

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

# TA8748AN

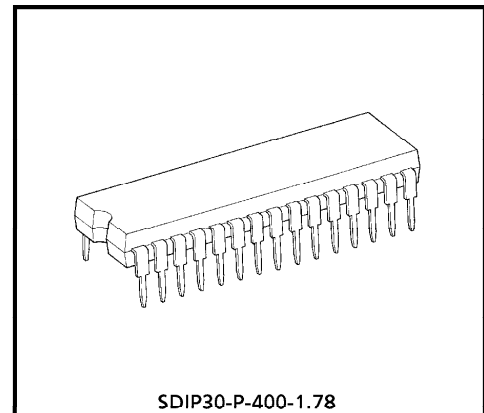
## DOUBLE CCD COMB IC FOR TV, VTR

The TA8748AN is for double comb filter Y/C separation and vertical edge enhancement using the logic of majority decision.

Due to this logic, the Y/C Separation by this IC have no dot appearance or color protruding.

### FEATURES

- 3 Line Comb Filter Operation
- Center Value Detecting Circuit
- Vertical Edge Sharpness Correction (Vertical Secondary Differential)
- Vertical Edge Sharpness Correction Level Control
- Edge Sharpness Correction Signal Coring and Peak Clip



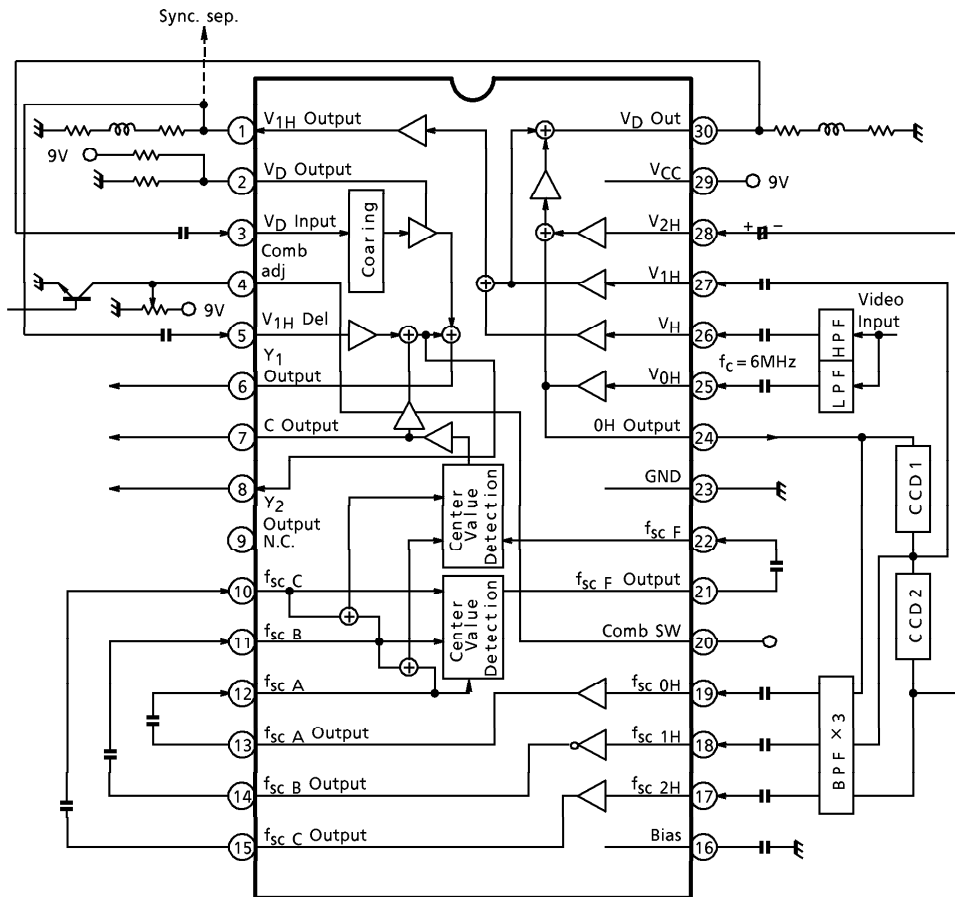
SDIP30-P-400-1.78

Weight : 1.99g (Typ.)

961001EBA2

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BLOCK DIAGRAM



MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Supply Voltage	V <sub>CC</sub>	12	V
Power Dissipation	P <sub>D</sub> max	1560 (Note 1)	mW
Input Terminal Signal Voltage	e <sub>in</sub>	5	V <sub>p-p</sub>
Operating Temperature	T <sub>opr</sub>	- 20~65	°C
Storage Temperature	T <sub>stg</sub>	- 55~150	°C

(Note 1) When using the device at above Ta = 25°C, decrease the power dissipation by 12.5mW for each increase of 1°C.

(Note 2) These devices are easy to be damaged by static voltage or electric fields. Please handle with care.

**ELECTRICAL CHARACTERISTICS** (Unless otherwise specified,  $V_{CC} = 9V$ ,  $T_a = 25^\circ C$ )

DC voltage characteristics

PIN No.	PIN NAME	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
1	V <sub>1H</sub> Output	V <sub>1</sub>	—	4.2	4.5	4.8	V
2	V <sub>D</sub> Output	V <sub>2</sub>	cf. OPEN	4.2	4.5	4.8	V
3	V <sub>D</sub> Input	V <sub>3</sub>	—	2.7	3.0	3.3	V
4	Comb adj	V <sub>4</sub>	cf. OPEN	4.2	4.5	4.8	V
5	V <sub>1H</sub> Del	V <sub>5</sub>	—	2.7	3.0	3.3	V
6	Y <sub>1</sub> Output	V <sub>6</sub>	—	2.3	3.0	3.5	V
7	C Output	V <sub>7</sub>	—	3.5	3.8	4.1	V
8	Y <sub>2</sub> Output	V <sub>8</sub>	—	2.3	3.0	3.5	V
9	N.C.	V <sub>9</sub>	—	—	—	—	V
10	f <sub>sc</sub> C	V <sub>10</sub>	—	4.2	4.5	4.8	V
11	f <sub>sc</sub> B	V <sub>11</sub>	—	4.2	4.5	4.8	V
12	f <sub>sc</sub> A	V <sub>12</sub>	—	4.2	4.5	4.8	V
13	f <sub>sc</sub> A Output	V <sub>13</sub>	—	3.5	3.8	4.1	V
14	f <sub>sc</sub> B Output	V <sub>14</sub>	—	3.5	3.8	4.1	V
15	f <sub>sc</sub> C Output	V <sub>15</sub>	—	3.5	3.8	4.1	V
16	Bias	V <sub>16</sub>	—	5.7	6.1	6.3	V
17	f <sub>sc</sub> 2H	V <sub>17</sub>	—	5.0	5.4	5.6	V
18	f <sub>sc</sub> 1H	V <sub>18</sub>	—	5.0	5.4	5.6	V
19	f <sub>sc</sub> 0H	V <sub>19</sub>	—	5.0	5.4	5.6	V
20	Comb SW	V <sub>20</sub>	cf. OPEN	0	0.03	0.5	V
21	f <sub>sc</sub> F Output	V <sub>21</sub>	—	2.8	3.1	3.4	V
22	f <sub>sc</sub> F	V <sub>22</sub>	—	4.2	4.5	4.8	V
23	GND	—	—	—	0	—	V
24	0H Output	V <sub>24</sub>	—	4.2	4.5	4.8	V
25	V <sub>0H</sub>	V <sub>25</sub>	—	5.0	5.3	5.5	V
26	V <sub>H</sub>	V <sub>26</sub>	—	5.0	5.3	5.5	V
27	V <sub>1H</sub>	V <sub>27</sub>	—	5.0	5.3	5.5	V
28	V <sub>2H</sub>	V <sub>28</sub>	—	5.0	5.3	5.5	V
29	V <sub>CC</sub>	—	—	—	9.0	—	V
30	V <sub>D</sub> Output	V <sub>30</sub>	—	4.2	4.5	4.8	V
29	V <sub>CC</sub>	I <sub>29</sub>	—	43	54	72	mA

AC characteristics

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
19dB Amp Gain	(1) 0H→A	$G_{ca}$	—	(Note 1)	17.5	19	20	dB
	(2) 1H→B	$G_{cb}$			17.5	19	20	
	(3) 2H→C	$G_{cc}$			17.5	19	20	
19dB Amp Frequency Characteristic	(1) 0H→A	$f_a$	—	(Note 2)	10	—	—	MHz
	(2) 1H→B	$f_b$			10	—	—	
	(3) 2H→C	$f_c$			10	—	—	
19dB Amp Input Dynamic Range	(1) 0H→A	$V_{ia}$	—	(Note 3)	500	600	—	mV <sub>p-p</sub>
	(2) 1H→B	$V_{ib}$			500	600	—	
	(3) 2H→C	$V_{ic}$			500	600	—	
Center Value Circuit Gain		$G_{cout}$	—	(Note 4)	-8.0	-6.5	-5.0	dB
Center Value Circuit Frequency Characteristics		$f_{cout}$	—	(Note 5)	10	—	—	MHz
Offset Leak Level	(1) out $f_{sc}$ F	$V_{if}$	—	(Note 6)	4.5	—	—	V <sub>p-p</sub>
	(2) C <sub>out</sub>	$V_{ioc}$			4.5	—	—	
Center Value Circuit Input Dynamic Range	$f_{sc}$ A	$V_{ofa}$	—	(Note 7)	—	—	70	mV <sub>p-p</sub>
	$f_{sc}$ B	$V_{ofb}$			—	—	70	
	$f_{sc}$ C	$V_{ofc}$			—	—	70	
Center Value Circuit out $f_{sc}$ F Leak Level	$f_{sc}$ A	$V_{oca}$	—	(Note 8)	—	—	50	mV <sub>p-p</sub>
	$f_{sc}$ C	$V_{occ}$			—	—	50	
	$f_{sc}$ F	$V_{oci}$			—	—	35	
Center Value Circuit Cout Leak Level	Crosstalk	$V_{oyc}$	—	(Note 9)	—	—	50	mV <sub>p-p</sub>
Chroma→Video Crosstalk	1) out 0H	$C_{0hc}$	—	(Note 10)	-45	—	—	dB
	2) V <sub>1</sub> out	$C_{1hc}$			-30	—	—	
	3) VD out	$C_{vdc}$			-50	—	—	
Comb SW Switching Voltage		$V_{SW}$	—	(Note 11)	2.7	3.6	4.0	V
Cadj Amp Max. Gain	Positive	$G_{c1f}$	—	(Note 12)	-2.5	-0.5	0.5	dB
	Negative	$G_{c1r}$			-2.5	-0.5	0.5	
Cadj Amp Center Gain	Positive	$G_{c2f}$	—	(Note 13)	-7.5	-6.5	-5.5	dB
	Negative	$G_{c2r}$			-7.5	-6.5	-5.5	
Cadj Amp Min. Gain	Positive	$G_{c3f}$	—	(Note 14)	—	—	50	dB
	Negative	$G_{c3r}$			—	—	50	
Cadj Amp Frequency Characteristics	Positive	$f_{c1f}$	—	(Note 15)	10	—	—	MHz
	Negative	$f_{c1r}$			10	—	—	
Cadj Amp Input Dynamic Range	Positive	$V_{c1f}$	—	(Note 16)	4.5	—	—	dB
	Negative	$V_{c1r}$			4.5	—	—	

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
V <sub>0H</sub> Input Gain	out 0H	G <sub>v00</sub>	—	(Note 17)	5.0	6.0	7.0	dB
	V <sub>D</sub> out	G <sub>vd0</sub>			-1.0	0.0	1.0	
V <sub>H</sub> Input Gain	V <sub>1H</sub> out	G <sub>v1h</sub>	—	(Note 18)	9.0	10.0	11.5	dB
V <sub>1H</sub> Input Gain	V <sub>1H</sub> out	G <sub>v11</sub>	—	(Note 19)	9.0	10.0	11.5	dB
	V <sub>D</sub> out	G <sub>vd1</sub>			5.0	6.0	7.0	
V <sub>2H</sub> Input Gain	V <sub>D</sub> out	G <sub>vd2</sub>	—	(Note 20)	-7.5	-6.0	-5.5	dB
V <sub>0H</sub> Input Frequency Characteristics	out 0H	f <sub>v00</sub>	—	(Note 21)	10	—	—	MHz
	V <sub>D</sub> out	f <sub>vd0</sub>			10	—	—	
V <sub>H</sub> Input Frequency Characteristics	V <sub>1H</sub> out	f <sub>v1h</sub>	—	(Note 22)	10	—	—	MHz
V <sub>1H</sub> Input Frequency Characteristics	V <sub>1H</sub> out	f <sub>v11</sub>	—	(Note 23)	10	—	—	MHz
	V <sub>D</sub> out	f <sub>vd1</sub>			10	—	—	
V <sub>2H</sub> Input Frequency	V <sub>D</sub> out	f <sub>vd2</sub>	—	(Note 24)	10	—	—	MHz
V <sub>0H</sub> Input Dynamic Range	out 0H	V <sub>i00</sub>	—	(Note 25)	1.5	—	—	V <sub>p-p</sub>
	V <sub>D</sub> out	V <sub>id0</sub>			1.5	—	—	
V <sub>H</sub> Input Dynamic Range Characteristics	V <sub>1H</sub> out	V <sub>i1h</sub>	—	(Note 26)	0.9	—	—	V <sub>p-p</sub>
V <sub>1H</sub> Input Dynamic Range	V <sub>1H</sub> out	V <sub>i11</sub>	—	(Note 27)	1.0	—	—	V <sub>p-p</sub>
	V <sub>D</sub> out	V <sub>id1</sub>			1.0	—	—	
V <sub>2H</sub> Input Dynamic Range	V <sub>D</sub> out	V <sub>id2</sub>	—	(Note 28)	2.5	—	—	V <sub>p-p</sub>
Coring Peak Clip Level		V <sub>pcl</sub>	—	(Note 29)	50	90	150	mV
Coring Cutoff Level		V <sub>cut</sub>	—	(Note 30)	10	12.5	15	mV
Coring Cutoff Set		V <sub>off</sub>	—	(Note 31)	-10	0	10	mV
V <sub>D</sub> Max. Gain	Coring	G <sub>ylc</sub>	—	(Note 32)	0.5	1.5	5.0	dB
	V <sub>D</sub>	G <sub>ylD</sub>			9.5	11.5	12.5	
	Peak Clip	G <sub>ylp</sub>			6.5	8.5	9.5	
V <sub>D</sub> Center Gain		G	—	(Note 33)	4.0	6.0	8.0	dB
V <sub>D</sub> Min. Gain		G <sub>v3d</sub>	—	(Note 34)	—	—	60	dB
V <sub>D</sub> Amp Frequency Characteristics		f <sub>yd</sub>	—	(Note 35)	10	—	—	MHz
V <sub>D</sub> Amp Dynamic Range		V <sub>iyd</sub>	—	(Note 36)	1.2	—	—	V <sub>p-p</sub>
V <sub>1H</sub> Amp Gain		G <sub>yd1</sub>	—	(Note 37)	7.5	8.5	9.5	dB
V <sub>1H</sub> Amp Frequency Characteristics		f <sub>yd1</sub>	—	(Note 38)	10	—	—	MHz
V <sub>1H</sub> Amp Dynamic Range		V <sub>id1</sub>	—	(Note 39)	1.2	—	—	V <sub>p-p</sub>
Video Cross talk	(1) V <sub>1H</sub> →out 0H	C <sub>oh1</sub>	—	(Note 40)	-45	—	—	dB
	(2) V <sub>2H</sub> →out 0H	C <sub>oh2</sub>			55	—	—	
Video→ Chroma Crosstalk	(1) V <sub>0H</sub> , V <sub>H</sub> →C <sub>out</sub>	C <sub>c0h</sub>	—	(Note 41)	55	—	—	dB
	(2) V <sub>1H</sub> →C <sub>out</sub>	C <sub>c1h</sub>			55	—	—	
	(3) V <sub>2H</sub> →C <sub>out</sub>	C <sub>c2h</sub>			55	—	—	
	(4) V <sub>Din</sub> →C <sub>out</sub>	C <sub>cvD</sub>			-50	—	—	
	(5) V <sub>1Hdil</sub> →C <sub>out</sub>	C <sub>cd1</sub>			-40	—	—	

TEST CONDITION

NOTE No.	CHARACTERISTICS	TEST METHOD (V <sub>CC</sub> =9.0V, T <sub>a</sub> =25±3°C)								TEST METHOD	
		SW & VR MODE									
		SW10	SW11	SW12	SW17	SW18	SW19	SW22			
1	19dB Amp Gain	① 0H→A	a	a	a	b	b	b	b	—	(1) V <sub>3</sub> Input ; f <sub>0</sub> = 3.58MHz, V = 140mV <sub>p-p</sub> CW (2) Measure the Output Level of ①TP13, ②14, ③15. (3) Measure the Gain against input.
		② 1H→B	a	a	a	b	b	b	b	—	
		③ 2H→C	a	a	a	b	b	b	b	—	
2	19dB Amp Frequency Characteristic	① 0H→A	a	a	a	b	b	b	b	—	(1) V <sub>3</sub> Input ; f : variable, V = 140mV <sub>p-p</sub> CW (2) Measure the Output Level of ①TP13, ②14, ③15. (3) Get frequency to make output be - 3dB lower than that at f = 1MHz.
		② 1H→B	a	a	a	b	b	b	b	—	
		③ 2H→C	a	a	a	b	b	b	b	—	
3	19dB Amp Input Dynamic Range	① 0H→A	a	a	a	b	b	b	b	—	(1) V <sub>3</sub> Input ; f <sub>0</sub> = 3.58MHz, V : variable CW (2) Measure the Output waveform of ①TP13, ②14, ③15. (3) Get input level to make output wave form be distorted.
		② 1H→B	a	a	a	b	b	b	b	—	
		③ 2H→C	a	a	a	b	b	b	b	—	
4	Center Value Circuit Gain	b	b	b	c	c	c	c	a		(1) V <sub>2</sub> Input ; f <sub>0</sub> = 3.58MHz, V = 1.2V <sub>p-p</sub> CW (2) Measure the Output Level of TP7. (3) Get frequency to make output be - 3dB lower than that at f = 1MHz.
5	Center Value Circuit Frequency Characteristic	b	b	b	c	c	c	c	a		(1) V <sub>2</sub> Input ; f : variable, V = 1.2V <sub>p-p</sub> CW (2) Measure the Output Level of TP7. (3) Get frequency to make output be - 3dB lower than that at f = 1MHz.

NOTE No.	CHARACTERISTICS	TEST CONDITION (V <sub>CC</sub> =9.0V, T <sub>a</sub> =25±3°C)											TEST METHOD	
		SW & VR MODE												
		SW10	SW11	SW12	SW17	SW18	SW19	SW22	TP2	TP4				
6	Center Value Circuit Input Dynamic Range	① out f <sub>sc</sub> F	b	b	b	c	c	c	c	c	a	—	—	(1) V <sub>2</sub> Input ; f <sub>0</sub> = 3.58MHz, V : Variable CW (2) Measure the Output Waveform of ① TP21, ② TP7. (3) Get input level to make output wave form be distorted.
		② Cout	b	b	b	c	c	c	c	c	a	—	—	
	Center Value Circuit Input out f <sub>sc</sub> F Leak Level	c	c	b	c	c	c	c	c	c	a	—	—	
7	Center Value Circuit Input out f <sub>sc</sub> F Leak Level	fsc A	c	c	b	c	c	c	c	c	a	—	—	(1) V <sub>2</sub> Input ; f <sub>0</sub> = 3.58MHz, V = 1.2V <sub>p-p</sub> CW (2) Measure the Output Level of TP21.
		fsc B	c	b	c	c	c	c	c	c	a	—	—	
		fsc C	b	c	c	c	c	c	c	c	a	—	—	
8	Center Value Circuit Input Cout Leak Level	fsc A	c	c	b	c	c	c	c	c	a	—	—	(1) V <sub>2</sub> Input ; f <sub>0</sub> = 3.58MHz, V = 1.2V <sub>p-p</sub> CW (2) Measure the Output Level of TP7.
		fsc B	b	c	c	c	c	c	c	c	a	—	—	
		fsc C	c	c	c	c	c	c	c	c	a	—	—	
9	Center Value Circuit Crosstalk Leak Level		a	a	a	b	b	b	b	b	a	4.5V	4.5V	(1) V <sub>3</sub> Input ; f <sub>0</sub> = 3.58MHz, V = 140mV <sub>p-p</sub> CW (2) Measure Output Level of TP6.
		① out 0H	a	a	a	b	b	b	b	b	a	4.5V	4.5V	
		② V <sub>1H</sub> out	a	a	a	b	b	b	b	b	a	4.5V	4.5V	
10	Chroma→Video Crosstalk	③ V <sub>D</sub> out	a	a	a	b	b	b	b	b	a	4.5V	4.5V	(1) V <sub>3</sub> Input ; f <sub>0</sub> = 3.58MHz, V = 140mV <sub>p-p</sub> CW (2) Measure Output Level of ① TP24, ② TP1, TP30. (3) Get ratio against ① 0.28V <sub>p-p</sub> , ② 0.56V <sub>p-p</sub> , ③ 0.28V <sub>p-p</sub> .
			a	a	a	b	b	b	b	b	a	4.5V	4.5V	

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NOTE No.	CHARACTERISTICS	TEST CONDITION (V <sub>CC</sub> = 9.0V, T <sub>a</sub> = 25 ± 3°C)										TEST METHOD
		SW & VR MODE										
		SW3	SW5	SW10	SW11	SW12	SW22	TP2	TP4	TP20		
11	Comb SW Switching Voltage	c	c	b	b	b	a	4.5V	4.5V	—		(1) V <sub>2</sub> Input ; f <sub>0</sub> = 3.58MHz, V = 1.2V <sub>p-p</sub> CW (2) Measure the Output Waveform of TP6. (3) While increasing the T20 voltage, measure the voltage at which waveform of TP6 turns over.
12	Cadj Amp Max. Gain	Normal	c	b	b	b	a	4.5V	8.5V	9V		(1) V <sub>2</sub> Input ; f <sub>0</sub> = 3.58MHz, V = 1.2V <sub>p-p</sub> CW (2) Measure the Output Level of TP6. (3) Get gain against input.
		Inverted	c	b	b	b	a	4.5V	8.5V	0V		
13	Cadj Amp Center Gain	Normal	c	b	b	b	a	4.5V	4.5V	9V		(1) V <sub>2</sub> Input ; f <sub>0</sub> = 3.58MHz, V = 1.2V <sub>p-p</sub> CW (2) Measure the Output Level of TP6. (3) Get gain against input.
		Inverted	c	b	b	b	a	4.5V	4.5V	0V		
14	Cadj Amp Min. Gain	Normal	c	b	b	b	a	4.5V	0.5V	9V		(1) V <sub>2</sub> Input ; f <sub>0</sub> = 3.58MHz, V = 1.2V <sub>p-p</sub> CW (2) Measure the Output Level of TP6. (3) Get gain against input.
		Inverted	c	b	b	b	a	4.5V	0.5V	0V		
15	Cadj Amp Frequency Characteristic	Normal	c	b	b	b	a	4.5V	9V	9V		(1) V <sub>2</sub> Input ; f : Variable, V = 1.2V <sub>p-p</sub> CW (2) Measure the Output Level of TP6. (3) Get frequency to make output be -3dB lower than that at f = 1MHz.
		Inverted	c	b	b	b	a	4.5V	9V	0V		
16	Cadj Amp Input Dynamic Range	Normal	c	b	b	b	a	4.5V	0.5V	9V		(1) V <sub>2</sub> Input ; f <sub>0</sub> = 3.58MHz, V : Variable (2) Measure the Output Level of TP6. (3) Get input level to make output wave form be distorted.
		Inverted	c	b	b	b	a	4.5V	9V	0V		

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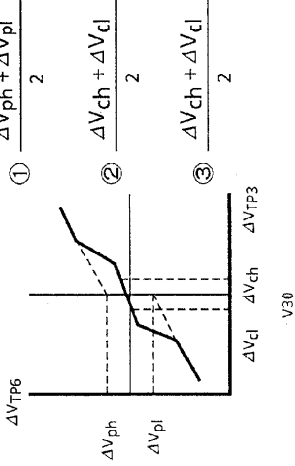


NOTE No.	CHARACTERISTICS	TEST CONDITION (V <sub>CC</sub> = 9.0V, T <sub>a</sub> = 25 ± 3°C)										TEST METHOD
		SW & VR MODE										
		SW25	SW26	SW27	SW28							
17	V <sub>0H</sub> Input Gain	① out 0H	b	c	c	c					(1) V <sub>4</sub> Input ; f <sub>0</sub> = 15kHz, V = 0.5V <sub>pp</sub> CW (2) Measure output Level of ①TP24, ②TP30. (3) Get gain against input.	
		② V <sub>D</sub> out	b	c	c	c						
18	V <sub>H</sub> Input Gain	V <sub>1H</sub> out	c	b	c	c					(1) V <sub>4</sub> Input ; f <sub>0</sub> = 6MHz, V = 0.5V <sub>pp</sub> CW (2) Measure the TP1 Output level. (3) Get gain against input.	
		① V <sub>1H</sub> out	c	c	b	c						
19	V <sub>1H</sub> Input Gain	② V <sub>D</sub> out	c	c	b	c					(1) V <sub>5</sub> Input ; f <sub>0</sub> = 15kHz, V = 0.5V <sub>pp</sub> CW (2) Get output level against ①TP1, ②TP30. (3) Get gain against input.	
		① V <sub>1H</sub> out	c	c	c	b						
20	V <sub>2H</sub> Input Gain	V <sub>D</sub> out	c	c	c	b					(1) V <sub>5</sub> Input ; f <sub>0</sub> = 15kHz, V = 1.0V <sub>pp</sub> CW (2) Measure of the output level of TP30. (3) Get gain against input.	
		① out 0H	b	c	c	c						
21	V <sub>0H</sub> Input Frequency Characteristics	② V <sub>D</sub> out	b	c	c	c					(1) V <sub>4</sub> input ; f : variable, V = 0.5V <sub>0-p</sub> CW (2) Get against level against ①TP24, ②TP30. (3) Get frequency to make output be -3dB lower than that at f = 1MHz.	
		① out 0H	b	c	c	c						
22	V <sub>H</sub> Input Frequency Characteristics	V <sub>1H</sub> out	c	b	c	c					(1) V <sub>4</sub> Input ; f : variable, V = 0.5V <sub>0-p</sub> CW (2) Measure of the output level of TP1. (3) Get frequency to make output be -3dB lower than that at f = 1MHz.	
		② V <sub>D</sub> out	b	c	c	c						
23	V <sub>1H</sub> Input Frequency Characteristics	① V <sub>1H</sub> out	c	c	b	c					(1) V <sub>5</sub> Input ; f : variable, V = 0.5V <sub>0-p</sub> CW (2) Measure output level of ①TP1, ②TP30 (3) Get frequency to make output be -3dB lower than that at f = 1MHz.	
		② V <sub>D</sub> out	c	c	b	c						
24	V <sub>2H</sub> Input Frequency Characteristics	V <sub>D</sub> out	c	c	c	b					(1) V <sub>5</sub> Input ; f : variable, V = 1.0V <sub>0-p</sub> CW (2) Measure output of the TP30. (3) Get frequency to make output be -3dB lower than that at f = 1MHz.	
		① V <sub>1H</sub> out	c	c	c	b						

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NOTE No.	CHARACTERISTICS	TEST CONDITION (V <sub>CC</sub> = 9.0V, T <sub>a</sub> = 25 ± 3°C)							TEST METHOD
		SW & VR MODE							
		SW25	SW26	SW27	SW28				
25	V <sub>0H</sub> Input Dynamic Range	① out 0H	b	c	c	c	c		(1) V <sub>4</sub> Input ; f = 15kHz, V : variable CW (2) Measure output level of ①TP24, ②TP30. (3) Get input level to make output wave form be distorted.
		② VD out	b	c	c	c	c		
26	V <sub>H</sub> Input Dynamic Range	V <sub>1H</sub> out	c	b	c	c	c		(1) V <sub>4</sub> Input ; f = 6kHz, V : Variable CW (2) Measure the output waveform of the TP1. (3) Get input level to make output wave form be distorted.
27	V <sub>1H</sub> Input Dynamic Range	① V <sub>1H</sub> out	c	c	b	c	c		(1) V <sub>5</sub> Input ; f = 15kHz, V : Variable CW (2) Measure output level of ①TP1, ②TP30 (3) Get input level to make output wave form be distorted.
		② VD out	c	c	b	c	b	c	
28	V <sub>2H</sub> Input Dynamic Range	VD out	c	c	c	c	b		(1) V <sub>5</sub> Input ; f = 15kHz, V : variable CW (2) Measure the output level of TP30. (3) Get input level to make output wave form be distorted.

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NOTE No.	CHARACTERISTICS	TEST CONDITION (V <sub>CC</sub> =9.0V, Ta=25±3°C)				TEST METHOD
		SW3	SW5	TP27	TP4	
29	Coring Peak Clip Level	c	c	9V	4.5V	(1) Measure voltage TP3 : V30, TP : V60 with no input. (2) Change TP3 Voltage over V30±0.5V (3) Measure TP6 and Get following. (4) Get  $\textcircled{1} \frac{\Delta V_{ph} + \Delta V_{pl}}{2}$ $\textcircled{2} \frac{\Delta V_{ch} + \Delta V_{cl}}{2}$ $\textcircled{3} \frac{\Delta V_{ch} + \Delta V_{cl}}{2}$
30	Coring Cutoff Level	c	c	9V	4.5V	
31	Coring Offset	c	c	9V	4.5V	
32	V <sub>D</sub> Max. Gain	b	c	8.5V	4.5V	(1) V <sub>1</sub> Input ; f <sub>0</sub> = 15kHz ①V <sub>i</sub> = 5mV <sub>p-p</sub> , ②V <sub>i</sub> = 0.1V <sub>p-p</sub> , 0.14V <sub>p-p</sub> , ③V <sub>i</sub> = 0.4V <sub>p-p</sub> , 0.45V <sub>p-p</sub>
		b	c	8.5V	4.5V	(2) Measure TP6 Output Level of V <sub>6</sub> (V). (3) Get ①V <sub>6</sub> (5mV) / 5mV, ②V <sub>6</sub> (0.14V) - V <sub>6</sub> (0.1V) / 0.14V - 0.1, ③V <sub>6</sub> (0.45V) - V <sub>6</sub> (0.4) / 0.45V - 0.4
		b	c	8.5V	4.5V	(1) V <sub>1</sub> Input ; f <sub>0</sub> = 15kHz, V <sub>i</sub> = 0.1V <sub>p-p</sub> , 0.14V <sub>p-p</sub> (2) Measure the output level V <sub>6</sub> (V <sub>i</sub> ) of TP6. (3) Measure the V <sub>6</sub> (0.14V) - 6V (0.1V) / 0.14V - 0.1V
33	V <sub>D</sub> Center Gain	b	c	4.5V	4.5V	

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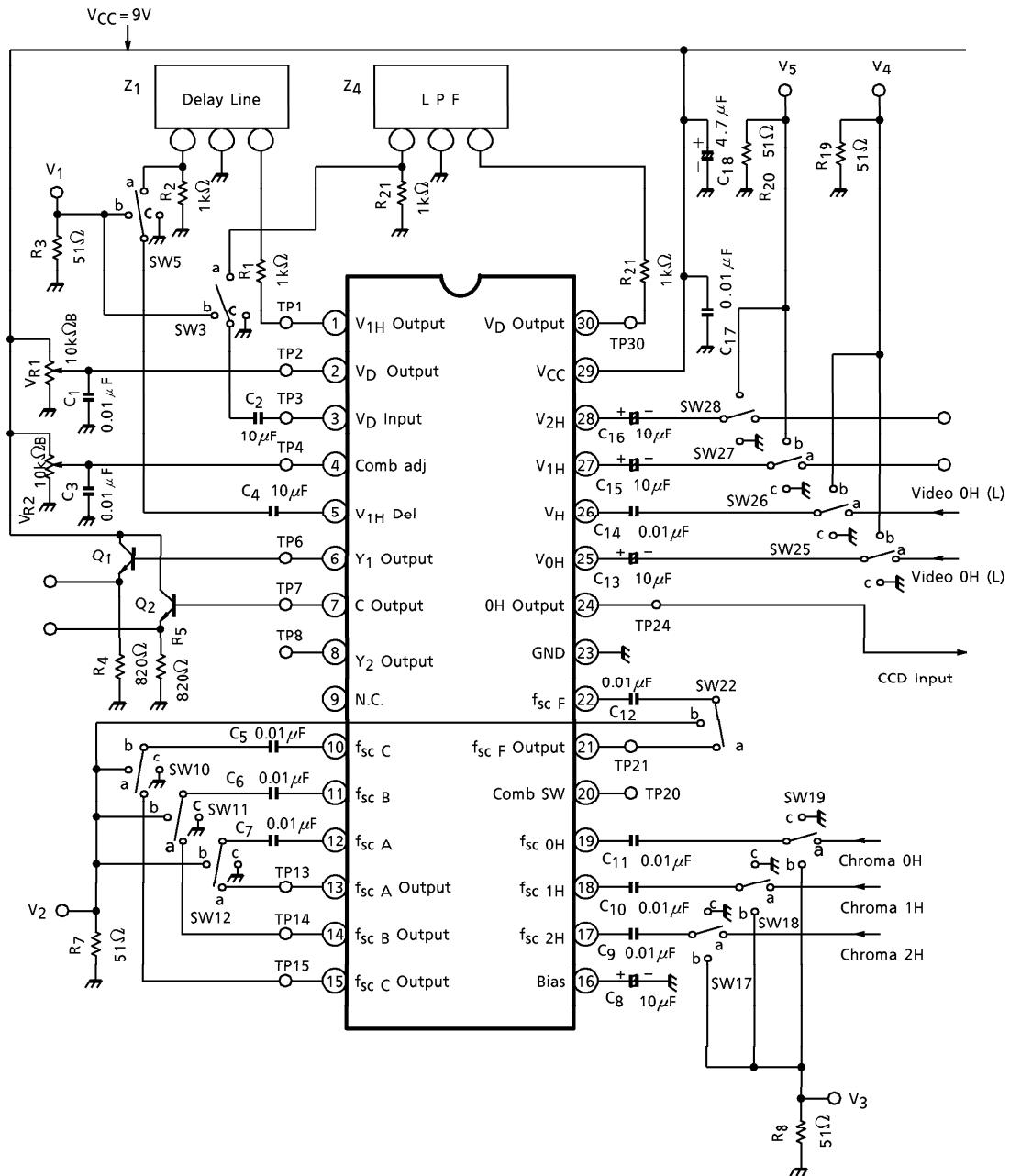
NOTE No.	CHARACTERISTICS	TEST CONDITION (V <sub>CC</sub> = 9.0V, T <sub>a</sub> = 25 ± 3°C)					
		SW & VR MODE			TEST METHOD		
		SW3	SW5	TP27 TP4	SW3	SW5	TP27 TP4
34	V <sub>D</sub> Min. Gain	b	c	0.5V	4.5V		(1) V <sub>1</sub> Input ; f <sub>0</sub> = 15kHz, V <sub>i</sub> = 0.1V <sub>p-p</sub> (2) Measure the output level of the TP6. (3) Get Gain against input.
35	V <sub>D</sub> Amp Frequency Characteristics	b	c	9V	4.5V		(1) V <sub>1</sub> Input ; f : variable, V <sub>i</sub> = 0.14V <sub>p-p</sub> (2) Measure the output level of the TP6. (3) Get frequency to make output be -3dB lower than that at f = 1MHz.
36	V <sub>D</sub> Amp Dynamic Range	b	c	9V	4.5V		(1) V <sub>1</sub> Input ; f <sub>0</sub> = 15kHz, V = 0.1V <sub>p-p</sub> (2) Measure the output waveform of TP6. (3) Get input level to make output wave form be distorted by except coring.
37	V <sub>1H</sub> Amp Gain	c	b	4.5V	4.5V		(1) V <sub>1</sub> Input ; f <sub>0</sub> = 15kHz, V <sub>i</sub> = 1.0V <sub>p-p</sub> (2) Measure the output level of TP6. (3) Get Gain against input.
38	V <sub>1H</sub> Amp Frequency Characteristics	c	b	4.5V	4.5V		(1) V <sub>1</sub> Input ; f : variable, V = 1.0V <sub>p-p</sub> (2) Measure the output level of TP6. (3) Get frequency to make output be -3dB lower than that at f = 1MHz.
39	V <sub>1H</sub> Amp Dynamic Range	c	b	4.5V	4.5V		(1) V <sub>1</sub> Input ; f <sub>0</sub> = 15kHz, V variable (2) Measure the output waveform of TP6. (3) Get input level to make output wave form be distorted.

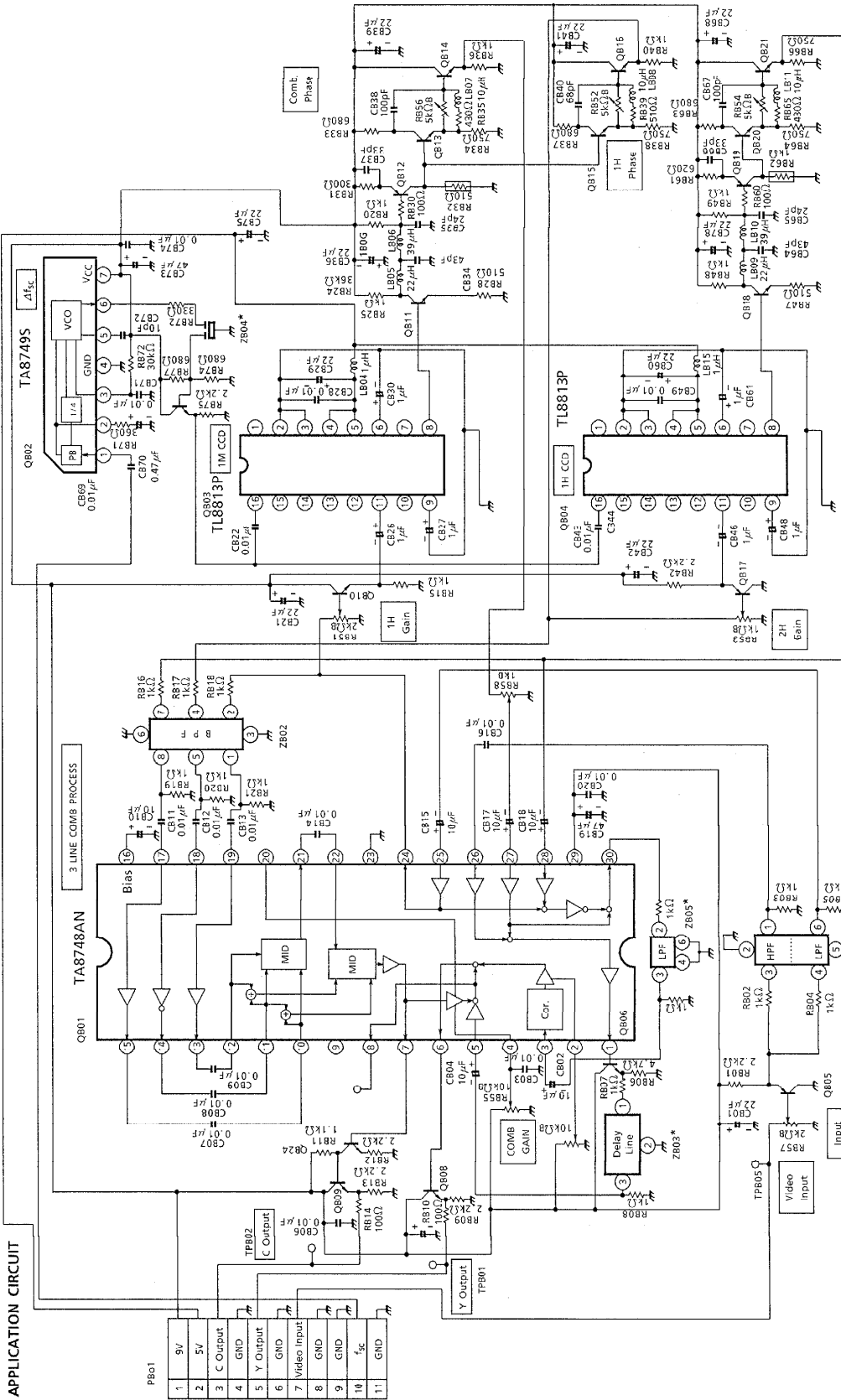
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NOTE No.	CHARACTERISTICS	TEST CONDITION (V <sub>CC</sub> = 9.0V, Ta = 25 ± 3°C)									
		SW & VR MODE									
		SW3	SW5	SW25	SW26	SW27	SW28	TP2	TP4	TEST METHOD	
40	Crosstalk between Video	a	a	c	c	b	c	4.5V	4.5V	(1) V <sub>4</sub> Input ; f <sub>0</sub> = 3.58MHz, ① V = 0.5V <sub>p-p</sub> , ② V = 1.0V <sub>p-p</sub> (2) Measure of the output level of TP24. (3) Get ratio against 1.0V <sub>p-p</sub> .	
		a	a	c	c	c	c	4.5V	4.5V		
41	Video → Chroma Crosstalk	a	a	b	b	c	c	4.5V	4.5V	(1) V <sub>4</sub> Input ; f <sub>0</sub> = 3.58MHz, V = 0.5V <sub>p-p</sub> , with no chroma input. (2) Measure the output level of TP7. (3) Measure the attenuation level. (1) V <sub>5</sub> Input ; f <sub>0</sub> = 3.58MHz, ② V = 0.5V <sub>p-p</sub> , ③ V = 1.0V <sub>p-p</sub> with no chroma input. (2) Measure the output level of TP7. (3) Measure the attenuation level. (1) V <sub>1</sub> Input ; f <sub>0</sub> = 3.58MHz, ② V = 0.5V <sub>p-p</sub> , ③ V = 1.0V <sub>p-p</sub> with no chroma input. (2) Measure the output level of TP7. (3) Measure the attenuation level.	
		a	a	c	c	b	c	4.5V	4.5V		
		a	a	c	c	c	c	4.5V	4.5V		
		b	c	c	c	c	c	4.5V	4.5V		
		c	b	c	c	c	c	4.5V	4.5V		

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TEST CIRCUIT





(Note) ZB01 : H.P.F. (fc = 6MHz) + L.P.F. (fc = 6MHz)  
 ZB02 : B.P.F. (fo = 3.58MHz, DL = 140ns)  
 ZB03 : DL (DL = 140ns)  
 ZB04 : B.P.F. (fo = 14.3MHz)  
 ZB05 : L.P.F. (fc = 1.0MHz, DL = 140ns)

APPLICATION CIRCUIT

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**DOUBLE COMB FILTER UNIT ADJUSTMENT**

## 1. Initial Condition

Input Signal : Linearity Signal  $2V_{p-p}$   
 $f_{sc}$  Signal :  $1V_{p-p}$   
 $V_R$  : RB51~58 : Center

## 2. Input Signal Amplitude

Adjust RB57 to make signal Amplitude at QB05 emitter by  $1V_{p-p}$ .

## 3. Amplitude, Phase of 1H Delay Signal

Sum up TA8748AN pin 12 Signal and reversed pin 11 Signal with Oscilloscope.  
Adjust RB51 and RB52 mutually to make this summed signal be minimum level.

## 4. Amplitude, Phase of 2H Delay Signal

Sum up TA8748AN pin 10 Signal and reversed pin 11 Signal with Oscilloscope.  
Adjust RB53 and RB54 mutually to make this summed signal be minimum level.

## 5. Vertical edge Enhance Signal

Adjust RB58 to make pin 30 signal be minimum level.

## 6. Comb Filter Gain, Phase

Monitor  $Y_{out}$ .  
Adjust RB55 and RB56 mutually to make Chroma element be minimum level.

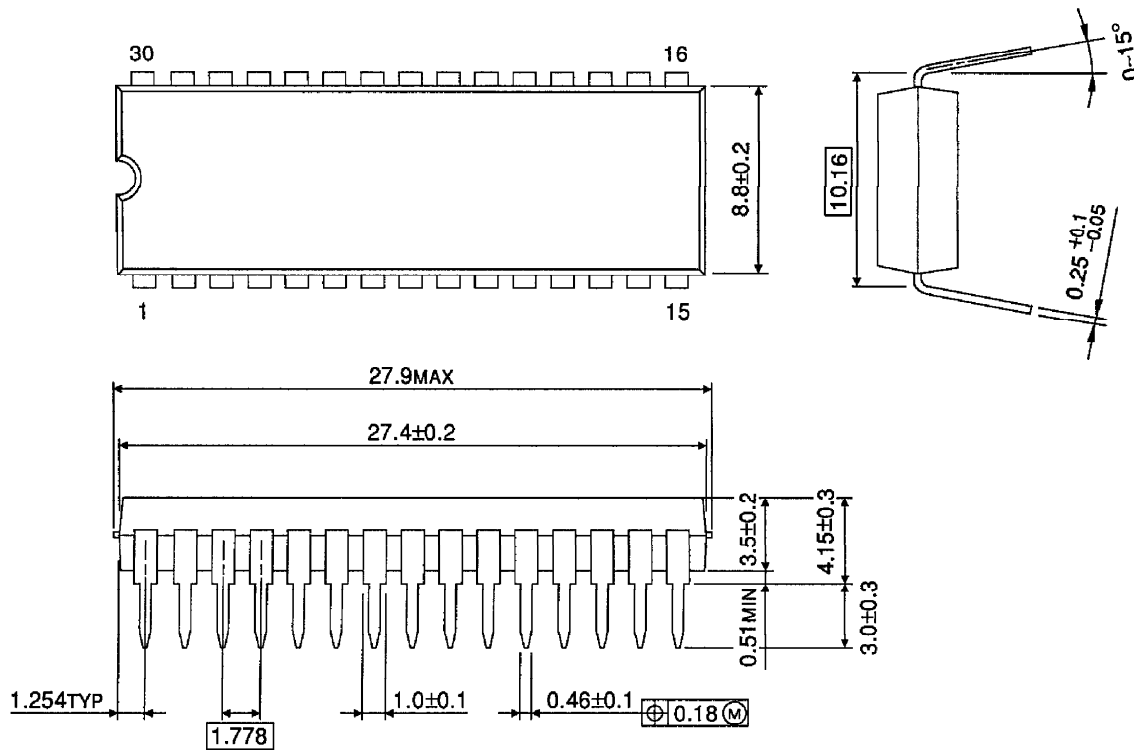
7.  $Y_{out}$  Amplitude

Adjust RB57 to make the amplitude of  $Y_{out}$  Video (without SYNC) to be  $1.43V_{p-p}$ .



OUTLINE DRAWING  
SDIP30-P-400-1.78

Unit : mm



Weight : 1.99g (Typ.)