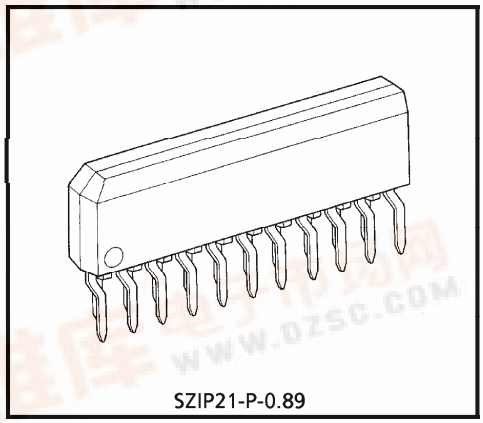
TENTATIVE TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA1275Z

SECAM DEMODULATOR PROCESSOR

TA1275Z is the SECAM demodulation IC, which accomplishes a multicolor system with TB1231 series.

This IC requires very few external parts.



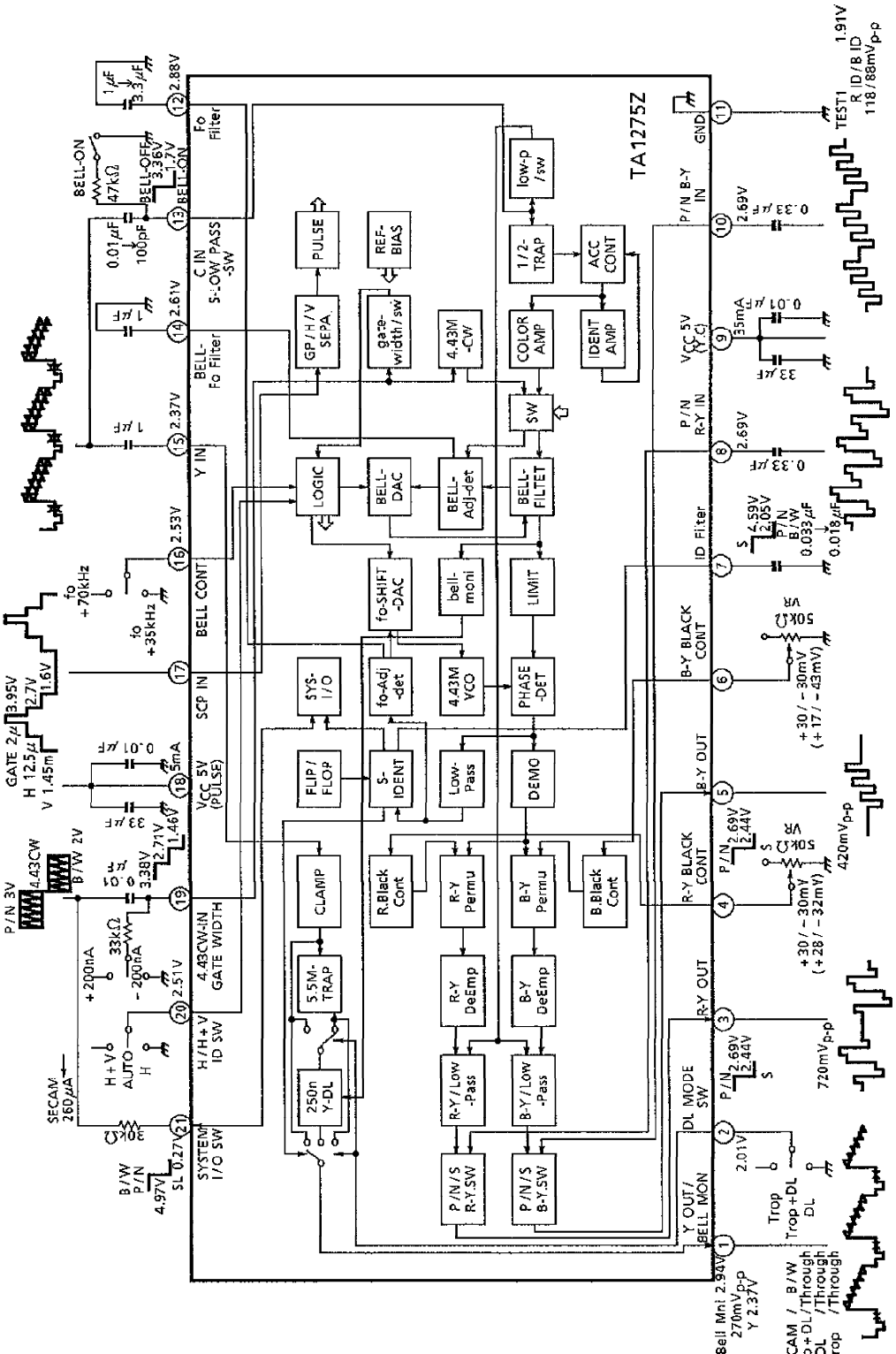
SZIP21-P-0.89

Weight : 1.0g (Typ.)

FEATURES

- Working with TB1231 series, which is PAL / NTSC PIF / VIF / VIDEO / CHROMA / DEF processor.
- Built-in Bell filter
- Built-in FM demodulator with PLL circuit for color demodulation and SECAM identification
- DC voltage offset of demodulated signal adjuster
- Input terminals for external R-Y / B-Y signals

BLOCK DIAGRAM



MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CCmax}	8	V
Signal Voltage at Each Input Pin	e_{inmax}	5	V_{p-p}
Power Consumption	P_D (Note)	780	mW
Power Consumption Reduction Ratio	1 / Qja	6.3	mW / °C
Operating Temperature	T_{opr}	– 20~65	°C
Storage Temperature	T_{stg}	– 55~150	°C

(Note) Refer to the figure below.

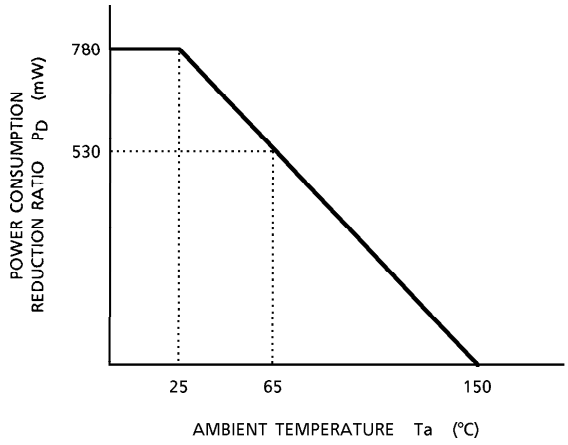


Fig. Power consumption reduction against higher temperature.

RECOMMENDED CONDITION IN USE

CHARACTERISTIC	DESCRIPTION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	pin 9, 18	4.5	5.0	5.5	—
Y Input Signal Level	white : 100%, including sync.	0.9	1.0	1.1	V_{p-p}
Color Difference Input Level	Burst level	270	300	330	mV_{p-p}
SCP Input Level	G level	3.25	4.0	5.0	V
	H level	1.95	2.1	2.6	
	V level	1.1	1.25	1.4	

ELECTRICAL CHARACTERISTICS

(YC V_{CC} / PULSE V_{CC} = 9V, Ta = 25°C, Unless otherwise specified)

Current consumption

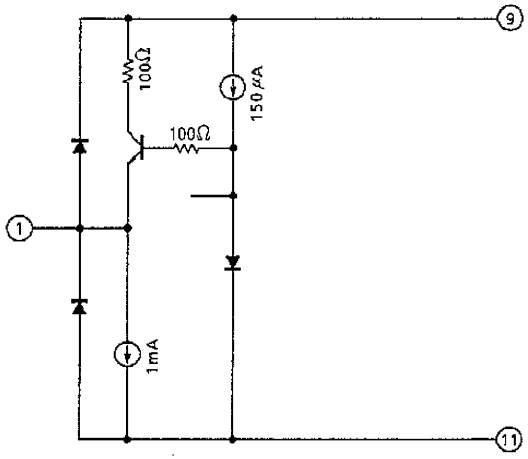
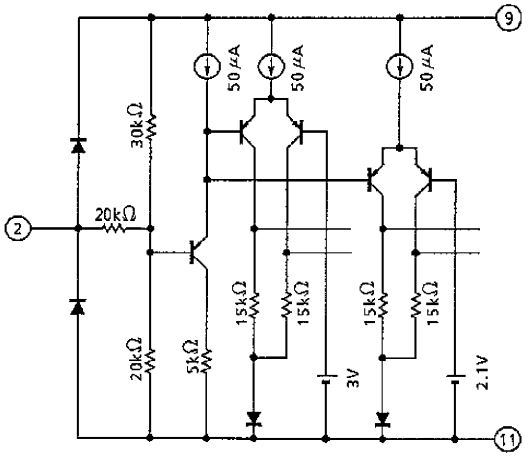
PIN NAME	SYMBOL	TEST CIR-CUIT	MIN.	TYP.	MAX.	UNIT
V_{CC} (Y / C)	I_{CC1}	—	30.8	36.3	44.4	mA
V_{CC} (PULSE)	I_{CC2}	—	8.3	9.8	11.9	

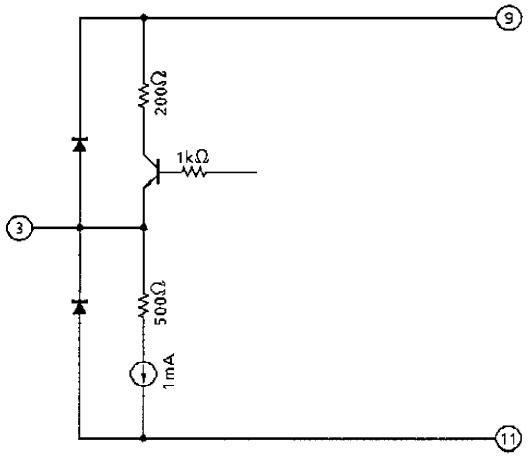
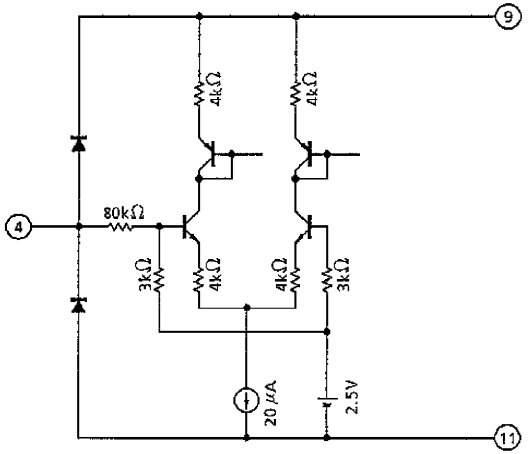
TERMINAL VOLTAGE

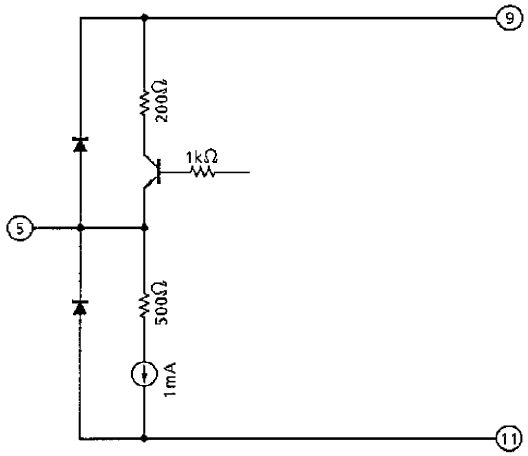
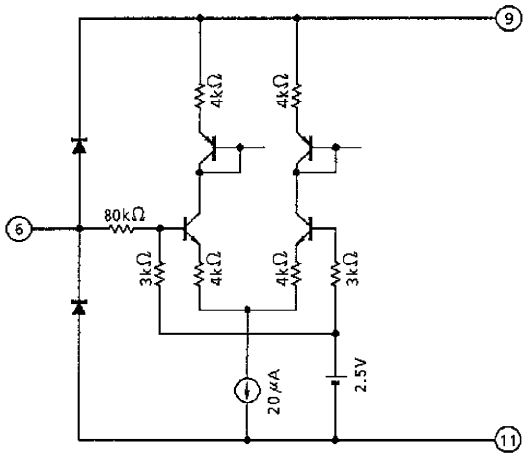
PIN No.	PIN NAME	SYMBOL	TEST CIR-CUIT	MIN.	TYP.	MAX.	UNIT
1	Y OUT	V_1	—	2.30	2.50	2.70	V
2	MODE SW	V_2	—	1.80	2.00	2.20	
3	R-Y OUT	V_3	—	2.30	2.60	2.90	
4	R-Y BLACK CONTROL	V_4	—	2.30	2.50	2.70	
5	B-Y OUT	V_5	—	2.30	2.60	2.90	
6	B-Y BLACK CONTROL	V_6	—	2.30	2.50	2.70	
7	S-ID FILTER (killer OFF)	V_7	—	4.25	4.55	4.85	
8	EXT. R-Y IN	V_8	—	2.50	2.70	2.90	
10	EXT. B-Y IN	V_{10}	—	2.50	2.70	2.90	
12	F0-ADJ. FILTER	V_{12}	—	2.55	3.00	3.45	
13	C IN	V_{13}	—	3.20	3.40	3.60	
14	BELL ADJ. FILTER	V_{14}	—	2.35	2.65	2.95	
15	Y IN	V_{15}	—	2.10	2.35	2.60	
16	BELL CONTROL	V_{16}	—	2.30	2.50	2.70	
19	4.43MHz CW-IN	V_{19}	—	2.50	2.75	3.00	
20	ID SW	V_{20}	—	2.30	2.50	2.70	
21	SECAM ID I/O (killer OFF)	V_{21}	—	0.00	0.20	0.60	

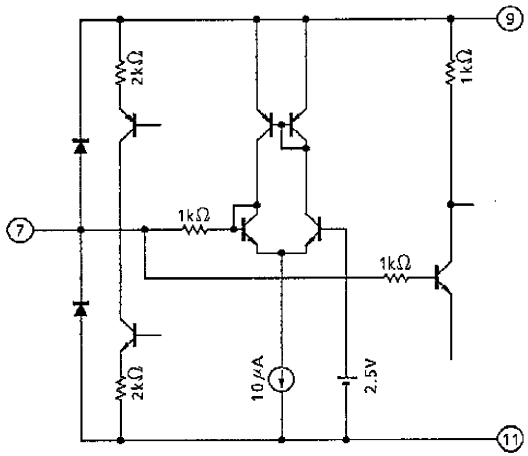
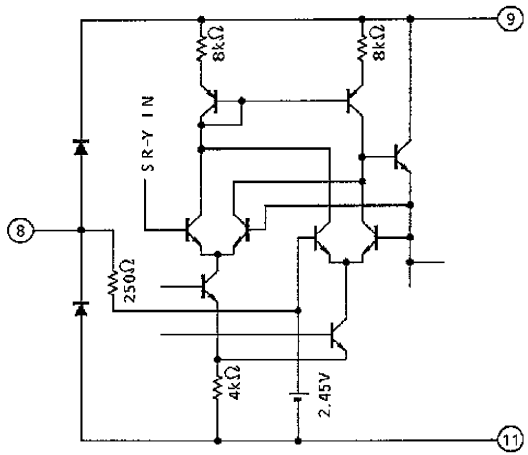
(Note) Pin 12, 13, 16, 17 and 18 are weak against static electricity and surge impulse. Please take confer measure to meet, if necessary.

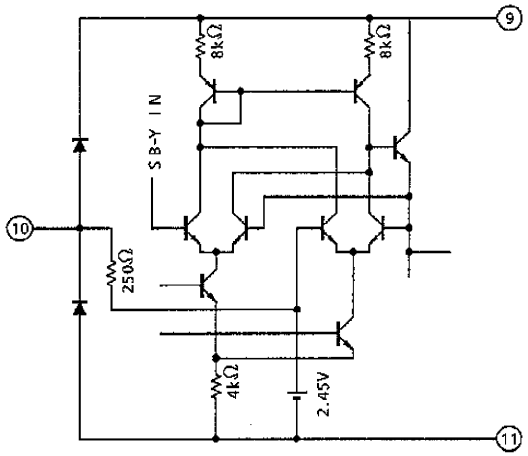
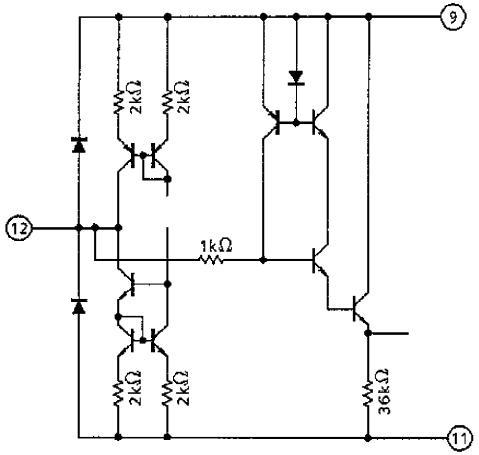
TERMINAL INTERFACE

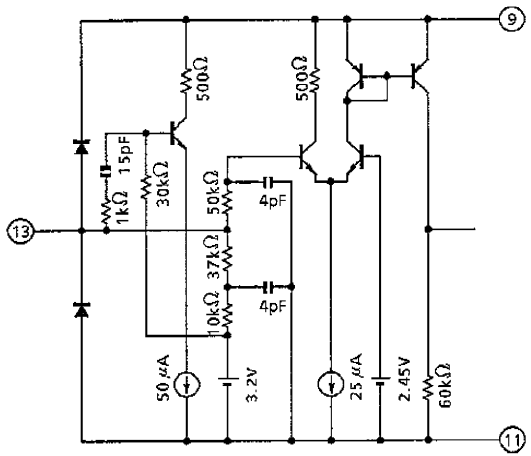
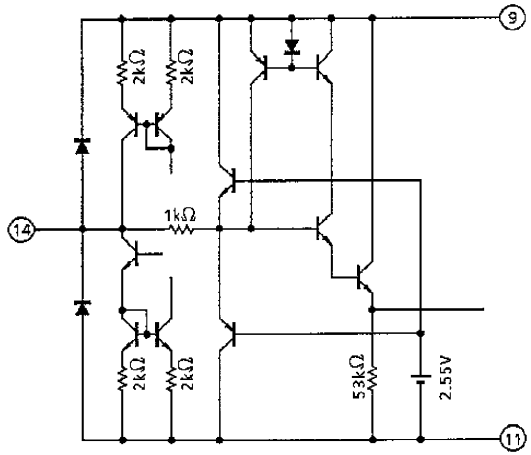
PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT	INPUT / OUTPUT SIGNAL
1	Y OUT	The output pin for Y signal. Standard output level is 1.0$V_{p\text{-}p}$. The 5.5MHz trap filter and delay line on the Y signal processing is controlled by the switch on pin #2. The output signal of the bell filter can be monitored on this pin by switching pin #13 for testing.		—
2	MODE SW	The pin for controlling the Y processing mode. to V_{CC} : 5.5MHz trap open : 5.5MHz trap + D. L. to GND : DL		—

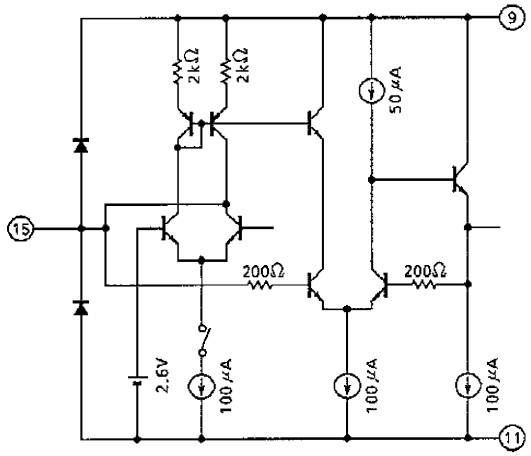
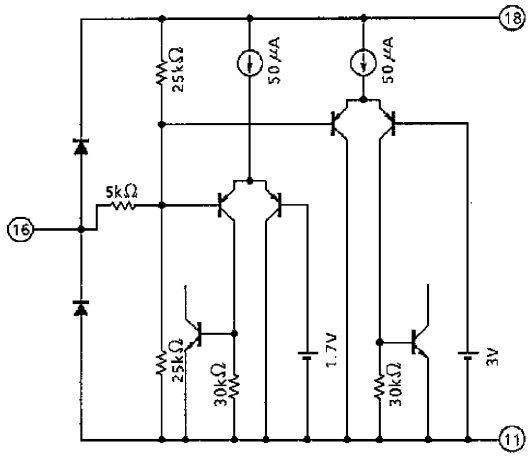
PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT	INPUT / OUTPUT SIGNAL
3	R-Y OUT	The output pin for demodulated R-Y signal. Standard output level is $0.7V_{p-p}$ with standard color bar signal. R-Y processor has a LPF to eliminate the carrier components.		—
4	R-Y BLACK CONTROL	The pin for controlling the black offset level. Adjusting range is within ±30mV (This pin should be opened in the case of using with TB1231, because TB1231 has an IIC BUS control for SECAM black alignment.)		—

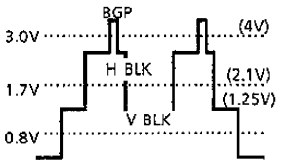
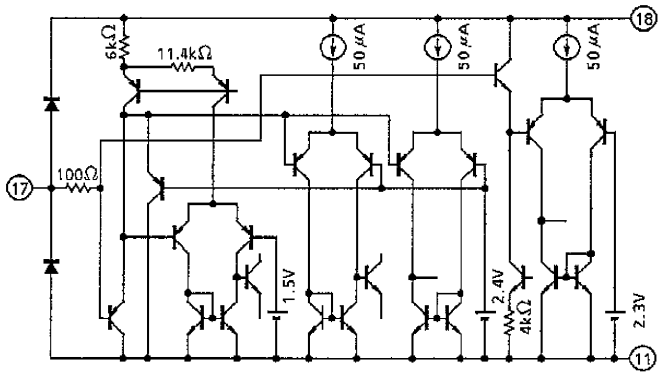
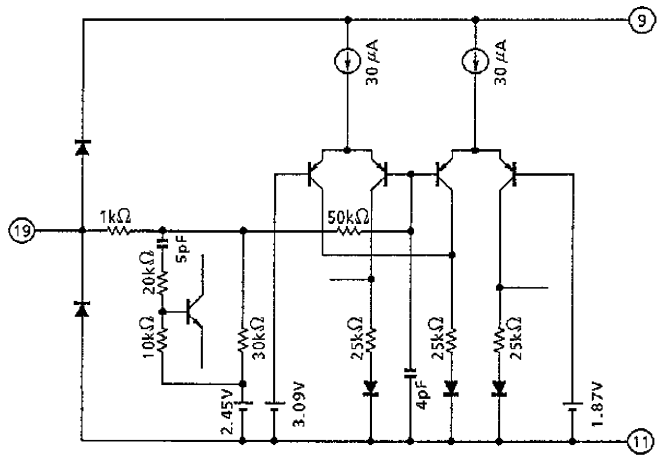
PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT	INPUT / OUTPUT SIGNAL
5	B-Y OUT	The output pin for demodulated B-Y signal. Standard output level is $0.56V_{p\text{-}p}$. B-Y processor has a LPF to eliminate the carrier components.		—
6	B-Y BLACK CONTROL	The pin for controlling the black offset level. Adjusting range is within ±30mV (This pin should be opened in the case of using with TB1231, because TB1231 has an IIC BUS control for SECAM black alignment.)		—

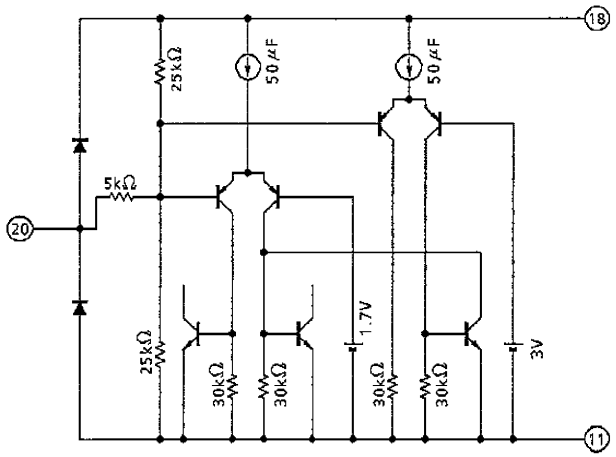
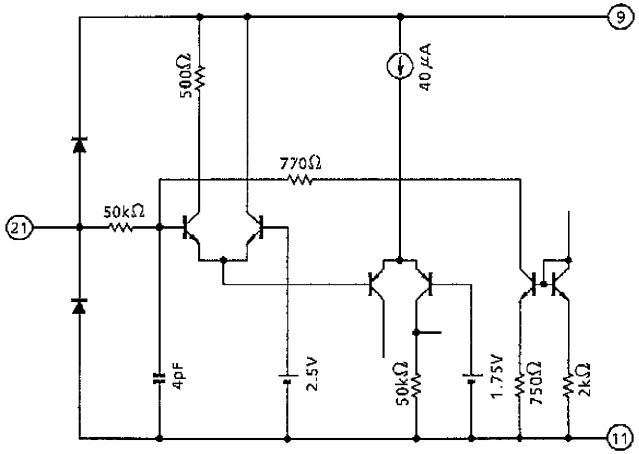
PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT	INPUT / OUTPUT SIGNAL
7	S-ID FILTER	The pin for connecting the SECAM ident filter capacitor. A too big capacitor causes a time delay to get color signal on a picture, and a week RF signal performance would getting worth if the capacitor is too small.		—
8	EXT. R-Y IN	The input pin for external R-Y signal. The gain of the internal amplifier is 0dB.		—
9	5V V_{CC}	The V_{CC} pin for Y/C processing block.	—	—

PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT	INPUT / OUTPUT SIGNAL
10	EXT. B-Y IN	The input pin for external B-Y signal. The gain of the internal amplifier is 0dB.		—
11	GND	The GND pin.	—	—
12	F_O-ADJ. FILTER	The pin for connecting a capacitor for automatic adjusting circuit. A too big capacitor causes a time delay to get color signal on a picture, and the picture noise, flicker, would be appeared if the capacitor is too small.		—

PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT	INPUT / OUTPUT SIGNAL
13	C IN	The chroma signal input pin. Apply composite signal through 100pF of coupling capacitor. Standard input signal level is $1V_{p\text{-}p}$. The bell monitor switch for testing is overlaid on this pin. When connecting this pin to GND through 47kΩ, the bell filter output is observed on the pin #1 (Y-OUT).		—
14	BELL-ADJ. FILTER	The pin for connecting the filter capacitor for the bell filter f_0, 4.427MHz. A too big capacitor causes a time delay on bell filter f_0 adjusting, and picture would be noisy if it is too small.		—

PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT	INPUT / OUTPUT SIGNAL
15	Y IN	The Y signal input pin. Apply the composite signal into this pin through a coupling capacitor. The standard input level is $1.0V_{p-p}$.		—
16	BELL CONTROL	The pin for selecting the bell filter f_0. $f_0 + 70kHz$: connect to V_{CC} f_0 : open $f_0 + 35kHz$: connect to GND		—

PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT	INPUT / OUTPUT SIGNAL
17	S.C.P IN	The pin for input the sand castle pulse, SCP. 		—
18	5V V_{CC}	V_{CC} pin for logic block.	—	—
19	4.43MHz CW-IN	The pin for input 4.43MHz of carrier wave for self adjustment circuit. Input 500mV_{p-p} sine wave through a coupling capacitor. The switch for changing the gate pulse width is overlaid on this pin. +200nS : to V_{CC} thru 33kΩ 0ns : open −200nS : to GND thru 33kΩ		—

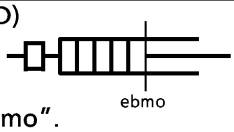
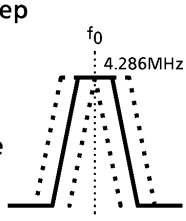
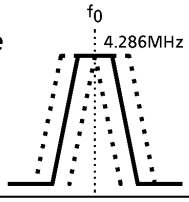
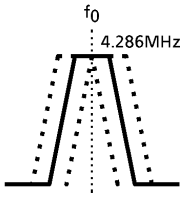
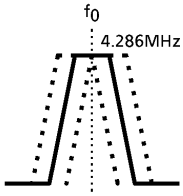
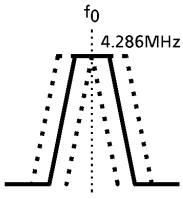
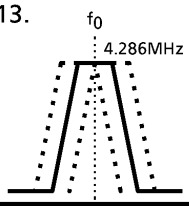
PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT	INPUT / OUTPUT SIGNAL
20	ID SW	The switch pin for selecting the ID detection mode. H + V : connected to V_{CC} Auto search (H, V, H + V) : opened H : connected to GND		—
21	SECAM ID I/O	The interface pin to the main processor (i.e.. TB1231). This input / output interface pin sinks 270μA of current when the TA1275Z recognizes the SECAM input signal, turns the internal / external switch by the input DC voltage. Internal : GND~2.5V External : 2.5V~V_{CC}		—

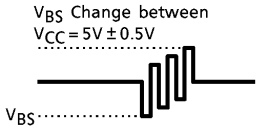
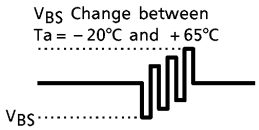
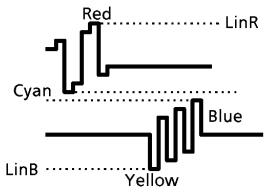
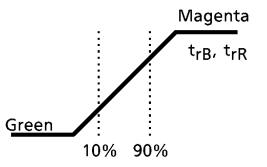
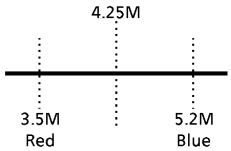
AC CHARACTERISTIC (Unless otherwise specified, V_{CC} = 5V (9 & 18pin), Ta = 25°C)

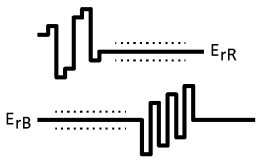
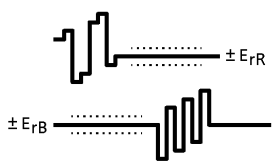
No.	ITEM	SYMBOL	TEST CIR-CUIT	TEST CONDITION	RATING			UNIT
					MIN.	TYP.	MAX.	
1	Bell Monitor Output Amplitude	ebmo	—	(Note 1)	120	190	310	mV (p-p)
2	Bell / Filter f_0	f_{0B-C}	—	(Note 2)	− 23	0	23	kHz
3	Bell / Filter f_0 Variable Range	f_{0B-H} f_{0B-L}	—	(Note 3)	+ 40 + 10	+ 70 + 35	+ 100 + 60	kHz kHz
4	Bell / Filter f_0 V_{CC} Drift	Δf_{0BELV}	—	(Note 4)	− 25	0	+ 25	kHz
5	Bell / Filter f_0 Thermal Drift	Δf_{0BELT}	—	(Note 5)	− 30	0	+ 30	kHz
6	Bell / Filter Q	Q_{BEL}	—	(Note 6)	14	16	18	—
7	Color Difference Output Amplitude	V_{RS} V_{BS}	—	(Note 7)	0.39 0.5	0.56 0.7	0.73 0.99	V (p-p) V (p-p)
8	Color Difference Relative Amplitude	R / B-S	—	(Note 8)	1.24	1.35	1.52	—
9	Color Difference S / N	SNB-S SNR-S	—	(Note 9)	− 40 − 40	− 46 − 46	— —	dB dB
10	Color Difference Output V_{CC} Drift	ΔV_{BVH} ΔV_{BVL}	—	(Note 10)	− 8 − 8	0 0	+ 8 + 8	% %
11	Color Difference Output Thermal Drift	ΔV_{BTH} ΔV_{BTL}	—	(Note 11)	− 8 − 8	0 0	+ 8 + 8	% %
12	Linearity	LinB LinR	—	(Note 12)	93 93	100 100	107 107	% %
13	Rising Time	t_{rR} t_{rB}	—	(Note 13)	— —	1.3 1.3	2.0 2.0	μs μs
14	Demodulation Hold Range	H_{RL} H_{BH}	—	(Note 14)	— 4.75	3.5 5.2	3.9 —	MHz MHz
15	Demodulation Capture Range	C_{RL} C_{BH}	—	(Note 15)	— 4.75	3.5 5.2	3.9 —	MHz MHz
16	Killer Operation Input Level	e_{SK} e_{SC}	—	(Note 16)	0.5 0.5	1 1	2 2	mV (p-p) mV (p-p)
17	Carrier Remains on Demodulated Output	C_{LRS} C_{LBS}	—	(Note 17)	— —	3 3	10 10	mV (p-p) mV (p-p)
18	Black Level Offset	E_{rR} E_{rB}	—	(Note 18)	− 30 − 30	0 0	+ 30 + 30	mV mV
19	ID Voltage	$V_{21color}$ $V_{21B/W}$	—	(Note 19)	0.12 4.4	0.2 4.8	0.6 5	V V
20	ID Current	$I_{21color}$ $I_{21B/W}$	—	(Note 20)	208 —	290 0	385 10	μA μA
21	System SW Threshold Level	$V_{21P/N}$ V_{21S}	—	(Note 21)	2.3 2.3	2.5 2.5	2.7 2.7	V V
22	Color Difference Output DC Level	$V_{3P/N}$ $V_{5P/N}$ V_{3S} V_{5S}	—	(Note 22)	2.3 2.3 2.2 2.2	2.6 2.6 2.5 2.5	2.9 2.9 2.8 2.8	V V V V

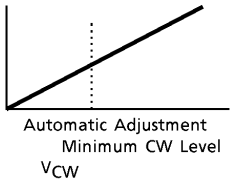
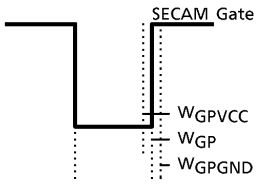
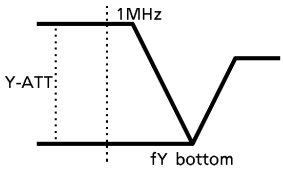
No.	ITEM	SYMBOL	TEST CIR-CUIT	TEST CONDITION	RATING			UNIT
					MIN.	TYP.	MAX.	
23	R-Y / B-Y Color Black Level Control Characteristics	ΔE_{rR+} ΔE_{rR-} ΔE_{rB+} ΔE_{rB-}	—	(Note 23)	27 −33 27 −33	30 −30 30 −30	33 −27 33 −27	mV mV mV mV
24	Ext. Color Difference Gain	G_{EXTR} G_{EXTB}	—	(Note 24)	0.8 0.8	1.0 1.0	1.2 1.2	— —
25	4.43MHz CW Min. Input Level	V_{CW}	—	(Note 25)	200	—	—	$mV_{(p-p)}$
26	Gate Pulse Width Variable Range	W_{GPVCC} W_{GP} W_{GPGND}	—	(Note 26)	1.7 1.9 2.1	1.8 2.0 2.2	1.9 2.1 2.3	μs μs μs
27	Y DL Characteristics (at 3MHz)	t_{YDL}	—	(Note 27)	180	250	360	—
28	Y Trap Characteristics	$f_{0Y5.5}$ $G_{at\ f_0}$	—	(Note 28)	4.8 20	5.5 35	6.5 —	MHz dB
29	Y Input Dynamic Range	DR_{YS} DR_{YBW}	—	(Note 29)	1.2 1.2	1.5 1.5	1.8 1.8	$V_{(p-p)}$ $V_{(p-p)}$
30	Y Gain	GYS GYBW	—	(Note 30)	0.8 0.8	1.0 1.0	1.2 1.2	— —

TEST CONDITION (Unless otherwise specified, V_{CC} = 5V (9 & 18pin), Ta = 25°C)

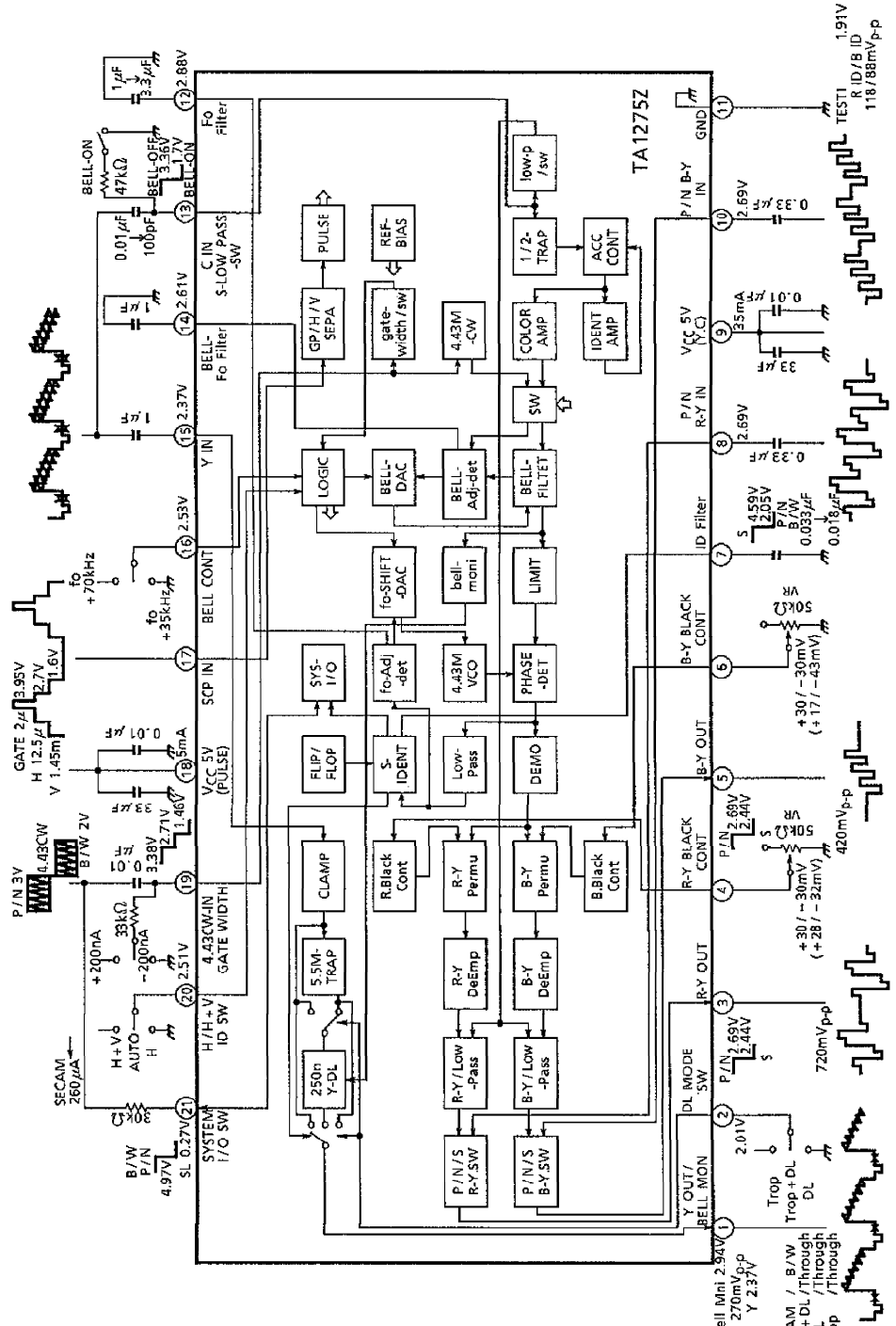
NOTE	ITEM	TEST CONDITION
1	Bell Monitor Output Amplitude	(1) : Input a 75% color bar signal (200mV$_{p-p}$ at R ID) into Pin 13. (2) : Connect pin 13 to GND through 47kΩ. (3) : Measure R-Y ID amplitude at Pin 1, that is "ebmo". 
2	Bell / Filter f_0	(1) : Input a 20mV$_{p-p}$ sine wave whose frequency is sweep into Pin 13. (2) : Connect pin 13 to GND through 47kΩ. (3) : Keep pin 16 opened. (4) : Measure the frequency at which Pin 1 output is the biggest, that is "f_{0BEL}". (5) : Calculate : "f_{0B-C}" = f_{0BEL} − 4,286 [kHz]. 
3	Bell / Filter f_0 Variable Range	(1) : Input a 20mV$_{p-p}$ sine wave whose frequency is sweep into Pin 13. (2) : Connect pin 13 to GND through 47kΩ. (3) : Measure the frequency at which Pin 1 output is the biggest when V_{CC} is 5.5V / 4.5V, that is $f_{0BEL5.5}$ / $f_{0BEL4.5}$. (4) : Calculate : "f_{0B-H}" = f_{0BELH} − 4,286 [kHz]. "f_{0B-L}" = f_{0BELL} − 4,286 [kHz]. 
4	Bell / Filter f_0 V_{CC} Drift	(1) : Input a 20mV$_{p-p}$ sine wave whose frequency is sweep into Pin 13. (2) : Connect pin 13 to GND through 47kΩ. (3) : Pin 16 is opened. (4) : Measure the frequency at which Pin 1 output is the biggest when V_{CC} is 5.5V / 4.5V, that is $f_{0BEL5.5}$ / $f_{0BEL4.5}$. (5) : Calculate : "Δf_{0BELV}" = $f_{0BEL5.5}$ − $f_{0BEL4.5}$ 
5	Bell / Filter f_0 Thermal Drift	(1) : Input a 20mV$_{p-p}$ sine wave whose frequency is sweep into Pin 13. (2) : Connect pin 13 to GND through 47kΩ. (3) : Pin 16 is opened. (4) : Measure the frequency at which Pin 1 output is the biggest when atmosphere is − 20°C / + 65°C, that is $f_{0BEL-20}$ / $f_{0BEL+65}$. (5) : Calculate : "Δf_{0BELT}" = $f_{0BEL-20}$ − $f_{0BEL+65}$ 
6	Bell / Filter Q	(1) : Input a 20mV$_{p-p}$ sine wave whose frequency is sweep into Pin 13. (2) : Connect pin 13 to GND through 47kΩ. (3) : Pin 16 is opened. (4) : Observe the frequency response of Pin 1 output. (5) : Calculate : "Q_{BEL}" = (MAX − 3dB Band Width) / f_{0BEL}. 
7	Color Difference Output Amplitude	(1) : Input a 75% color bar (200mV$_{p-p}$ at R ID) into Pin 13. (2) : Measure the R-Y output amplitude at Pin 3, that is "V_{RS}". (3) : Measure the B-Y output amplitude at Pin 5, that is "V_{BS}". 

NOTE	ITEM	TEST CONDITION
8	Color Difference Relative Amplitude	Calculate : "R / B-S" = V_{RS} / V_{BS}.
9	Color Difference S / N	(1) : Input a 200mV_{p-p} non-modulated chroma signal into Pin 13. (2) : Measure the amplitude of noise on Pin 3, that is n_R. (3) : Measure the amplitude of noise on Pin 5, that is n_B. (4) : Calculate : "SNB-S" = $20\ell og\ (2\sqrt{2V_{BS} / n_B})$ "SNR-S" = $20\ell og\ (2\sqrt{2V_{RS} / n_R})$
10	Color Difference Output V_{CC} Drift	(1) : Input a 75% color bar (200mV_{p-p} at R ID) into Pin 13. (2) : Measure the B-Y output amplitude at Pin 5 when V_{CC} is 5.5V / 4.5V, that is $V_{BS5.5}$ / $V_{BS4.5}$. (3) : Calculate : "ΔV_{BVH}" = $(V_{BS5.5} - V_{BS}) / V_{BS}$*100 [%] "$\Delta V_{BVL}$" = $(V_{BS4.5} - V_{BS}) / V_{BS}$*100 [%] 
11	Color Difference Output Thermal Drift	(1) : Input a 75% color bar (200mV_{p-p} at R ID) into Pin 13. (2) : Measure the B-Y output amplitude at Pin 5 when atmosphere is − 20°C / + 65°C, that is V_{BS-20} / V_{BS+65}. (3) : Calculate : "V_{BSTH}" = $(V_{BS+65} - V_{BS}) / V_{BS}$*100 [%] "$V_{BSTL}$" = $(V_{BS-20} - V_{BS}) / V_{BS}$*100 [%] 
12	Linearity	(1) : Input a 75% color bar (200mV_{p-p} at R ID) into Pin 13. (2) : Measure the amplitude between Black and Cyan / Red, that is V_{Cyan} / V_{Red}. (3) : Measure the amplitude between Black and Yellow / Blue, that is V_{Yellow} / V_{Blue}. (4) : Calculate : "LinR" = V_{Cyan} / V_{Red} "LinB" = V_{Yellow} / V_{Blue} 
13	Rising Time	(1) : Input a 75% color bar (200mV_{p-p} at R ID) into Pin 13. (2) : Measure the rising time (from 10% to 90%) between Green and Magenta at Pin 3 / Pin 5, that is "t_{rR}" / "t_{rB}". 
14	Demodulation Hold Range	(1) : Input a 200mV_{p-p}, 2MHz sine wave into Pin 13. (2) : Increasing the input frequency, measure the frequencies at which demodulated output appears at Pin 3, that is "C_{RL}", and at which demodulates output disappears at Pin 5, that is "H_{BH}". (3) : Input a 200mV_{p-p}, 7MHz sine wave into Pin 13. (4) : Decreasing the input frequency, measure the frequencies at which demodulated output appears at Pin 5, that is "C_{BH}", and at which demodulated output disappears at Pin 3, that is "H_{RL}". 
15	Demodulation Capture Range	

NOTE	ITEM	TEST CONDITION
16	Killer ON / OFF Level	(1) : Input a 75% color bar ($200mV_{p-p}$ at R ID) into Pin 13. (2) : Decreasing the input amplitude, measure the amplitude at which demodulated outputs disappear at Pin 3 and Pin 5, that is "e_{SK}". (3) : Increasing the input amplitude from $0mV_{p-p}$, measure the amplitude at which demodulated outputs appears at Pin 3 and Pin 5, that is "e_{SC}".
17	Carrier Remains on Demodulated Output	(1) : Input a $200mV_{p-p}$ non-modulated chrome signal into Pin 13. (2) : Measure the amplitude of 4.25MHz signal at Pin 3, that is "CL_{RS}". (3) : Measure the amplitude of 4.406MHz signal at Pin 5, that is "CL_{BS}".
18	Black Level Offset	(1) : Input a $200mV_{p-p}$ non-modulated chrome signal into Pin 13. (2) : Pin 4 and Pin 6 are opened. (3) : Measure the difference between picture period and blanking period at Pin 3 / Pin 5, that is "E_{rR}" / "E_{rB}". 
19	ID Voltage	(1) : Input a 75% color bar ($200mV_{p-p}$ at R ID) into Pin 13. (2) : Measure the voltage and input current of Pin 21, that are "$V_{21color}$" and "$I_{21color}$". (3) : No input on Pin 13. (4) : Measure the voltage and input current of Pin 21, that are "$V_{21B/W}$" and "$I_{21B/W}$".
20	ID Current	
21	System SW Threshold Level	(1) : Input a $200mV_{p-p}$, 15kHz sine wave into Pin 8 and Pin 10. (2) : No input Pin 13. (3) : Increasing the Pin 21 voltage from 0V, measure the voltage at which 15kHz sine wave appears at Pin 3 and Pin 5, that is "V_{21PIN}". (4) : Decreasing the Pin 21 voltage from 4V, measure the voltage at which 15kHz sine wave disappears at Pin 3 and Pin 5, that is "V_{21S}".
22	Color Difference Output DC Level	(1) : No input on Pin 13. (2) : Measure the DC voltage on Pin 3 / Pin 5 when Pin 21 is 4V, that is "V_{3PIN}" / "V_{5PIN}". (3) : Measure the DC voltage on Pin 3 / Pin 5 when Pin 21 is 0V, that is "V_{3S}" / "V_{5S}".
23	R-Y B-Y Black Level Control Characteristics	(1) : Input a 75% color bar ($200mV_{p-p}$ at R ID) into Pin 13. (2) : Measure the difference between picture period and blanking period at Pin 3 when Pin 4 is 4V / 0V, that is E_{rR+} / E_{rR-}. (3) : Measure the difference between picture period and blanking period at Pin 5 when Pin 6 is 4V / 0V, that is E_{rB+} / E_{rB-}. (4) : Calculate : "ΔE_{rR+}" = $E_{rR+} - E_{rR}$ "ΔE_{rR-}" = $E_{rR-} - E_{rR}$ "ΔE_{rB+}" = $E_{rB+} - E_{rB}$ "ΔE_{rB-}" = $E_{rB-} - E_{rB}$ 

NOTE	ITEM	TEST CONDITION
24	Ext. Color Difference Gain	(1) : Input a 200mV$_{p-p}$, 15kHz sine wave into Pin 8 and Pin 10. (2) : Supply 4V to Pin 21. (3) : Measure the output amplitudes at Pin 3 and Pin 5, that are V_{EXTR} and V_{EXTB}. (4) : Calculate : "G_{EXTR}" = V_{EXTR} / 200 [mV] "G_{EXTB}" = V_{EXTB} / 200 [mV]
25	4.43MHz CW Min. Input Level	(1) : Input a 75% color bar (200mV$_{p-p}$ at R ID) into Pin 13. (2) : Increasing an amplitude of 4.43MHz Continuous Wave inputted into Pin 19 from 0mV$_{p-p}$, measure the amplitude at which color difference signals appear at Pin 3 and Pin 5, that is "V_{CW}". 
26	Gate Pulse Width Variable Range	(1) : Input a 75% color bar (200mV$_{p-p}$ at R ID) into Pin 13. (2) : Connecting the Pin 7 to GND via 1kΩ, observe the gate pulse at Pin 7. (3) : Measure the gate pulse widths when Pin 19 is opened, connected to V_{CC} / GND, that are "W_{GP}", "W_{GPVCC}" and "W_{GPGND}". 
27	Y DL Characteristics	(1) : Connect the Pin 7 to V_{CC} via 10kΩ. (2) : Connect the Pin 2 to GND. (3) : Measure the delay time between Pin 15 input and Pin 1 output, that is "t_{YDL}".
28	Y Trap Characteristics	(1) : Input a sweep signal with sync. (1V$_{p-p}$). (2) : Connect the Pin 2 to GND. (3) : Connect the Pin 2 to V_{CC}. (4) : Observing the frequency response at Pin 1, measure the frequency at which the attenuation is maximum, that is "$f_{0Y5.5}$" and measure the attenuation at $f_{0Y5.5}$ against the one at 1MHz, that is "$G_{Y5.5}$". 
29	Y Input Dynamic Range	(1) : Connect the Pin 7 to V_{CC} via 10kΩ. (2) : Increasing the amplitude of Y signal inputted into Pin 15, measure the amplitude at which the output signal from Pin 1 begins to be distorted, that is "DR_{YS}". (3) : Open the Pin 7. (4) : Repeat (2), that is "DR_{YBW}".
30	Y Gain	(1) : Input a 1V$_{p-p}$ Y signal into Pin 15. (2) : Connect the Pin 7 to V_{CC} via 10kΩ. (3) : Measure the gain between Pin 15 input and Pin 1 output, that is "G_{YS}". (3) : Open the Pin 7. (4) : Repeat (3), that is "G_{YBW}".

TEST CIRCUIT



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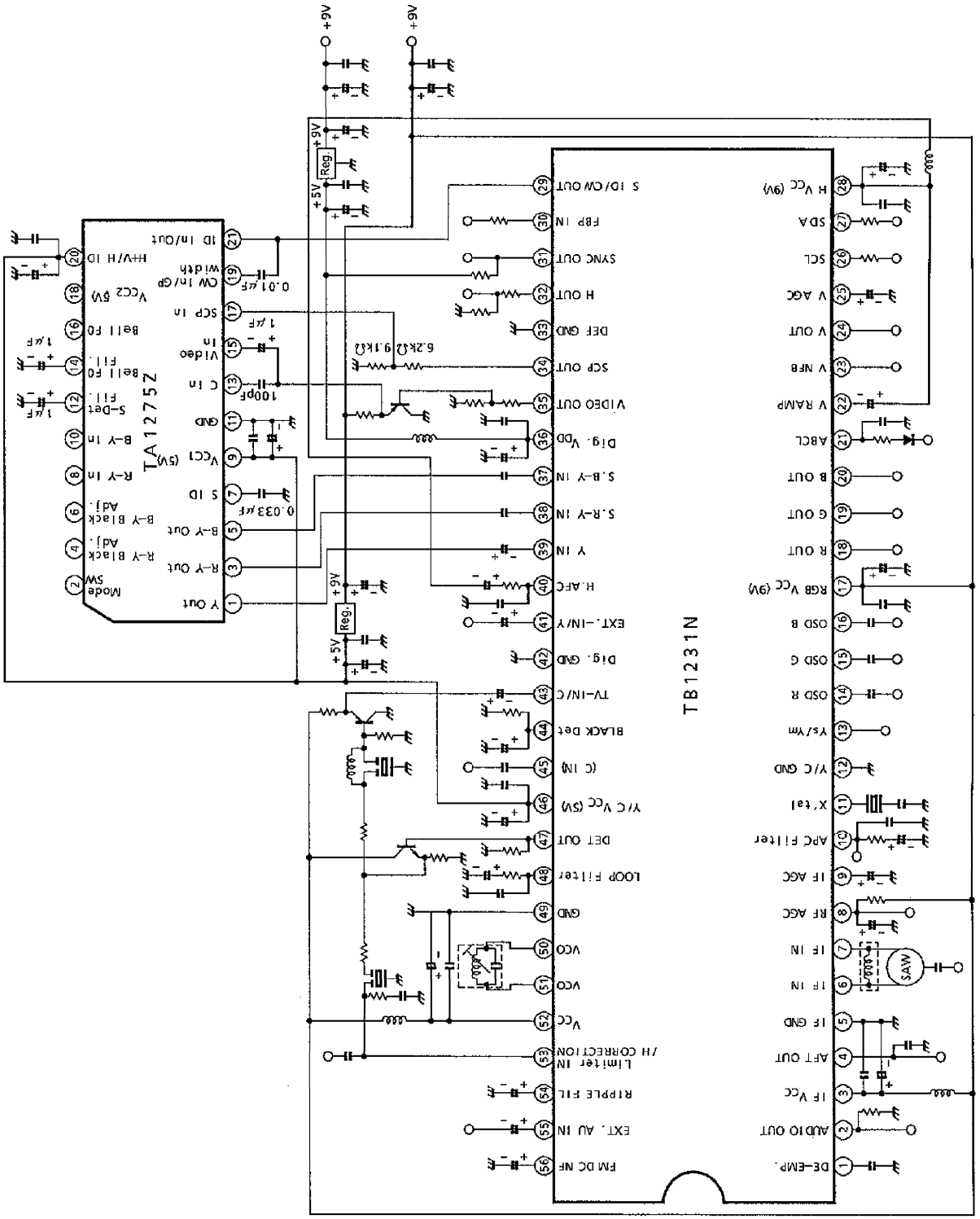
APLICATION CIRCUIT



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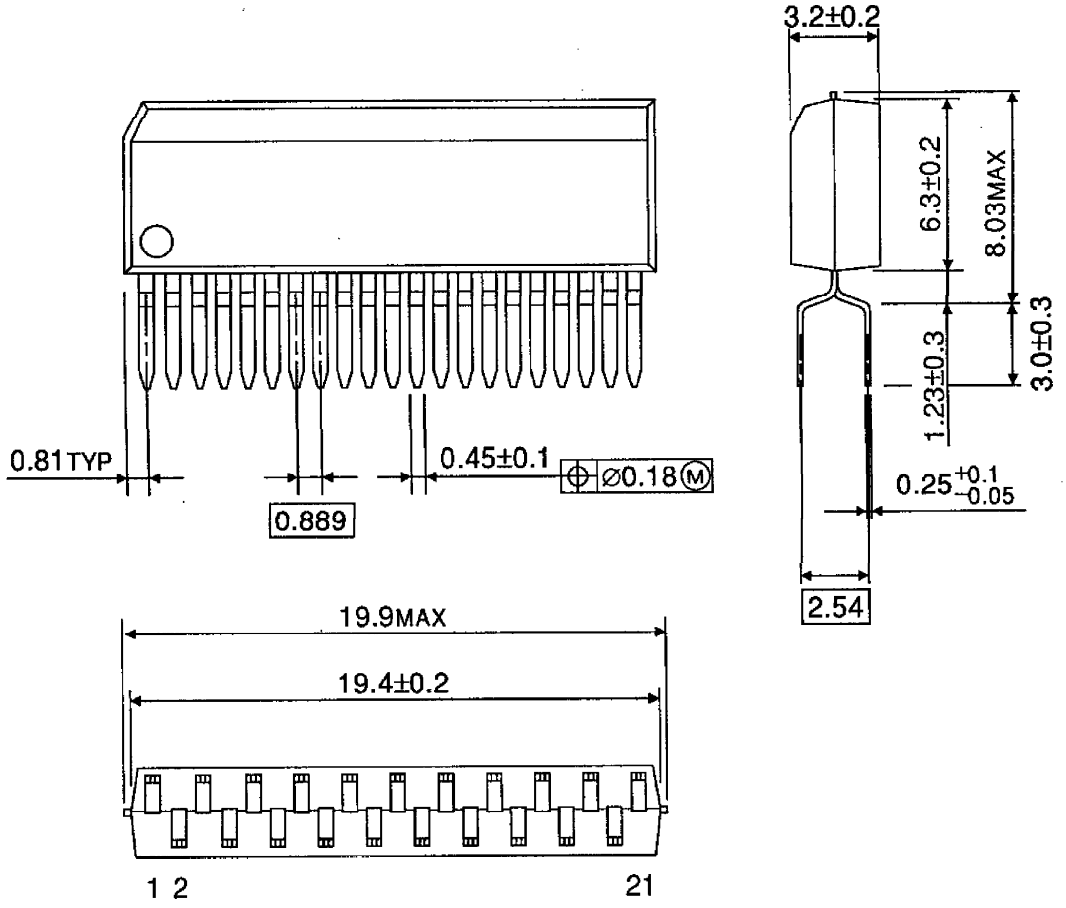
OUTLINE DRAWING

SZIP21-P-0.89

Unit : mm



Weight : 1.0g (Typ.)