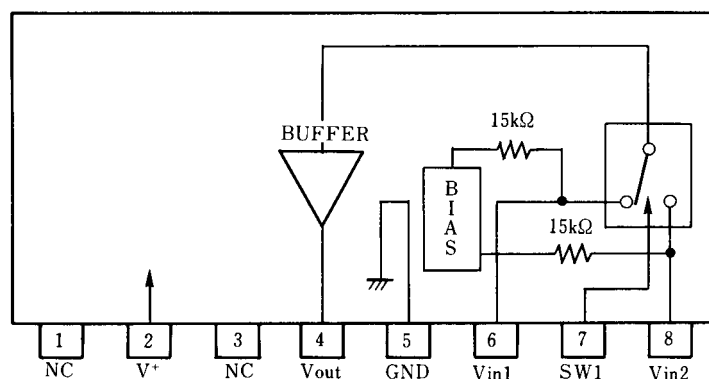
### ■ PIN CONFIGURATION



#### PIN FUNCTION

- 1 : Vin1
- 2 : SW1
- 3 : Vin2
- 4 : NC
- 5 : NC
- 6 : V+
- 7 : V<sub>OUT</sub>
- 8 : GND

**NJM2533D**  
**NJM2533M**  
**NJM2533V**



#### PIN FUNCTION

- 1 : NC
- 2 : V+
- 3 : NC
- 4 : V<sub>OUT</sub>
- 5 : GND
- 6 : Vin1
- 7 : SW1
- 8 : Vin2

**NJM2533L**

■ **ABSOLUTE MAXIMUM RATINGS**

(T<sub>a</sub> = 25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup>	+15	V
Power Dissipation	P <sub>D</sub>	(DIP-8) 500 (DMP-8) 300 (SIP-8) 800 (SSOP-8) 250	mW
Operating Temperature Range	T <sub>opr</sub>	-40 to +85	°C
Storage Temperature Range	T <sub>stg</sub>	-40 to +125	°C

■ **ELECTRICAL CHARACTERISTICS**

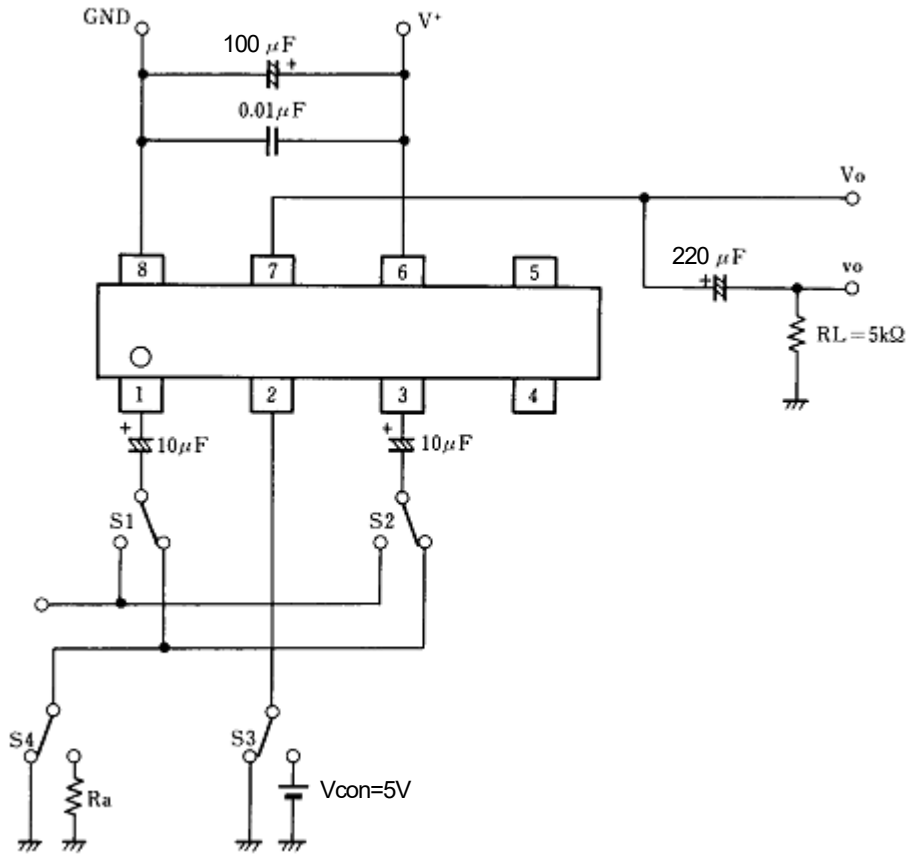
(V<sup>+</sup> = 5V, T<sub>a</sub> = 25°C)

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

■ **CONTROL SIGNAL-OUTPUT SIGNAL**

SW1	OUTPUT SIGNAL
L	V <sub>IN1</sub>
H	V <sub>IN2</sub>

■ TEST CIRCUIT



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

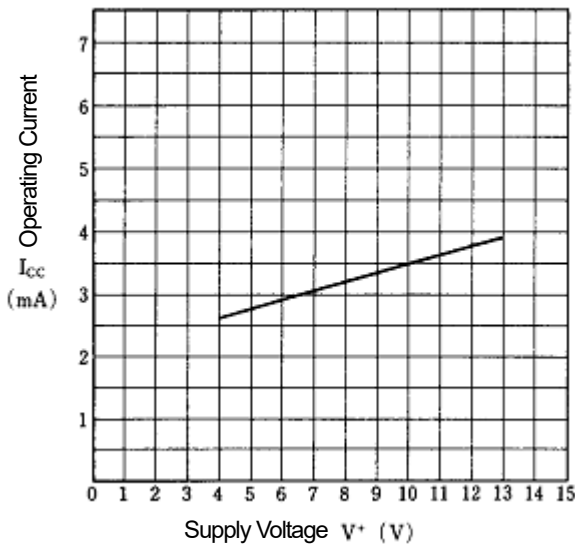
Terminal name	Vin1	Vin2	Vout
DC voltage (V)	$V^+/2$	$V^+/2$	$V^+/2 - 0.7$

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

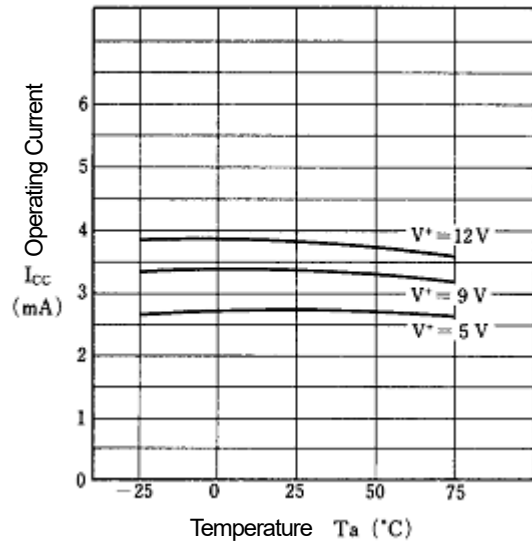
No.	SYMBOL	EQUIVALENT CIRCUIT	No.	SYMBOL	EQUIVALENT CIRCUIT
1	V <sub>IN1</sub>		5	NC	
2	SW1		6	V <sup>+</sup>	
3	V <sub>IN2</sub>		7	V <sub>OUT</sub>	
4	NC		8	GND	

■ TYPICAL CHARACTERISTICS

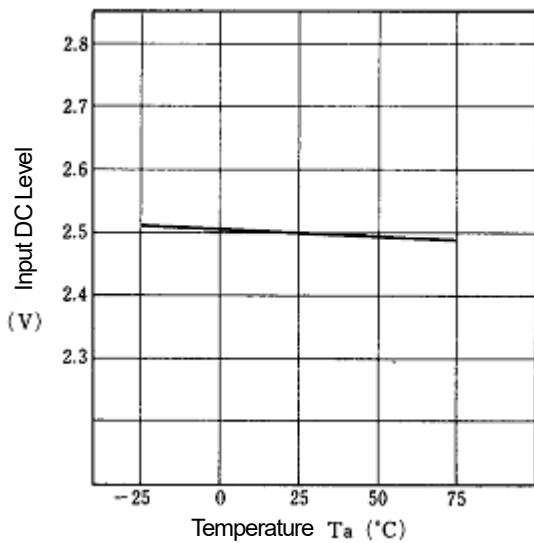
Operating Current vs. Supply Voltage  
( $T_a = 25^\circ\text{C}$ )



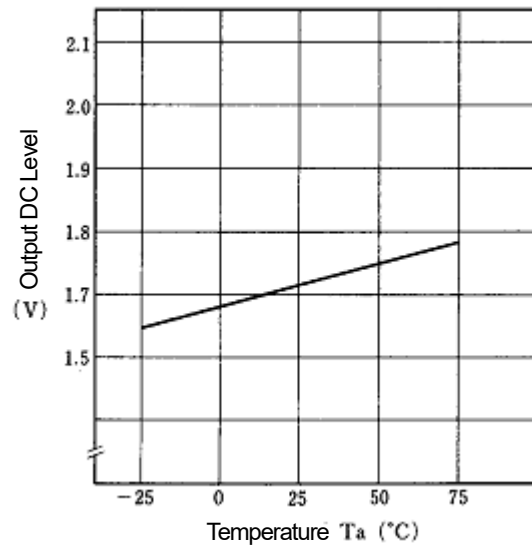
Operating Current vs. Temperature  
( $T_a = 25^\circ\text{C}$ )



Input DC Level vs. Temperature  
( $V^+ = 5\text{V}$ ,  $T_a = 25^\circ\text{C}$ )

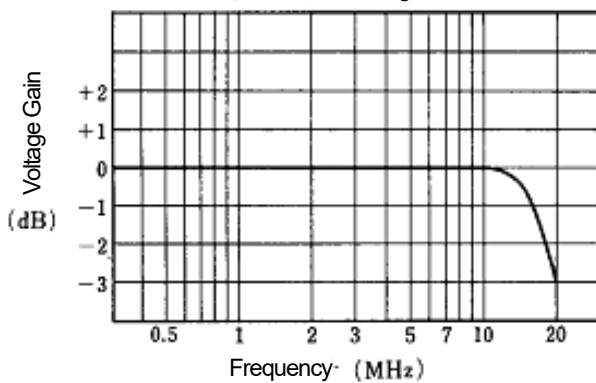


Output DC Level vs. Temperature  
( $V^+ = 5\text{V}$ )



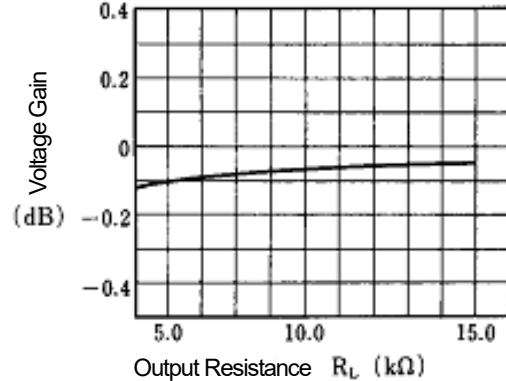
Voltage Gain vs. Frequency

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

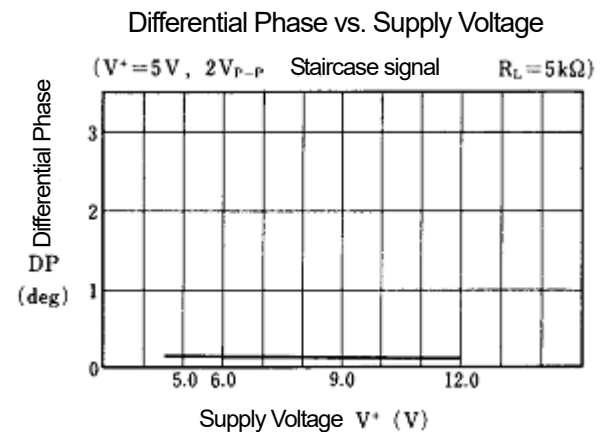
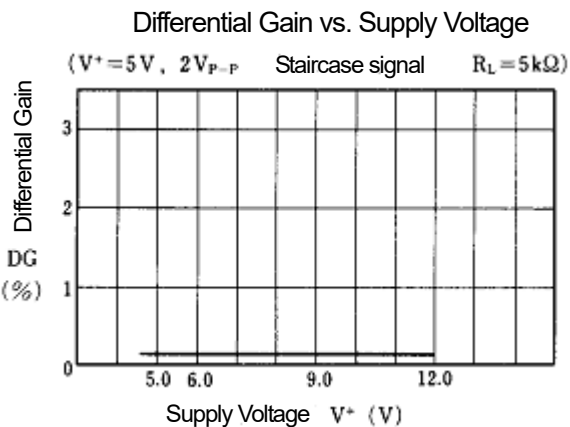
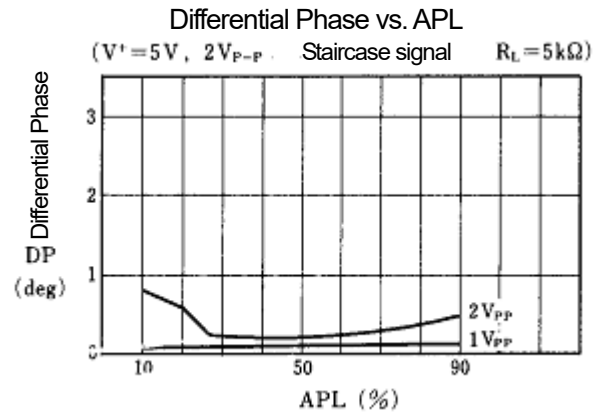
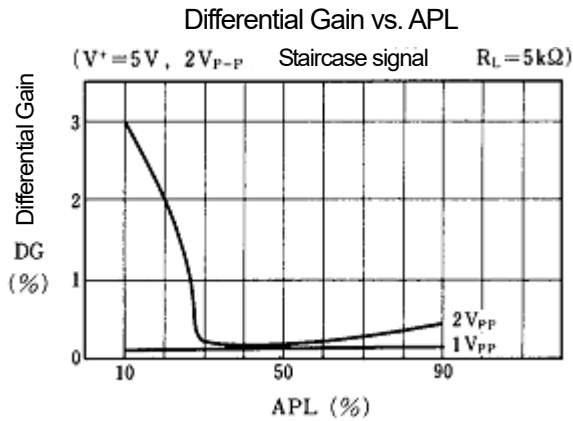
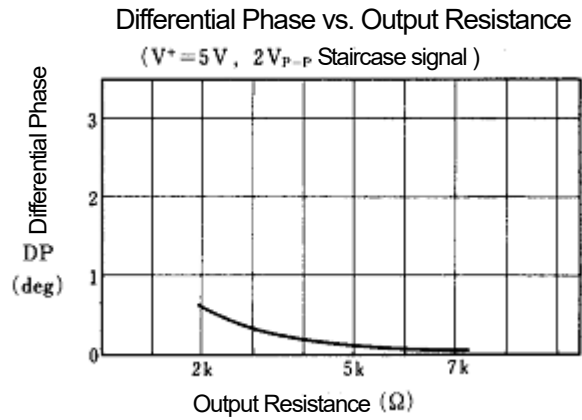
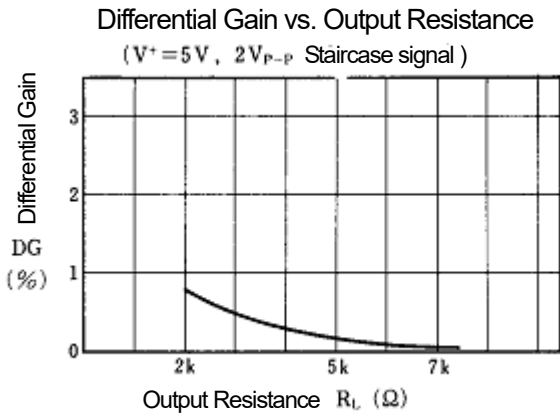


Voltage Gain vs. Output Resistance

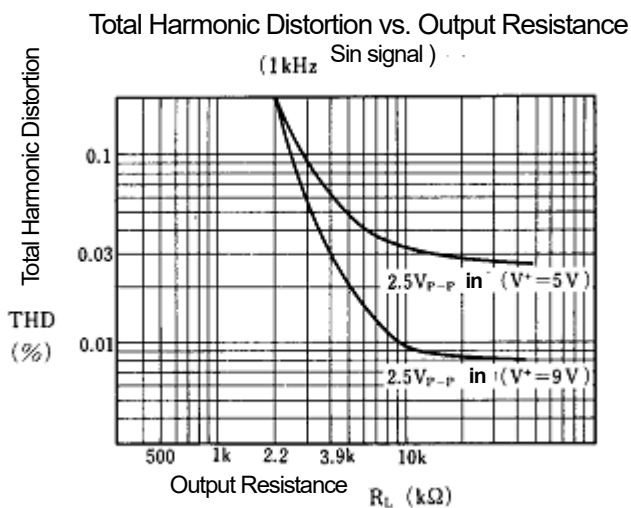
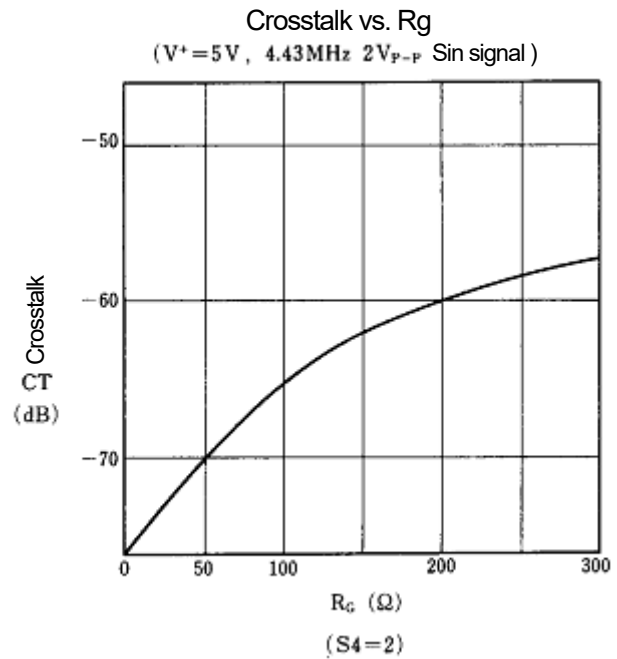
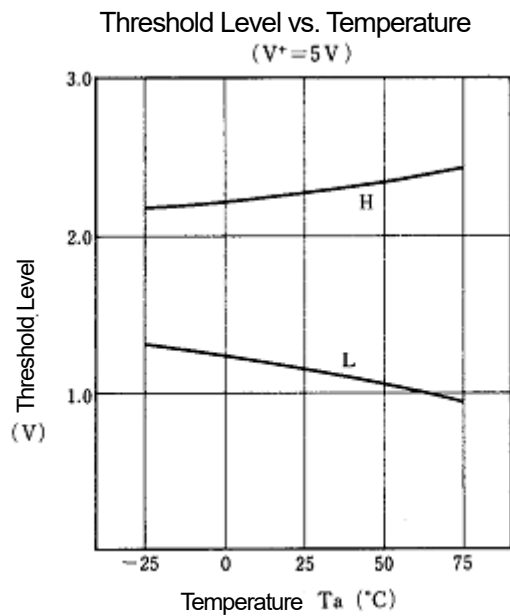
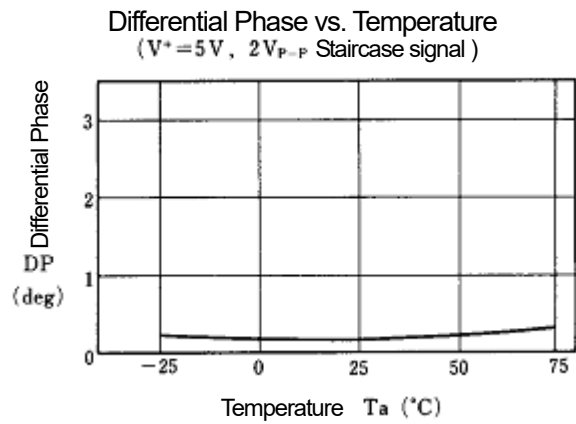
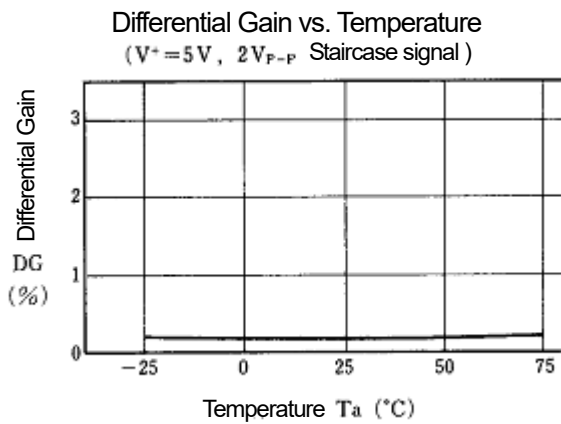
( $V^+ = 5\text{V}$ ,  $2V_{P-P}$  Sin signal )



■ TYPICAL CHARACTERISTICS

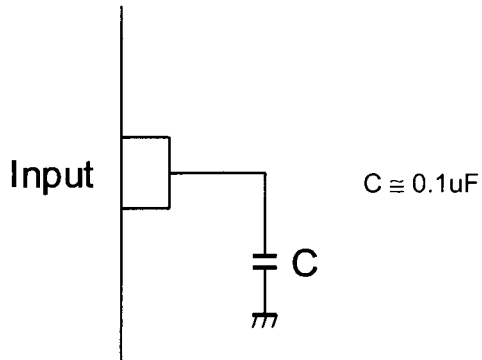


■ TYPICAL CHARACTERISTICS



## ■ APPLICATION

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



**[CAUTION]**  
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