

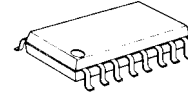
2 - INPUT VIDEO SUPERIMPOSER

■ GENERAL DESCRIPTION

NJM2262 is a 2input video superimposer, including video switch circuit that consist of four Y signal circuit and one C signal circuit.

Its impose voltage is set up white level and black level but You can fix its impose voltage.

■ PACKAGE OUTLINE



NJM2262M

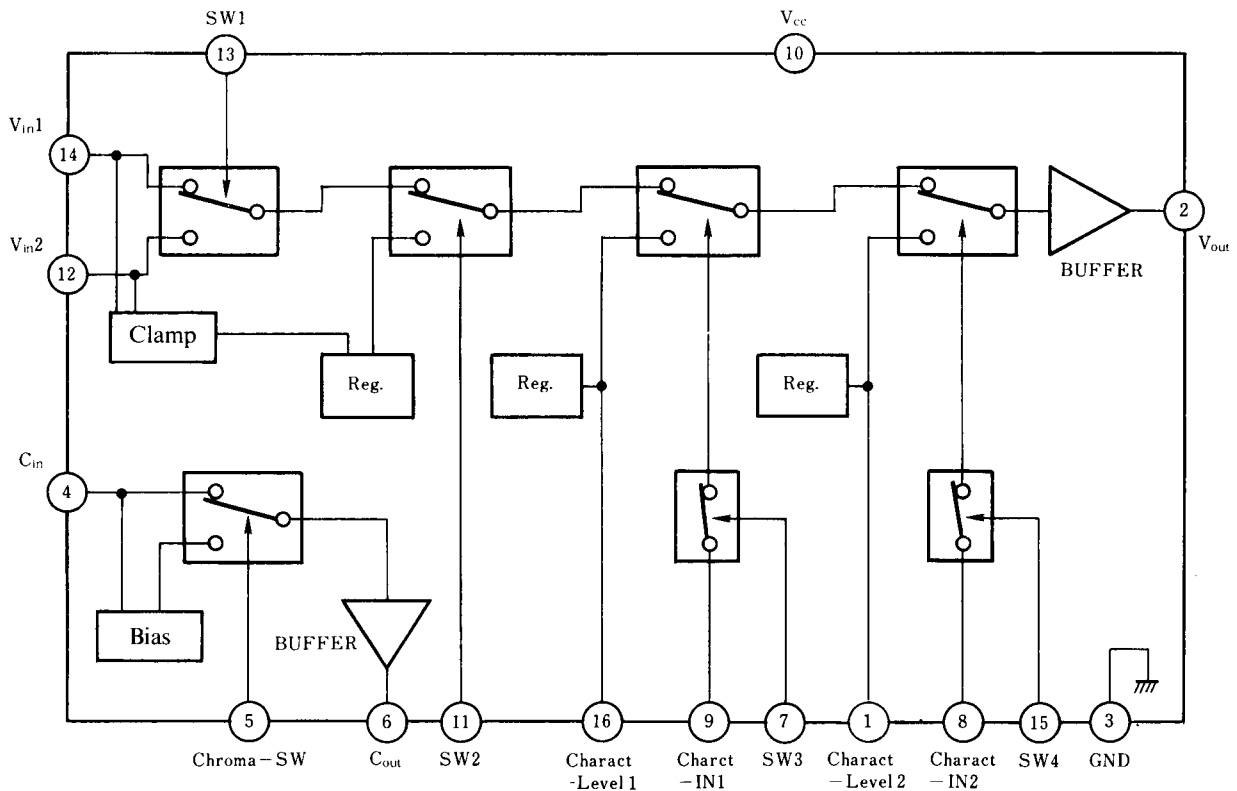
■ FEATURES

- Operating Voltage (4.5V to 5.5V)
- Low Operating Current : 5V movement ($I_{CC} = 8mA$)
- Internal Video SW
- Internal Clamp circuit and Bias circuit
- Impose voltage is step up white level and black level but you can fix is impose voltage.
- Package Outline DMP16
- Bipolar Technology

■ APPLICATION

- VTR Camera, VTR, TV etc.

■ BLOCK DIAGRAM



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■ ABSOLUTE MAXIMUM RATINGS

(T_a = 25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	+7	V
Power Dissipation	P _D	300	mW
Operating Temperature Range	T _{opr}	-20 to +75	°C
Storage Temperature Range	T _{stg}	-40 to +125	°C

■ ELECTRICAL CHARACTERISTICS

(V⁺ = 5V, V_{in} = 1V, T_a = 25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I _{CC}	No signal	-	8.0	12.0	mA
Y Voltage Gain	G _{VY}	1MHz, 1V _{P-P} Sine Wave	-0.7	-0.2	+0.3	dB
C Voltage Gain	G _{VE}	1MHz, 1V _{P-P} Sine Wave	-0.8	-0.3	+0.2	dB
Y Frequency Characteristics	G _{FY}	V _O (7MHz) / V _O (1MHz)	-1.0	0	+1.0	dB
C Frequency Characteristics	G _{FE}	V _O (7MHz) / V _O (1MHz)	-1.0	0	+1.0	dB
Differential Gain	DG	Stea Step	-	-	3.0	%
Differential Phase	DP	Stea Step	-	-	3.0	deg
Output Offset Voltage	V _{OS}		-15.0	0	+15.0	mV
Y Cross-Talk	CT _Y	4.43MHz Vo / Vi	-	-60.0	-50.0	dB
C-Y Cross-Talk	CT _{CY}	4.43MHz Vo / Vi	-	-60.0	-50.0	dB
Y-C Cross-Talk	CT _{YC}	4.43MHz Vo / Vi	-	-60.0	-50.0	dB
Input Impedance 1	R _{i1}	V _{in1} , V _{in2}	10.0	-	-	kΩ
Input Impedance 2	R _{i2}	C _{in}	-	15.0	-	kΩ
Output Impedance	R _O		-	20.0	-	ΩV
Chalact-LEVEL 1	V _{M1}		607	643	679	mV
Chalact-LEVEL 2	V _{M2}		607	643	679	mV
Y Gate Level	V _{GY}	From Clamp Level	0	35.7	71.4	mV
C Gate Level	V _{GC}	From Bias Level	-10.0	0	10.0	mV
Threshold Voltage 1	V _{th1}	SW1 (ON LEVEL) (OFF LEVEL)	2.5 -	- -	- 0.8	V V
Threshold Voltage 2	V _{th2}	SW2 (ON LEVEL) (OFF LEVEL)	2.5 -	- -	- 0.8	V V
Threshold Voltage 3	V _{th3}	SW3 (ON LEVEL) (OFF LEVEL)	3.0 -	- -	- 1.0	V V
Threshold Voltage 4	V _{th4}	SW4 (ON LEVEL) (OFF LEVEL)	3.0 -	- -	- 1.0	V V
Threshold Voltage 5	V _{th5}	SW5 (ON LEVEL) (OFF LEVEL)	2.5 -	- -	- 0.8	V V
Threshold Voltage 6	V _{th6}	SW6 (ON LEVEL) (OFF LEVEL)	2.5 -	- -	- 0.8	V V
Threshold Voltage 7	V _{th7}	SW7 (ON LEVEL) (OFF LEVEL)	2.5 -	- -	- 0.8	V V

(note 1) Next two cross-talk (One side 0Ω termination)

$$\textcircled{O}V_{in1} \rightarrow V_{in2} \quad \textcircled{O}V_{in2} \rightarrow V_{in1}$$

(note 2) Next two cross-talk (One side 0Ω termination)

$$\textcircled{O}C_{in} \rightarrow V_{in1} \quad \textcircled{O}C_{in} \rightarrow V_{in2}$$

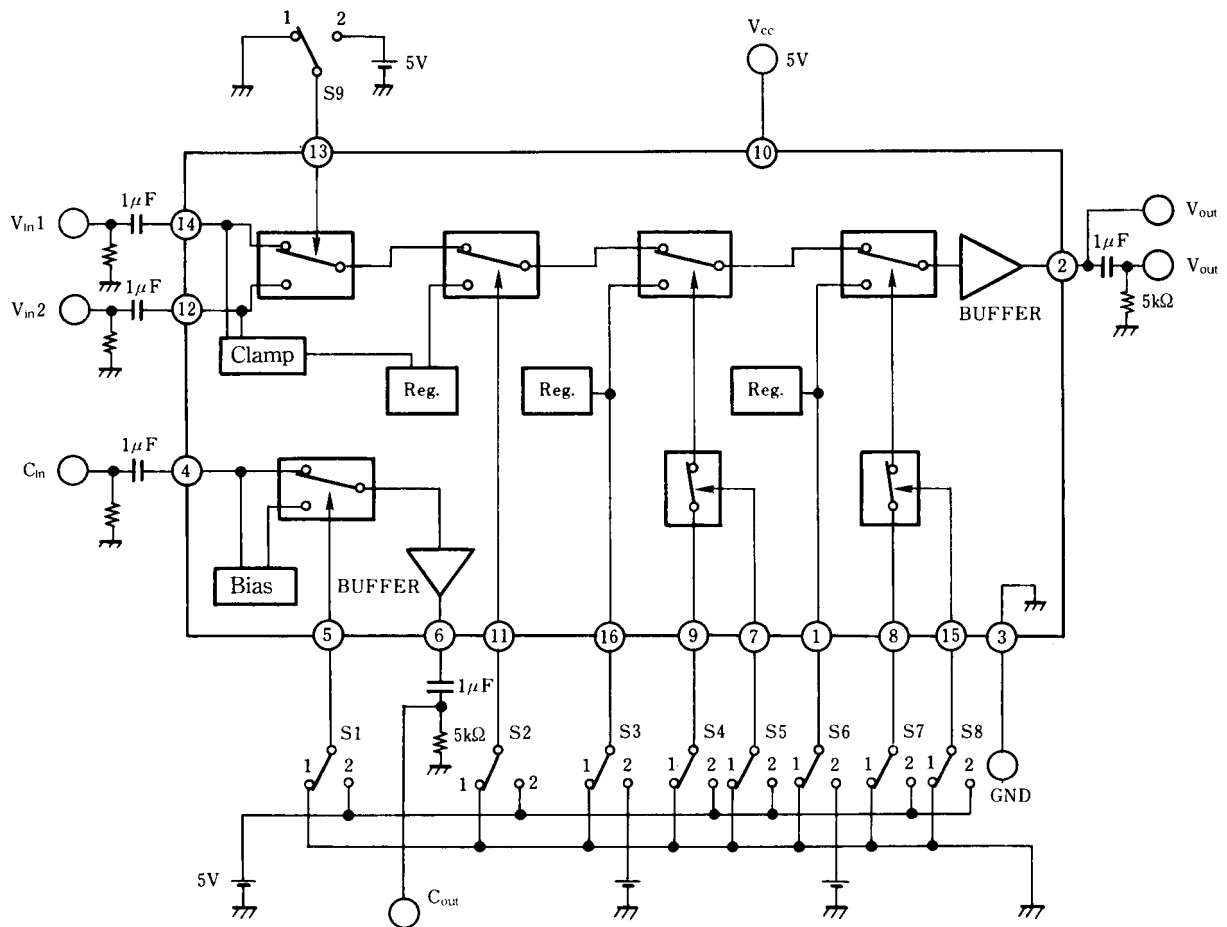
(note 2) Next two cross-talk (One side 0Ω termination)

$$\textcircled{O}V_{in1} \rightarrow C_{in} \quad V_{in2} \rightarrow C_{in}$$

(note 4) White Level

(note 5) Black Level

■ TEST CIRCUIT



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■ TERMINAL FUNCTION

PIN NO.	PIN NAME	FUNCTION	EQUIVALENT CIRCUIT
1	Charact-Level 2	Input terminal of the DC Voltage or the signal in the super imposing condition. In opening condition, presetted in voltage level of 90IRE (White Level) at 1V _{P-P} video signal.	
2	V _{OUT}	Output terminal of Y signal	
3	GND	GND	
4	C _{IN}	Input terminal (Bias Input) of gate switch for C signal.	
5	Chroma-SW	Control Terminal of C-SW. L _O Signal Output H _i Bias Voltage Output	

■ TERMINAL FUNCTION

PIN NO.	PIN NAME	FUNCTION	EQUIVALENT CIRCUIT				
6	C _{OUT}	Output terminal of C-SW.					
7	SW3	ON / OFF control terminal of character signal inputted from 9 pin <table style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding-right: 5px; text-align: center;">L_o</td> <td style="padding-left: 5px;">Character Signal Through</td> </tr> <tr> <td style="border-right: 1px solid black; padding-right: 5px; text-align: center;">H_i</td> <td style="padding-left: 5px;">Character Signal OFF</td> </tr> </table>	L _o	Character Signal Through	H _i	Character Signal OFF	
L _o	Character Signal Through						
H _i	Character Signal OFF						
8	Charact-IN 2	Terminal to input character signal for super impose.					
9	Charact-IN 1	Terminal to input character signal for super impose.					
10	V _{CC}	V _{CC} = 5V					

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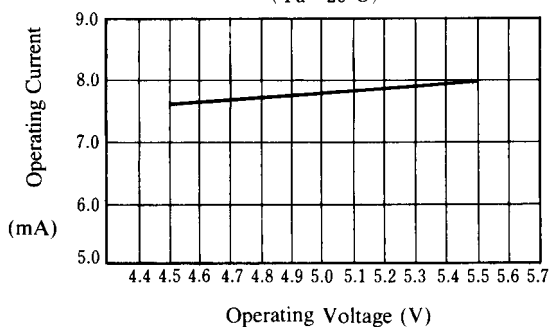
■ TERMINAL FUNCTION

PIN NO.	PIN NAME	FUNCTION	EQUIVALENT CIRCUIT						
11	SW2	Terminal to input character signal for super impose. Voltage for impose is presetted internally, at the voltage level 5IRE (Black Level) with 1V _{P-P} video signal.							
12	V _{in2}	Input terminal of Y signal (1V _{P-P}). Clamp circuit is internalized and clamp voltage is about 2.15V. (Oscillation might occur when higher impedance source. So, please control source impedance under 3.5Ω.)							
13	SW1	Control terminal for input signal switch of Y signal. <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>Output</td> </tr> <tr> <td>L_O</td> <td>V_{in1}</td> </tr> <tr> <td>H_I</td> <td>V_{in2}</td> </tr> </table>		Output	L _O	V _{in1}	H _I	V _{in2}	
	Output								
L _O	V _{in1}								
H _I	V _{in2}								
14	V _{in1}	Input terminal of Y signal (1V _{P-P}). Clamp circuit is internalized and clamp voltage is about 2.15V. (Oscillation might occur when higher impedance source. So, please control source impedance under 3.5kΩ.)							
15	SW4	ON / OFF control terminal of character signal inputted from 8 pin <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>L_O</td> <td>Character Through</td> </tr> <tr> <td>H_I</td> <td>Character Signal OFF</td> </tr> </table>	L _O	Character Through	H _I	Character Signal OFF			
L _O	Character Through								
H _I	Character Signal OFF								
16	Charact-Level 1								

■ TYPICAL CHARACTERISTICS

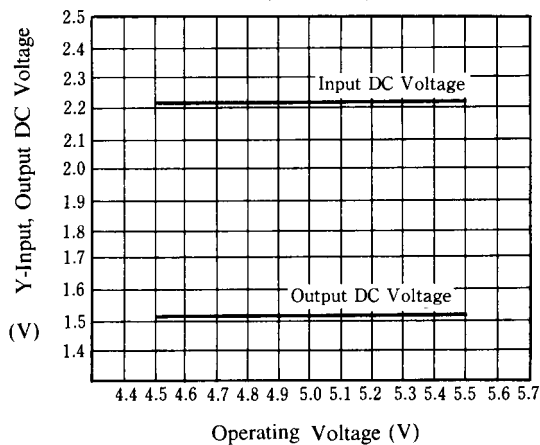
Operating Current vs. Operating Voltage

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

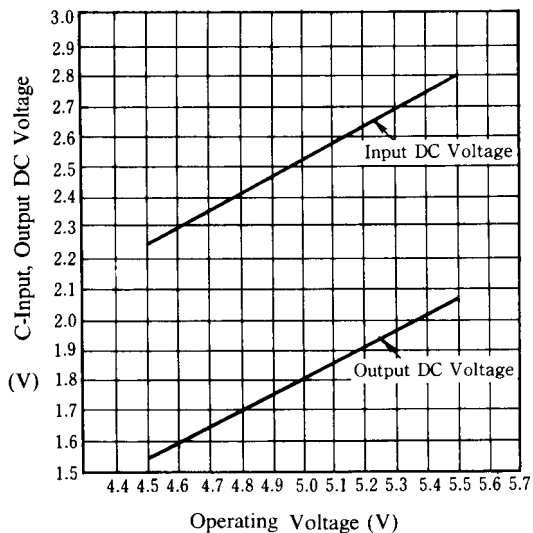


Y-Input, Output DC Voltage vs. Operating Voltage

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

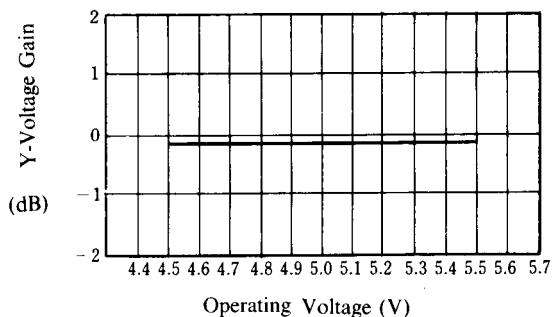


C-Input, Output DC Voltage vs. Operating Voltage



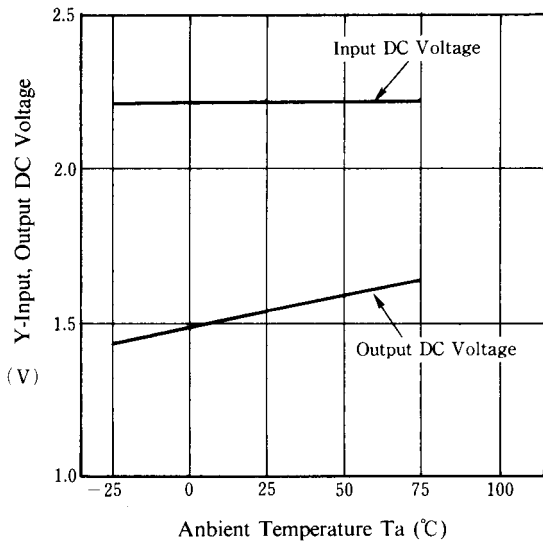
Y-Voltage Gain vs. Operating Voltage

($T_a = 25^\circ\text{C}$, $R_L = 5\text{k}\Omega$, $V_{in} = 1V_{p-p}$, 1MHz)

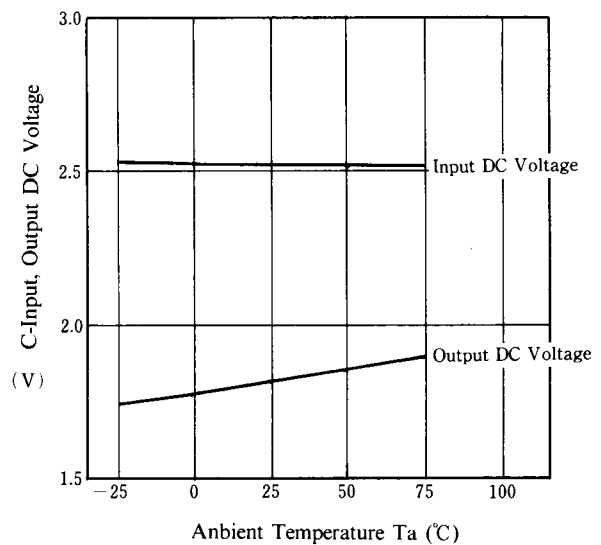


■ TYPICAL CHARACTERISTICS

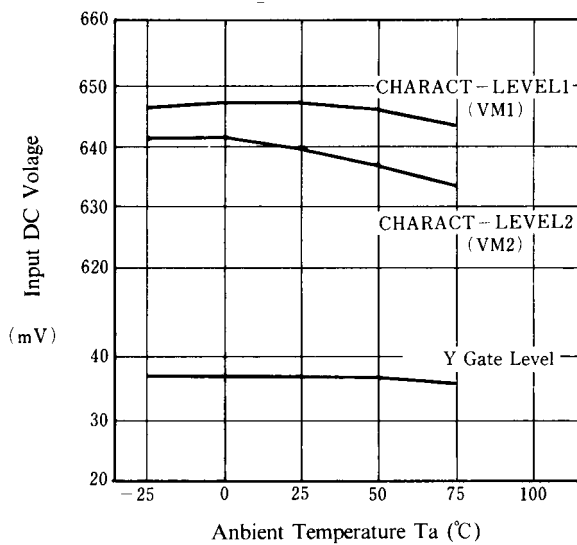
Y-Input, Output DC Voltage vs. Ambient Temperature



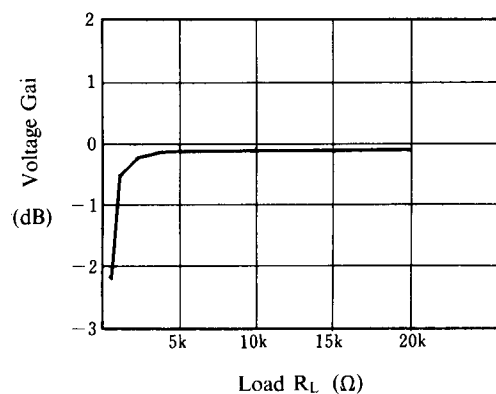
C-Input, Output DC Voltage vs. Ambient Temperature



Input DC Voltage vs. Ambient Temperature

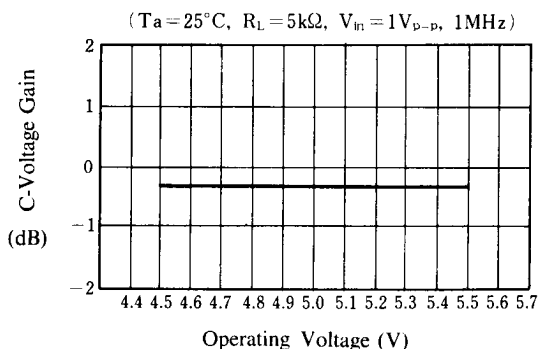


Voltage Gain vs. Load

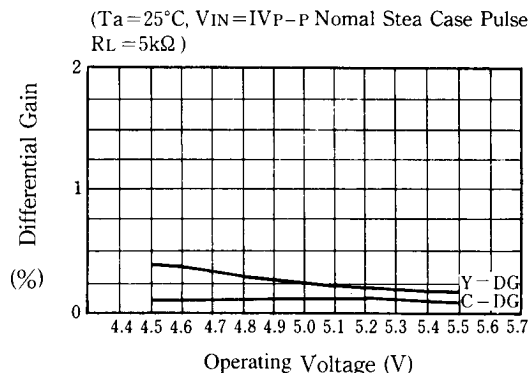


■ TYPICAL CHARACTERISTICS

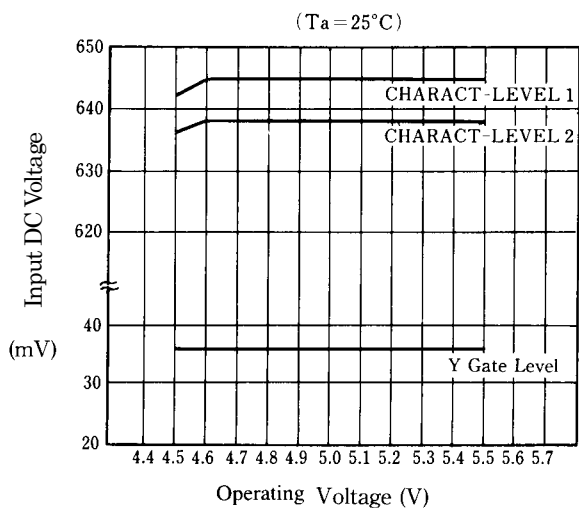
C-Voltage Gain vs. Operating Voltage



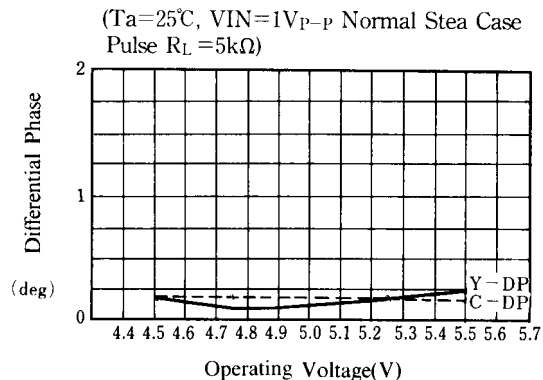
Differential Gain vs. Operating Voltage



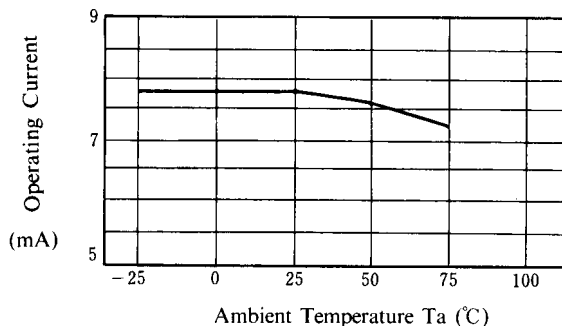
Input DC Voltage vs. Operating Voltage



Differential Phase vs. Operating Voltage



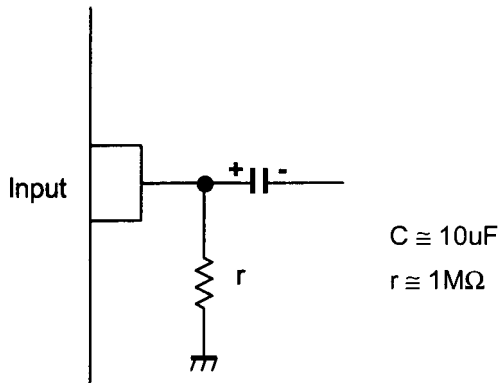
Operating Current vs. Ambient Temperature



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■ APPLICATION

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



[CAUTION]
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