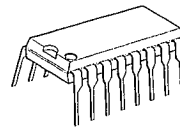


2-INPUT 3CHANNEL VIDEO SWITCH

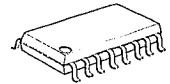
■ GENERAL DESCRIPTION

NJM2286 is a switching IC for switching over from one audio or video input signal to another. Internalizing 2 inputs, 1 output, and then each set of 3 can be operated independently. They are a "Clamp type" and it can be operated while DC level fixed in position of the video signal. It is a higher efficiency video switch, featuring the operating supply voltage 4.75 to 13.0V, the frequency feature 10MHz, and then the Crosstalk 75dB (at 4.43MHz).

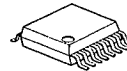
■ PACKAGE OUTLINE



NJM2286D



NJM2286M



NJM2286V

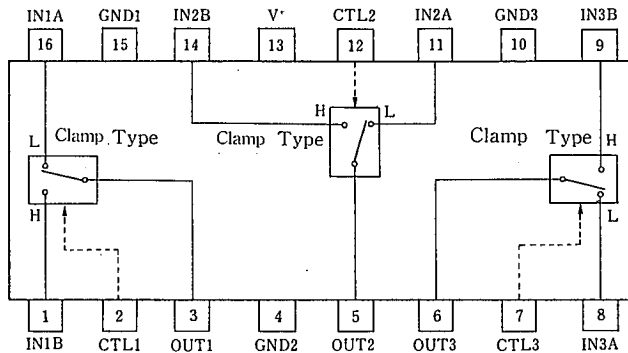
■ FEATURES

- 2 Input-1 Output Internalizing 3 Circuits (Clamp type).
- Wide Operating Voltage (4.75 ~ 13.0V)
- Crosstalk 75dB (at 4.43MHz)
- Wide Bandwidth Frequency Feature 10MHz (2V<sub>pp</sub> Input)
- Package Outline DIP16, DMP16, SSOP16
- Bipolar Technology

■ APPLICATIONS

- VCR, Video Camera, AV-TV, Video Disk Player.

■ BLOCK DIAGRAM



NJM2286D  
NJM2286M

## ■ MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup>	14	V
Power Dissipation	P <sub>D</sub>	(DIP16) 700 (DMP16) 350	mW
Operating Temperature Range	T <sub>opr</sub>	-40~+85	°C
Storage Temperature Range	T <sub>stg</sub>	-40~+125	°C

## ■ ELECTRICAL CHARACTERISTICS

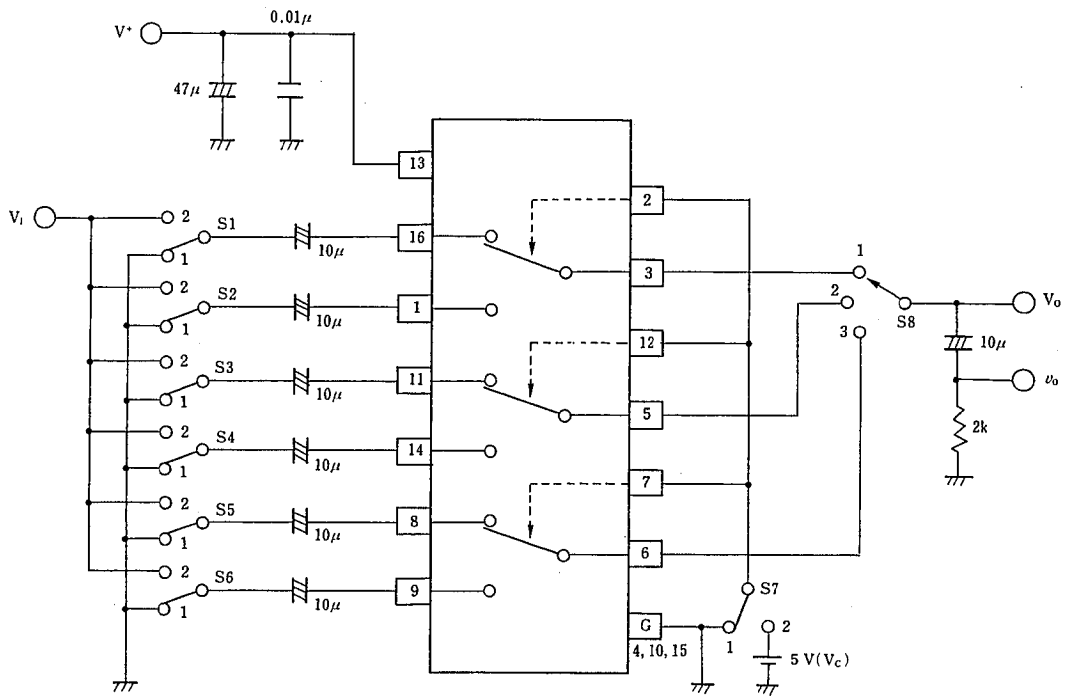
(V<sup>+</sup>=5V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current (1)	I <sub>CC1</sub>	V <sup>+</sup> =5V (Note1)	7.9	11.3	14.7	mA
Operating Current (2)	I <sub>CC2</sub>	V <sup>+</sup> =9V (Note1)	9.8	14.1	18.4	mA
Voltage Gain	G <sub>V</sub>	V <sub>I</sub> = 100kHz, 2V <sub>P-P</sub> , V <sub>O</sub> /V <sub>I</sub>	-0.6	-0.1	+0.4	dB
Frequency Gain	G <sub>F</sub>	V <sub>I</sub> = 2V <sub>P-P</sub> , V <sub>O</sub> (10MHz)/V <sub>O</sub> (100kHz)	-1.0	0	+1.0	dB
Differential Gain	DG	V <sub>I</sub> = 2V <sub>P-P</sub> , Standard Staircase Signal	—	0.3	—	%
Differential Phase	DP	V <sub>I</sub> = 2V <sub>P-P</sub> , Standard Staircase Signal	—	0.3	—	deg
Output Offset Voltage	V <sub>OS</sub>	(Note2)	-15	0	+15	mV
Crosstalk	CT	V <sub>I</sub> = 2V <sub>P-P</sub> , 4.43MHz, V <sub>O</sub> /V <sub>I</sub>	—	-75	—	dB
Switch Change Over Voltage	V <sub>CH</sub>	All inside Switch ON	2.5	—	—	V
Switch Change Over Voltage	V <sub>CL</sub>	All inside Switch OFF	—	—	1.0	V

(Note1) S1=S2=S3=S4=S5=S6=S7=1

(Note2) S1=S2=S3=S4=S5=S6=1, S7=1→2 Measure the output DC voltage difference

■ TEST CIRCUIT



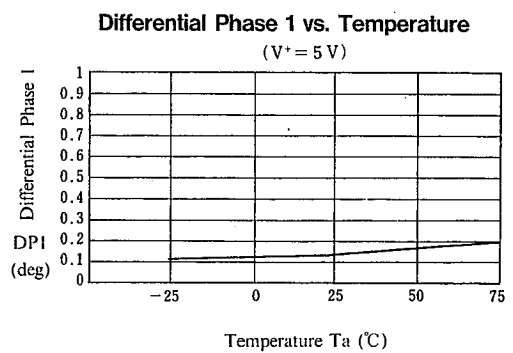
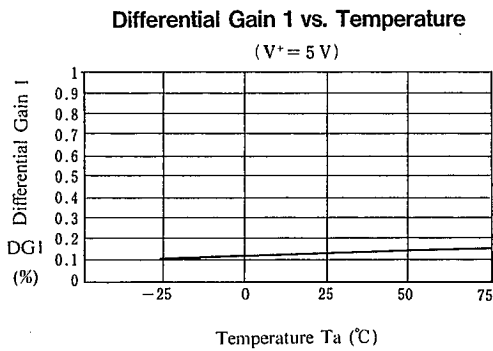
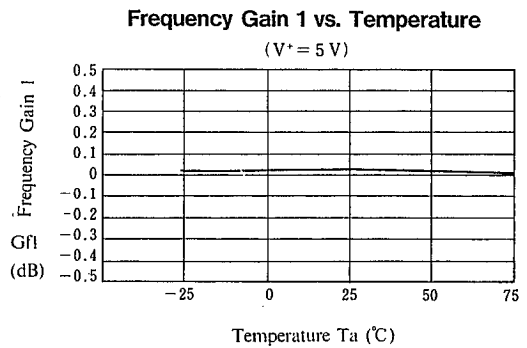
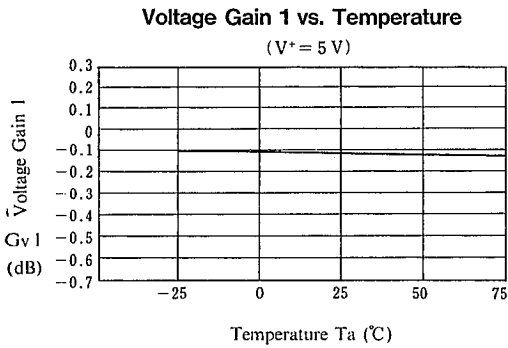
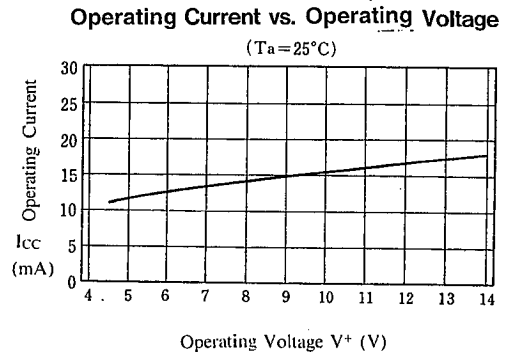
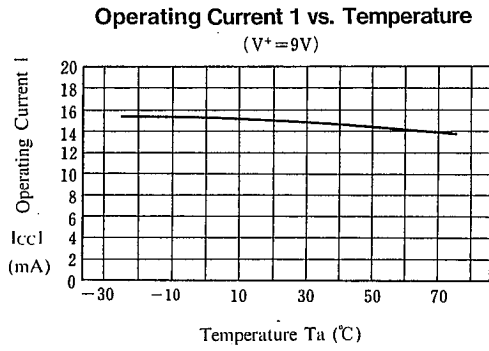
This IC requires 1MΩ resistance between INPUT and GND pin for clamp type input since the minute current causes an unstable pin voltage.

PARAMETER	S 1	S 2	S 3	S 4	S 5	S 6	S 7	S 8	TEST PART
Icc1	1	1	1	1	1	1	1	1	V+
Icc2	1	1	1	1	1	1	1	1	
Gv1	2	1	1	1	1	1	1	1	vo
Gf1	2	1	1	1	1	1	1	1	
DG1	2	1	1	1	1	1	1	1	
DP1	2	1	1	1	1	1	1	1	
CT 1	2	1	1	1	1	1	2	1	vo
CT 2	1	2	1	1	1	1	1	1	
CT 3	1	1	2	1	1	1	2	2	
CT 4	1	1	1	2	1	1	1	2	
CT 5	1	1	1	1	2	1	2	3	
CT 6	1	1	1	1	1	2	1	3	
Vos1	1	1	1	1	1	1	1/2	1	Vo
Vc1	1/2	2/1	1	1	1	1	Vc	1	Vc
THD	2	1	1	1	1	1	1	1	vo

## ■ TERMINAL EXPLANATION

PIN No.	PIN NAME	VOLTAGE	INSIDE EQUIVALENT CIRCUIT
16 1 11 14 8 9	IN 1 A IN 1 B IN 2 A IN 2 B IN 3 A IN 3 B (Input)	1.5V	
2 12 7	CTL 1 CTL 2 CTL 3 (Switching)		
3 5 6	OUT 1 OUT 2 OUT 3 (Output)	0.8V	
13	V+	5V	
15 4 10	GND 1 GND 2 GND 3		

■ TYPICAL CHARACTERISTICS

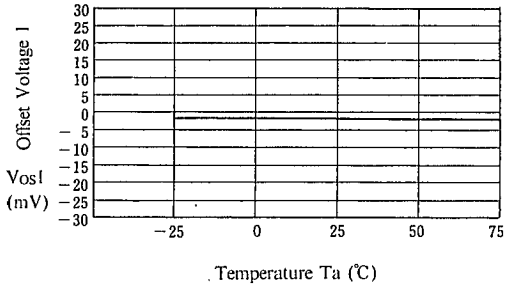


5

## TYPICAL CHARACTERISTICS

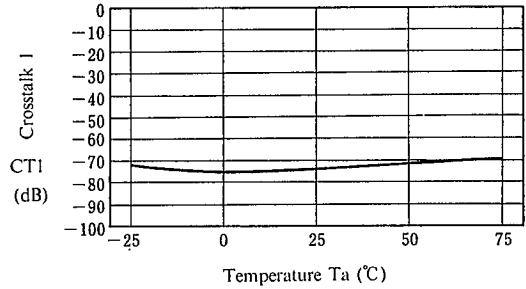
Offset Voltage vs. Temperature

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



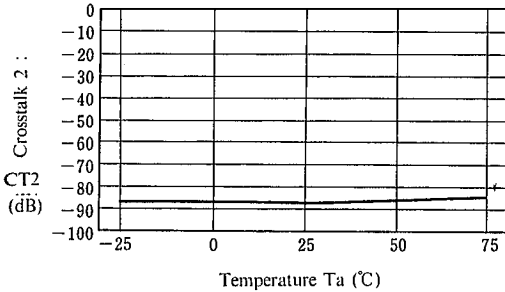
Crosstalk 1 vs. Temperature

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



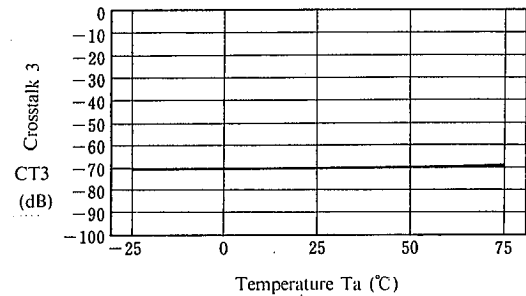
Crosstalk 2 vs. Temperature

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



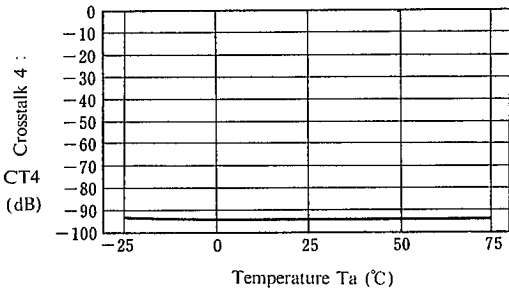
Crosstalk 3 vs. Temperature

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



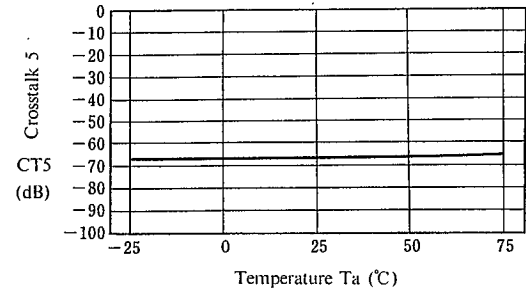
Crosstalk 4 vs. Temperature

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



Crosstalk 5 vs. Temperature

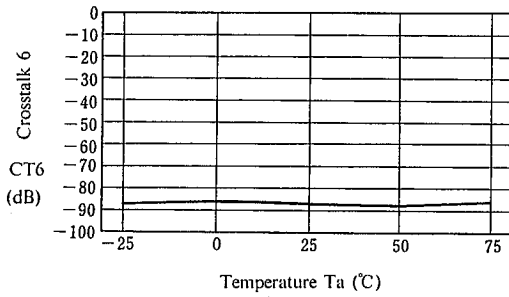
( $V^+ = 5\text{ V}$ )



■ TYPICAL CHARACTERISTICS

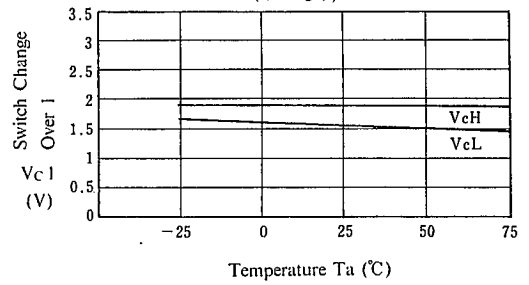
Crosstalk 6 vs. Temperature

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



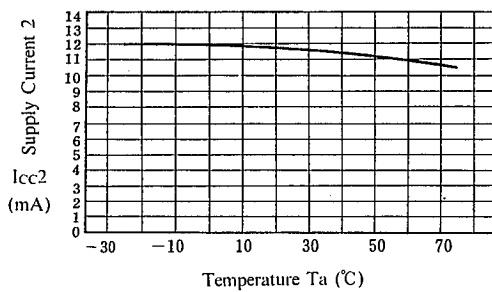
Switch Change Over 1 vs. Temperature

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



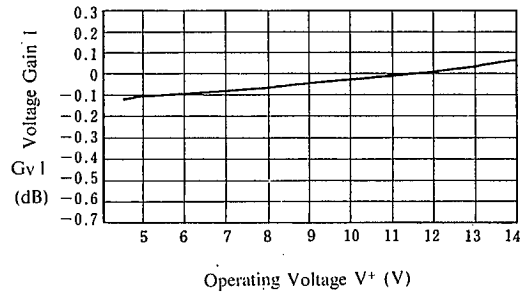
Supply Current 2 vs. Temperature

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



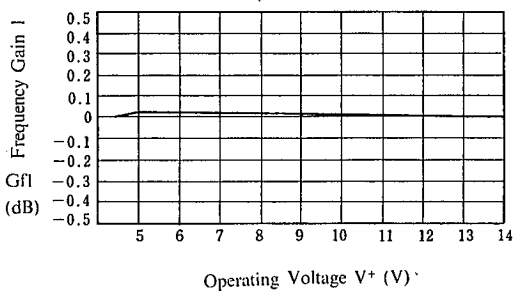
Voltage Gain 1 vs. Operating Voltage

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



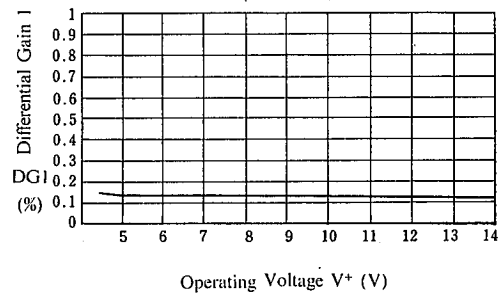
Frequency Gain 1 vs. Operating Voltage

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

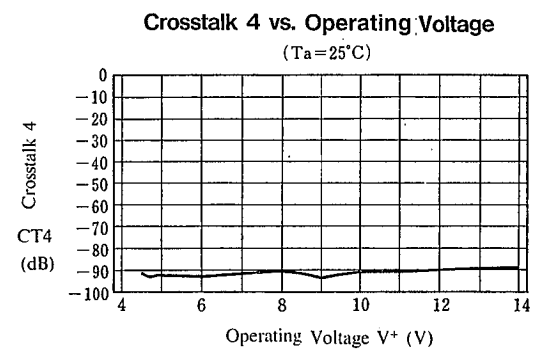
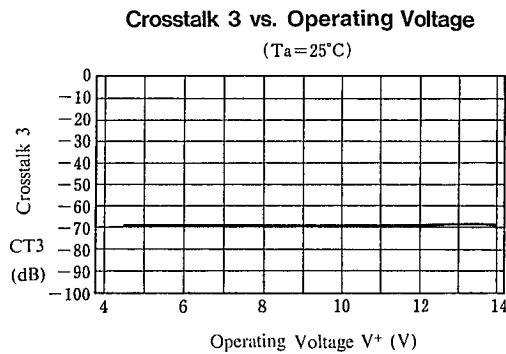
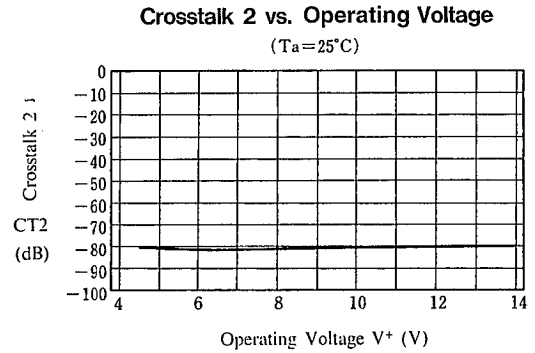
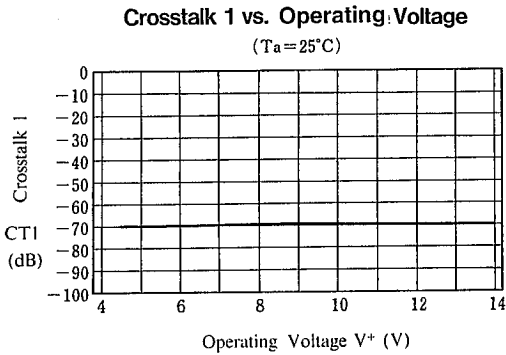
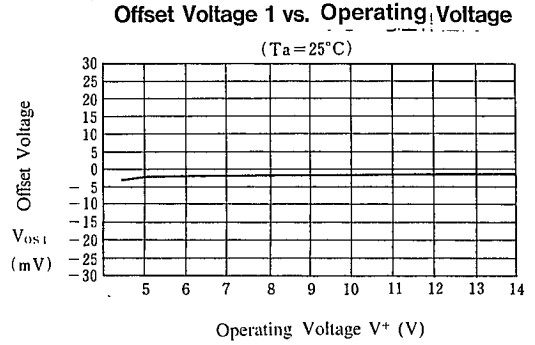
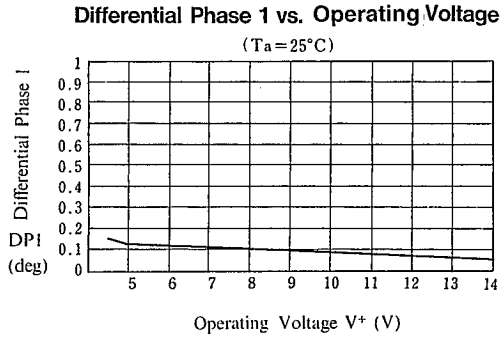


Differential Gain 1 vs. Operating Voltage

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

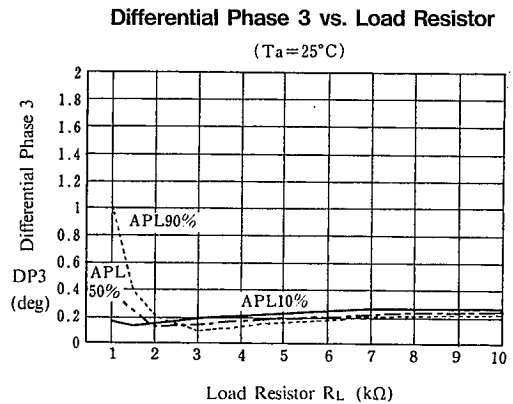
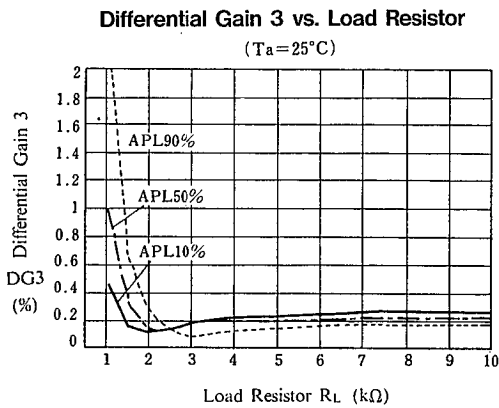
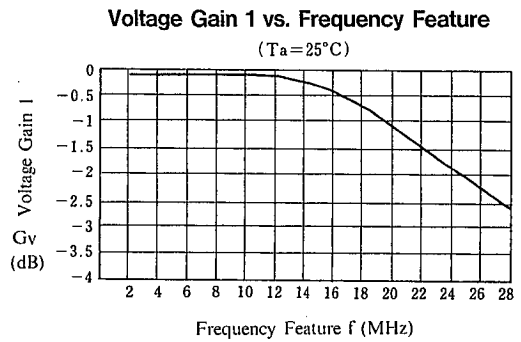
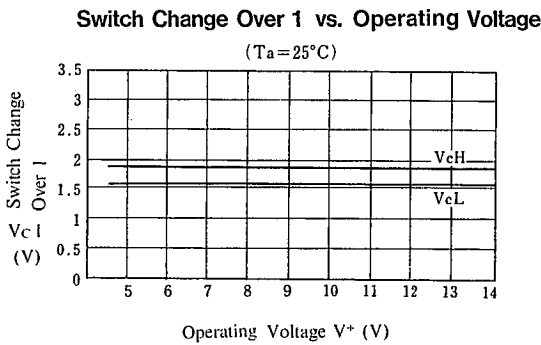
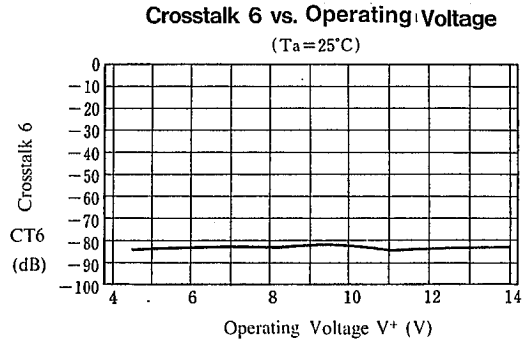
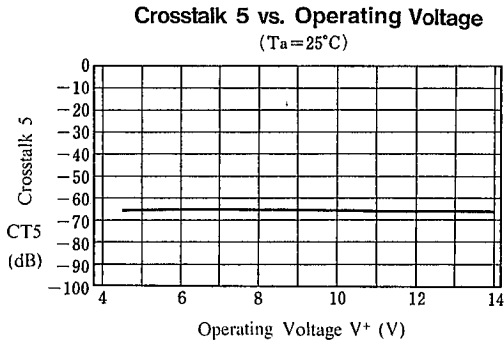


## ■ TYPICAL CHARACTERISTICS

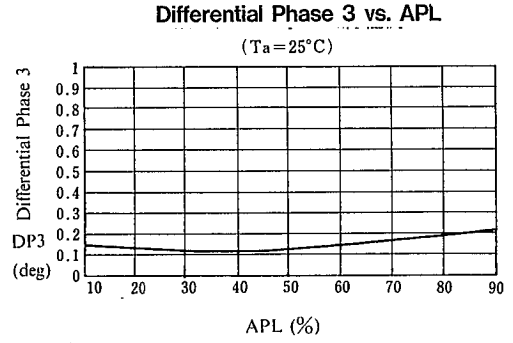
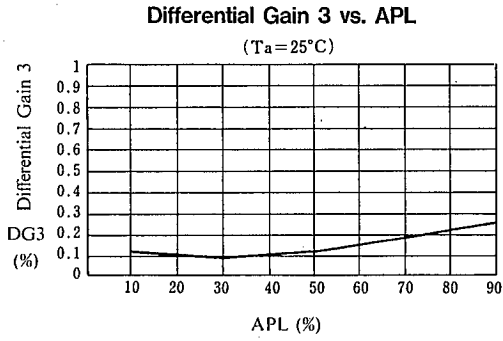




■ TYPICAL CHARACTERISTICS



## ■ TYPICAL CHARACTERISTICS



## MEMO

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