

NJM2286

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 5 to 12 V, the frequency feature 10 MHz. and then the Crosstalk 75 dB (at 4.43 MHz.).

■ Feature

- 2 Input-1 Output Internalizing 3 Circuits (Clamp type).
- Wide Operating Supply Voltage
- Crosstalk 75dB (at 4.43MHz)
- Wide Bandwidth Frequency Feature 10MHz (2V_{P-P} Input)
- DIP-16, DMP-16

■ Applications

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

■ Maximum Ratings(T_a =25°C)

Supply Voltage	V ⁺	14V
Power Dissipation	P _D (D Type)	700mW
	(M Type)	350mW
Operating Temperature Range	T _{opr}	-20~+75°C
Storage Temperature Range	T _{stg}	-40~+125°C

■ Recommended Operating Condition

Supply Voltage	V ⁺	4.75~13.0V
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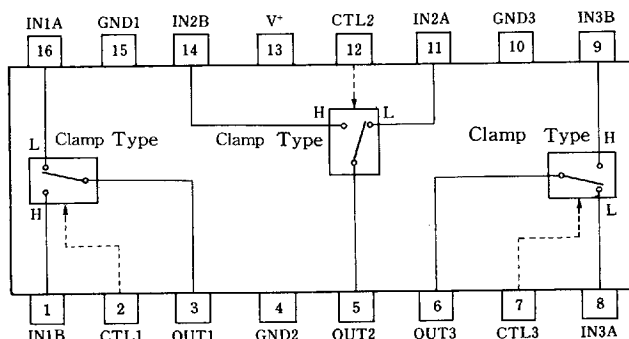
■ Electrical Characteristics (V⁺=5V, T_a =25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Supply Current (1)	I _{CC1}	V ⁺ =5V (Note1)	8.0	11.4	14.8	mA
Supply Current (2)	I _{CC2}	V ⁺ =9V (Note1)	10.0	14.3	18.6	mA
Voltage Gain	G _v	V _I =100kHz, 2V _{P-P} , V _O /V _I	-0.6	-0.1	+0.4	dB
Frequency Gain	G _f	V _I =2V _{P-P} , V _O (10MHz)/V _O (100kHz)	-1.0	0	+1.0	dB
Differential Gain	DG	V _I =2V _{P-P} , Standard Staircase Signal	—	0.3	—	%
Differential Phase	DP	V _I =2V _{P-P} , Standard Staircase Signal	—	0.3	—	deg
Output Offset Voltage	V _{OS}	(Note2)	-10	0	+10	mV
Crosstalk	CT	V _I =2V _{P-P} , 4.43MHz, V _O /V _I	—	-75	—	dB
Switch Change Over Voltage	V _{CH}	All inside Switch ON	2.5	—	—	V
Switch Change Over Voltage	V _{CL}	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

■ Block Diagram

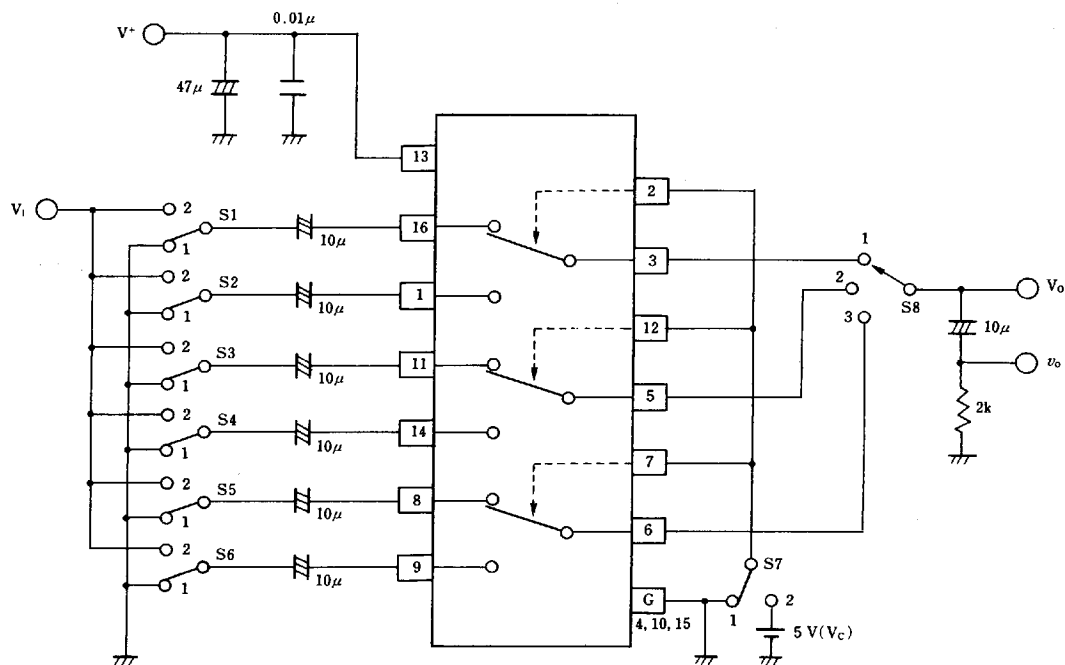


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■ Test Circuit

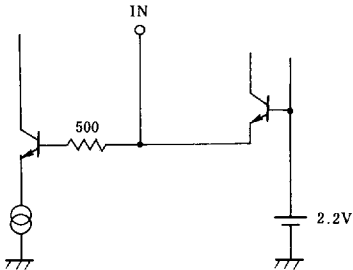
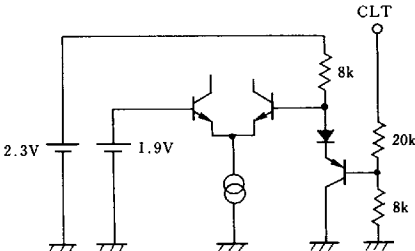
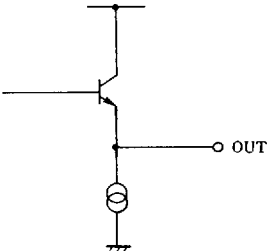


Parameter	S 1	S 2	S 3	S 4	S 5	S 6	S 7	S 8	Test Part
I _{cc1}	1	1	1	1	1	1	1	1	V ⁺
I _{cc2}	1	1	1	1	1	1	1	1	
G _{v1}	2	1	1	1	1	1	1	1	v ₀
G _{i1}	2	1	1	1	1	1	1	1	
DG ₁	2	1	1	1	1	1	1	1	
DP ₁	2	1	1	1	1	1	1	1	
CT 1	2	1	1	1	1	1	2	1	
CT 2	1	2	1	1	1	1	1	1	v ₀
CT 3	1	1	2	1	1	1	2	2	
CT 4	1	1	1	2	1	1	1	2	
CT 5	1	1	1	1	2	1	2	3	
CT 6	1	1	1	1	1	2	1	3	
V _{os1}	1	1	1	1	1	1	1/2	1	V _o
V _{c1}	1/2	2/1	1	1	1	1	V _c	1	V _c
THD	2	1	1	1	1	1	1	1	v ₀

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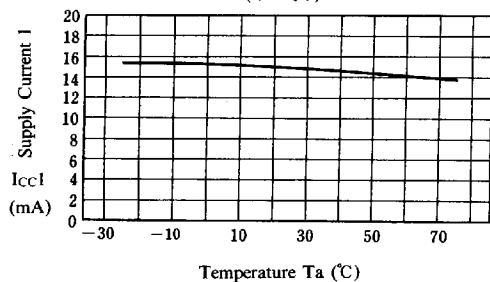
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■ Terminal Explanation

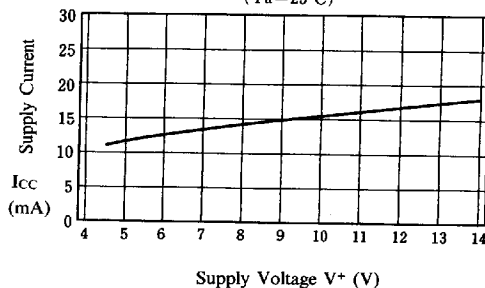
Pin No.	Pin Name	Voltage	Inside Equivalent Circuit
16 1 11 14 8 9	IN 1 A IN 1 B IN 2 A IN 2 B IN 3 A IN 3 B (Input)	1.5V	
2 12 7	CTL 1 CTL 2 CTL 3 (Switching)		
3 5 6	OUT 1 OUT 2 OUT 3 (Output)	0.8V	
13	V+	5 V	
15 4 10	GND 1 GND 2 GND 3		

■ Typical Characteristics

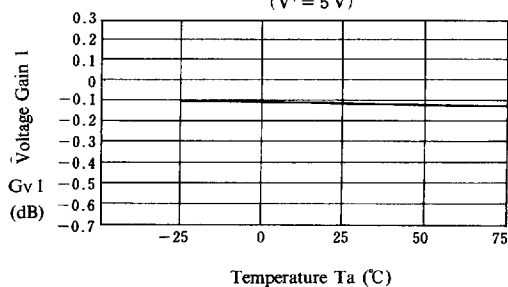
Supply Current 1 vs. Temperature
($V^+ = 9V$)



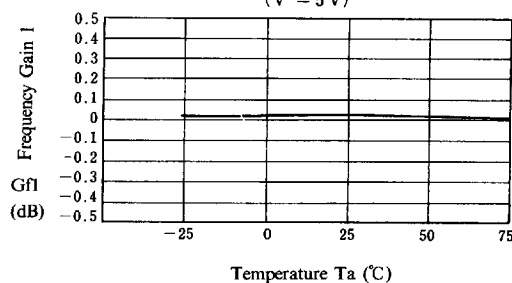
Supply Current vs. Supply Voltage
($T_a = 25^\circ C$)



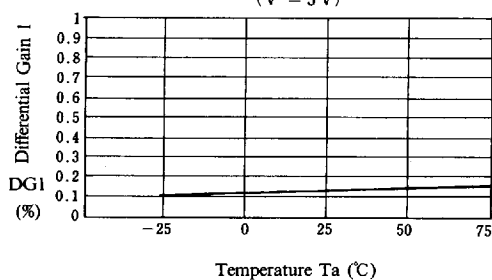
Voltage Gain 1 vs. Temperature
($V^+ = 5V$)



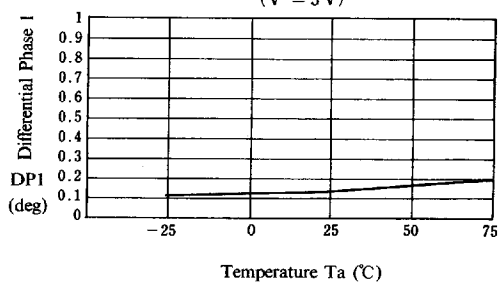
Frequency Gain 1 vs. Temperature
($V^+ = 5V$)



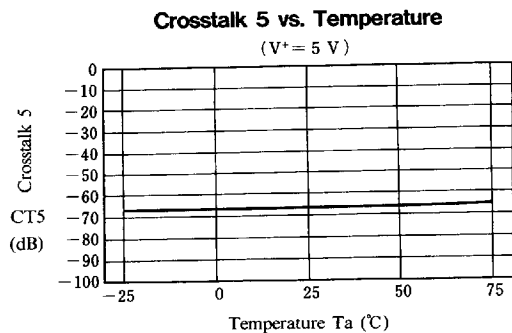
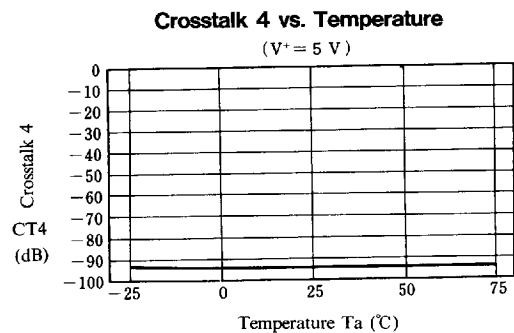
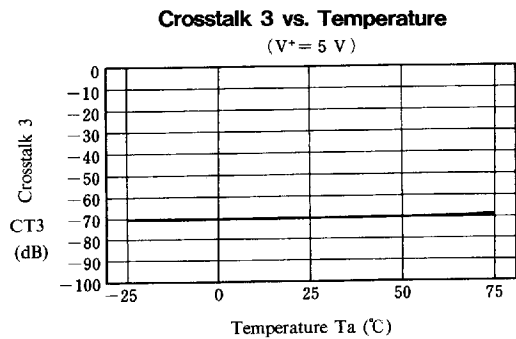
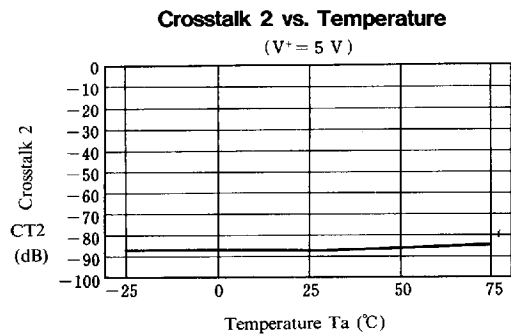
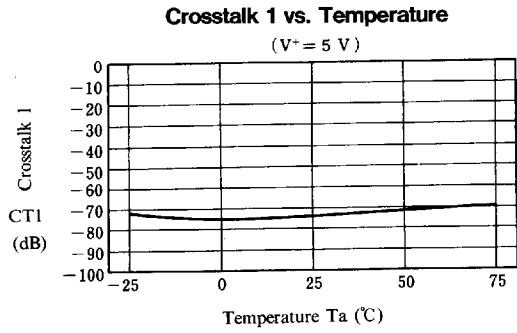
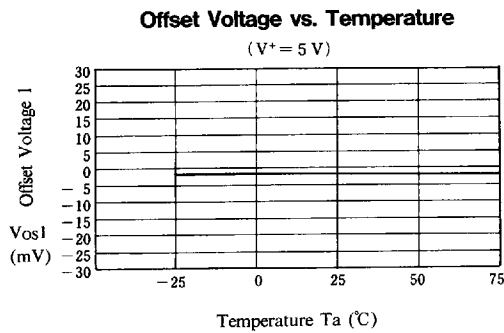
Differential Gain 1 vs. Temperature
($V^+ = 5V$)



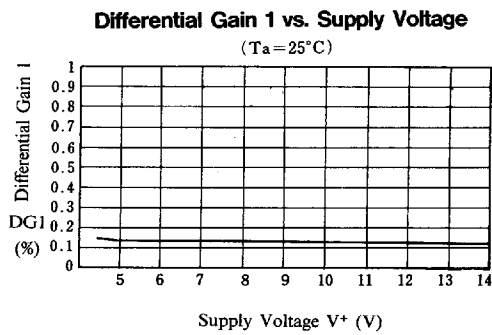
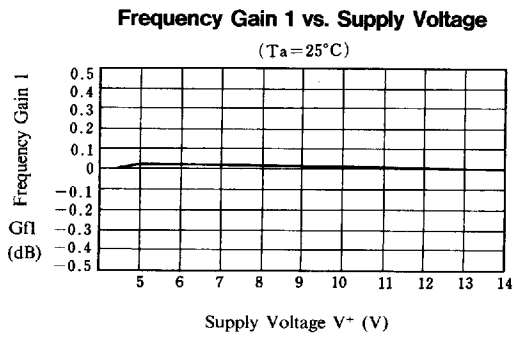
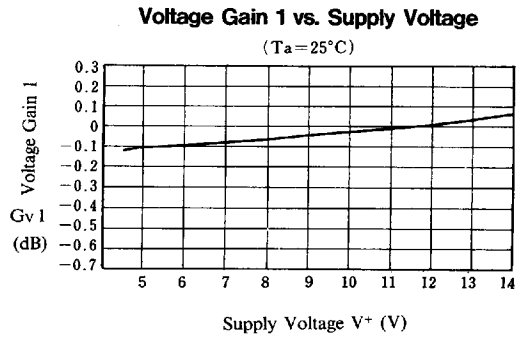
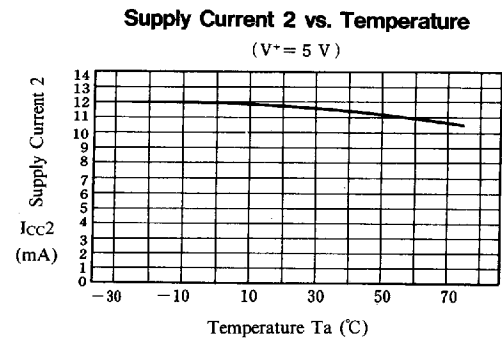
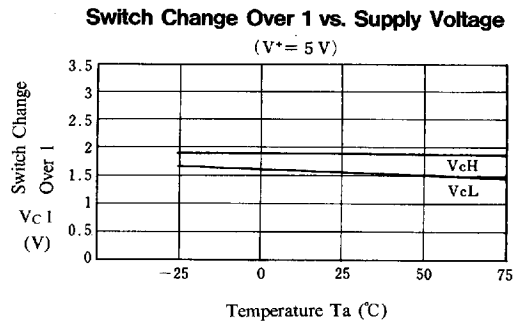
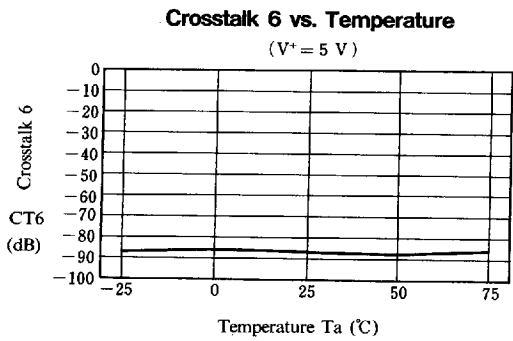
Differential Phase 1 vs. Temperature
($V^+ = 5V$)



■ Typical Characteristics



■ Typical Characteristics



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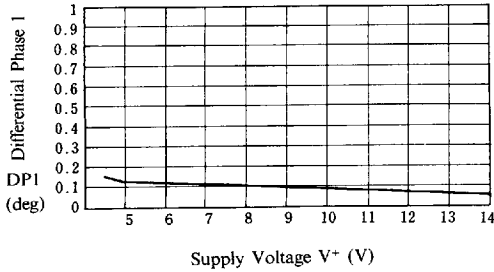
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■ Typical Characteristics

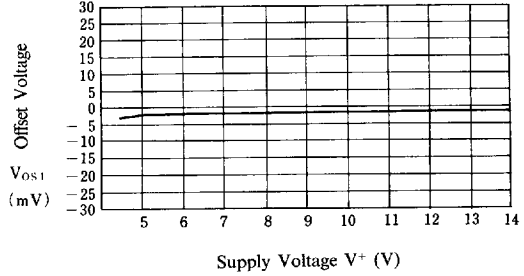
Differential Phase 1 vs. Supply Voltage

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



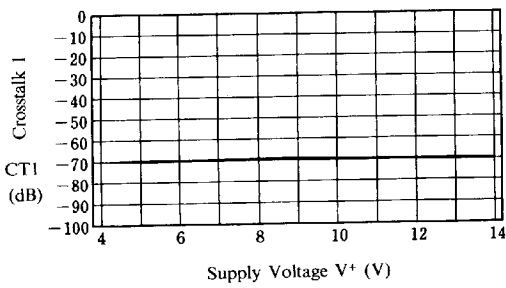
Offset Voltage 1 vs. Supply Voltage

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



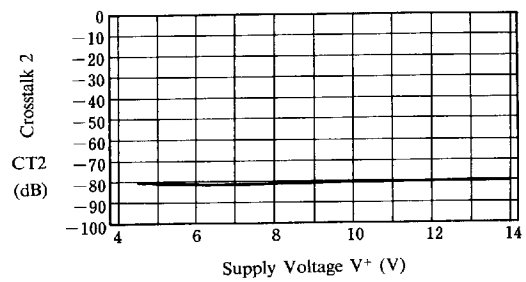
Crosstalk 1 vs. Supply Voltage

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



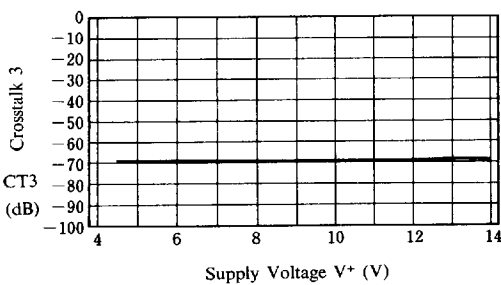
Crosstalk 2 vs. Supply Voltage

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



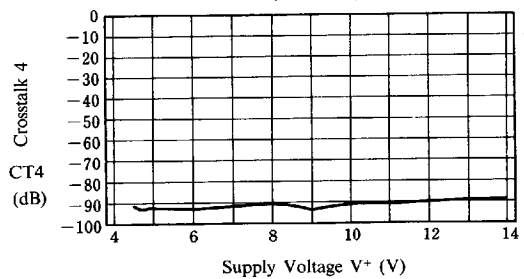
Crosstalk 3 vs. Supply Voltage

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

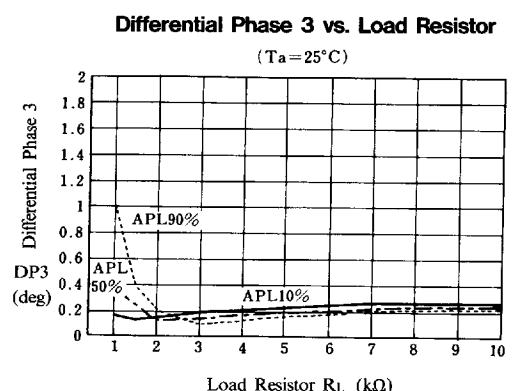
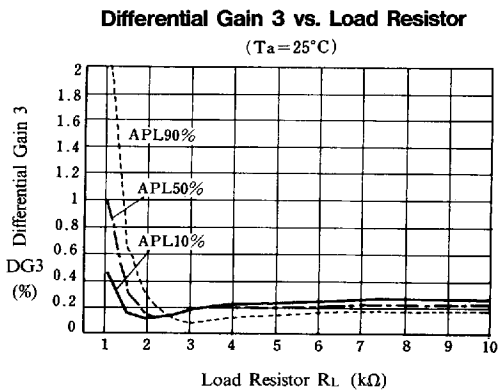
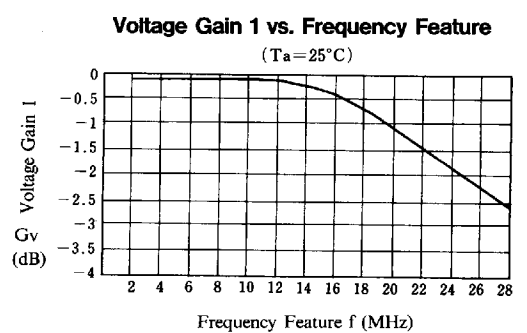
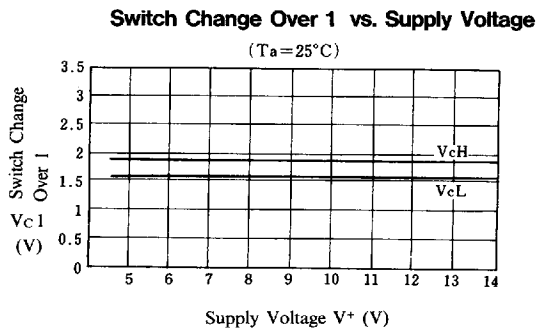
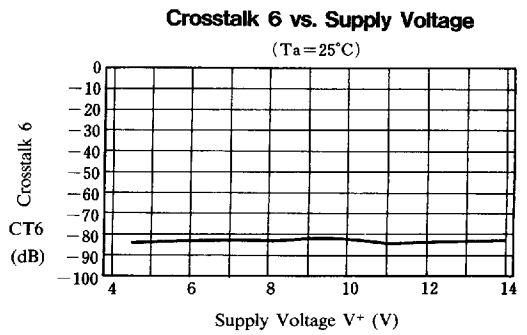
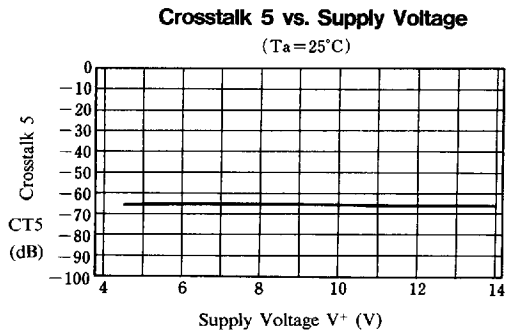


Crosstalk 4 vs. Supply Voltage

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

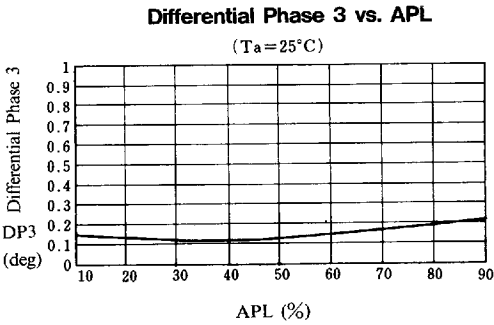
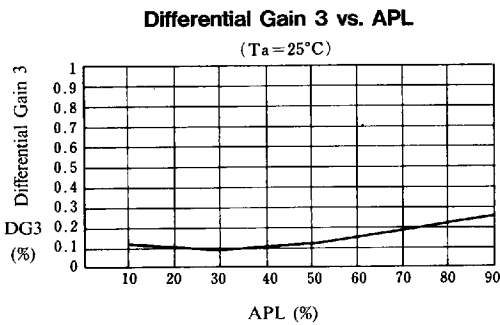


■ Typical Characteristics



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■ Typical Characteristics



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