

# TA1275Z

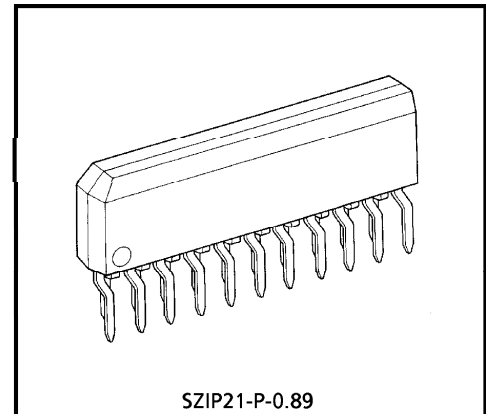
## SECAM DEMODULATOR PROCESSOR

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

This IC requires very few external parts.

### 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



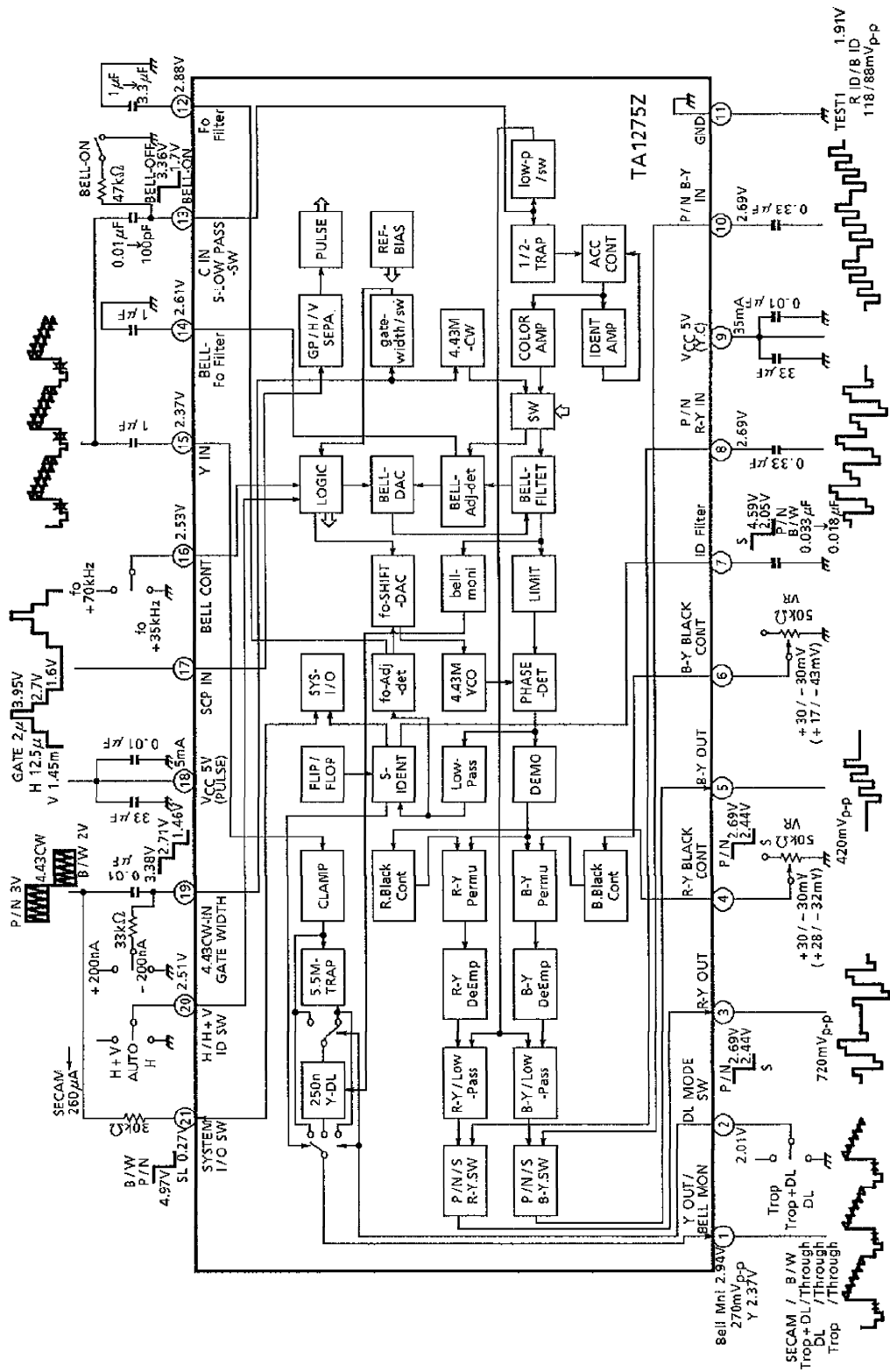
SZIP21-P-0.89

Weight : 1.0g (Typ.)

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BLOCK DIAGRAM



**MAXIMUM RATINGS (Ta = 25°C)**

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CCmax</sub>	8	V
Signal Voltage at Each Input Pin	e <sub>inmax</sub>	5	V <sub>p-p</sub>
Power Consumption	P <sub>D</sub> (Note)	780	mW
Power Consumption Reduction Ratio	1 / Q <sub>ja</sub>	6.3	mW / °C
Operating Temperature	T <sub>opr</sub>	- 20~65	°C
Storage Temperature	T <sub>stg</sub>	- 55~150	°C

(Note) Refer to the figure below.

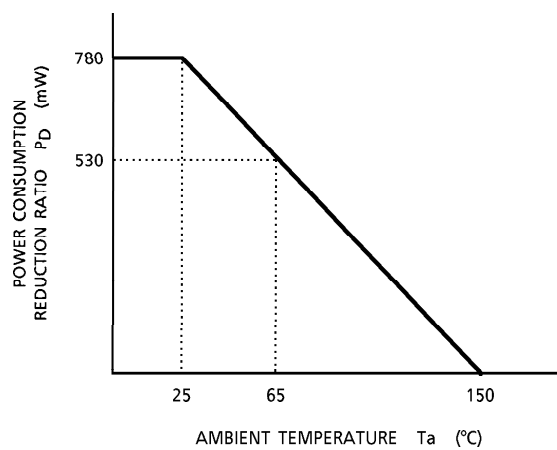


Fig. Power consumption reduction against higher temperature.

## 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 <sub>p-p</sub>
Color Difference Input Level	Burst level	270	300	330	mV <sub>p-p</sub>
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<sub>CC</sub>/PULSE V<sub>CC</sub>=9V, Ta = 25°C, Unless otherwise specified)

Current consumption

PIN NAME	SYMBOL	TEST CIR-CUIT	MIN.	TYP.	MAX.	UNIT
V <sub>CC</sub> (Y/C)	I <sub>CC1</sub>	—	30.8	36.3	44.4	mA
V <sub>CC</sub> (PULSE)	I <sub>CC2</sub>	—	8.3	9.8	11.9	

## TERMINAL VOLTAGE

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

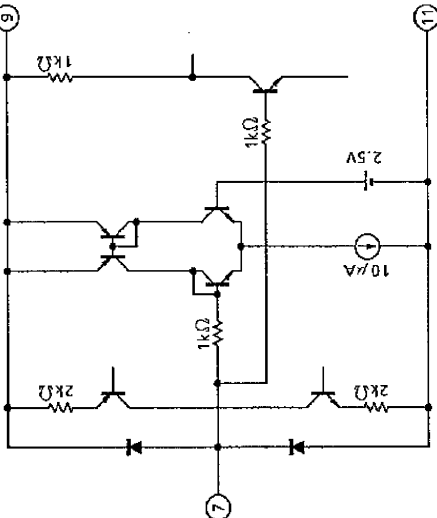
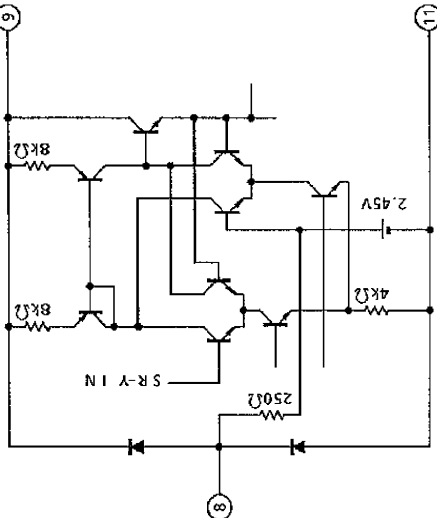
(Note) Pin 12, 13, 16, 17 and 18 are weak against static electricity and surge impulse. Please take confer measure to meet, if necessary.

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

PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT	INPUT / OUTPUT SIGNAL
3	R-Y OUT	<p>The output pin for demodulated R-Y signal. Standard output level is 0.7V<sub>p-p</sub> with standard color bar signal. R-Y processor has a LPF to eliminate the carrier components.</p>		—
4	R-Y BLACK CONTROL	<p>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.)</p>		—

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


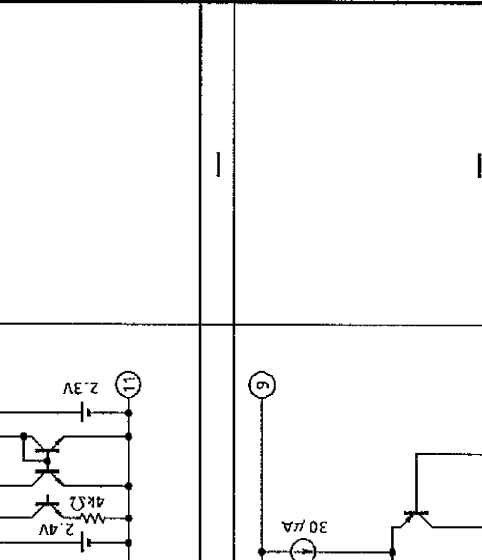
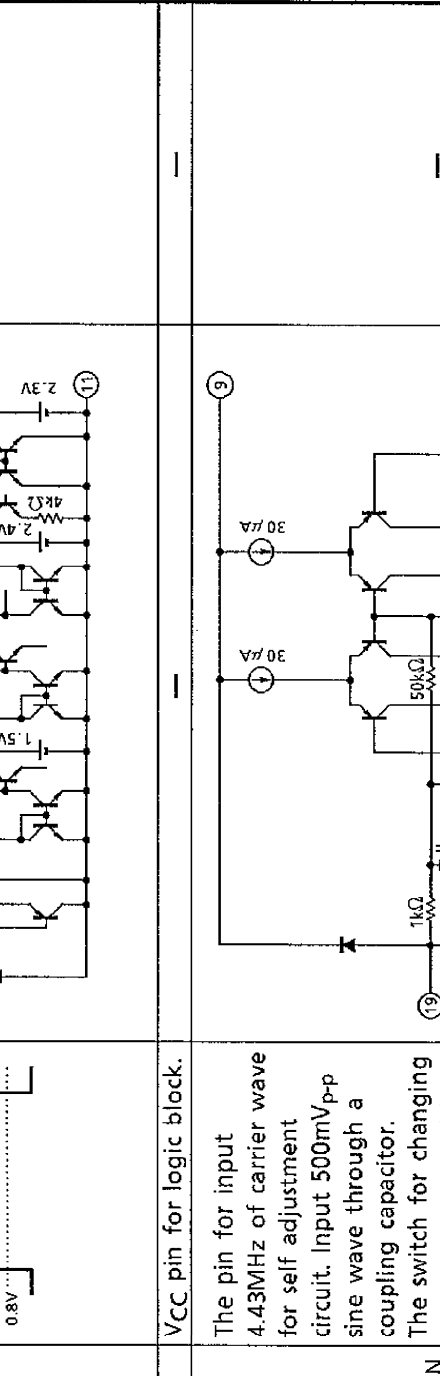


PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT	INPUT / OUTPUT SIGNAL
7	S-ID FILTER	<p>The pin for connecting the SECAM ident filter capacitor. A too big capacitor causes a time delay to get color signal on a picture, and a weak RF signal performance would get worth if the capacitor is too small.</p>		-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

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	FO-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	<p>The chroma signal input pin. Apply composite signal through 100pF of coupling capacitor. standard input signal level is 1V<sub>p-p</sub>.</p> <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).</p>		-
14	BELL-ADJ. FILTER	<p>The pin for connecting the filter capacitor for the bell filter <math>f_0</math>, 4.427MHz.</p> <p>A too big capacitor causes a time delay on bell filter <math>f_0</math> adjusting, and picture would be noisy if it is too small.</p>		-

PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT	INPUT / OUTPUT SIGNAL
15	Y IN	<p>The Y signal input pin. Apply the composite signal into this pin through a coupling capacitor. The standard input level is 1.0Vp-p.</p>		-
16	BELL CONTROL	<p>The pin for selecting the bell filter <math>f_0</math>.</p> <ul style="list-style-type: none"> <li><math>f_0 + 70\text{kHz}</math> : connect to VCC:</li> <li><math>f_0</math> : open</li> <li><math>f_0 + 35\text{kHz}</math> : connect to GND</li> </ul>		-

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

PIN No.	PIN NAME	FUNCTION	INTERFACE CIRCUIT	INPUT / OUTPUT SIGNAL
20	ID SW	<p>The switch pin for selecting the ID detection mode.</p> <p>H + V : connected to VCC                      Auto search (H, V, H + V) : opened                      H : connected to GND</p>		-
21	SECAM ID I/O	<p>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~VCC</p>		-

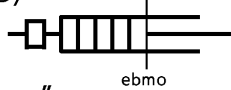
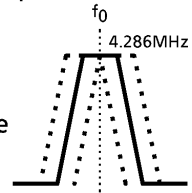
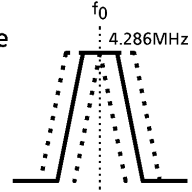
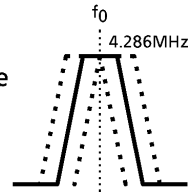
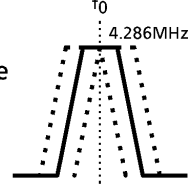
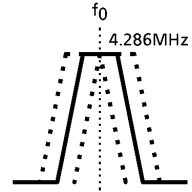
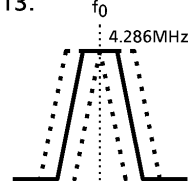
AC CHARACTERISTIC (Unless otherwise specified,  $V_{CC}=5V$  (9 & 18pin),  $T_a=25^{\circ}C$ )

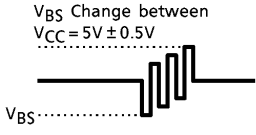
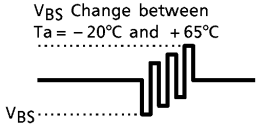
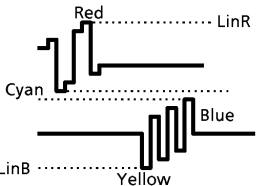
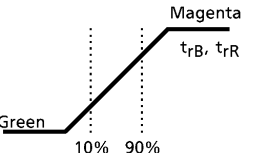
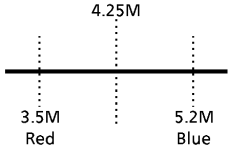
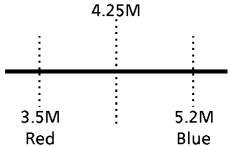
No.	ITEM	SYMBOL	TEST CIR-CUIT	TEST CONDITION	RATING			UNIT
					MIN.	TYP.	MAX.	
1	Bell Monitor Output Amplitude	ebmo	—	(Note 1)	120	190	310	mV (p-p)
2	Bell / Filter $f_0$	$f_{0B-C}$	—	(Note 2)	-23	0	23	kHz
3	Bell / Filter $f_0$ Variable Range	$f_{0B-H}$	—	(Note 3)	+40	+70	+100	kHz
		$f_{0B-L}$			+10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

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

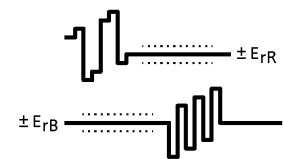
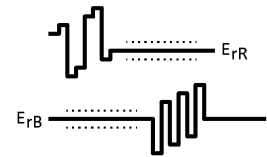


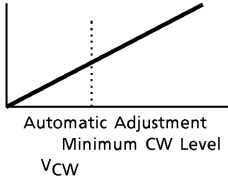
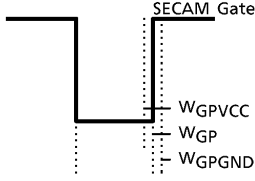
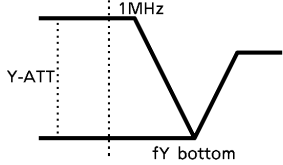
TEST CONDITION (Unless otherwise specified,  $V_{CC} = 5V$  (9 & 18pin),  $T_a = 25^{\circ}C$ )

NOTE	ITEM	TEST CONDITION
1	Bell Monitor Output Amplitude	(1) : Input a 75% color bar signal (200mV <sub>p-p</sub> 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 <sub>p-p</sub> 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 <sub>p-p</sub> 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 $f_0$ VCC Drift	(1) : Input a 20mV <sub>p-p</sub> 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 : " $\Delta f_{0BELV} = f_{0BEL5.5} - f_{0BEL4.5}$ " 
5	Bell / Filter $f_0$ Thermal Drift	(1) : Input a 20mV <sub>p-p</sub> 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 $-20^{\circ}C / +65^{\circ}C$ , that is $f_{0BEL-20} / f_{0BEL+65}$ . (5) : Calculate : " $\Delta f_{0BELT} = f_{0BEL-20} - f_{0BEL+65}$ " 
6	Bell / Filter Q	(1) : Input a 20mV <sub>p-p</sub> 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 : " $Q_{BEL} = (MAX - 3dB \text{ Band Width}) / f_{0BEL}$ ". 
7	Color Difference Output Amplitude	(1) : Input a 75% color bar (200mV <sub>p-p</sub> at R ID) into Pin 13. (2) : Measure the R-Y output amplitude at Pin 3, that is "VRS". (3) : Measure the B-Y output amplitude at Pin 5, that is "VBS". 

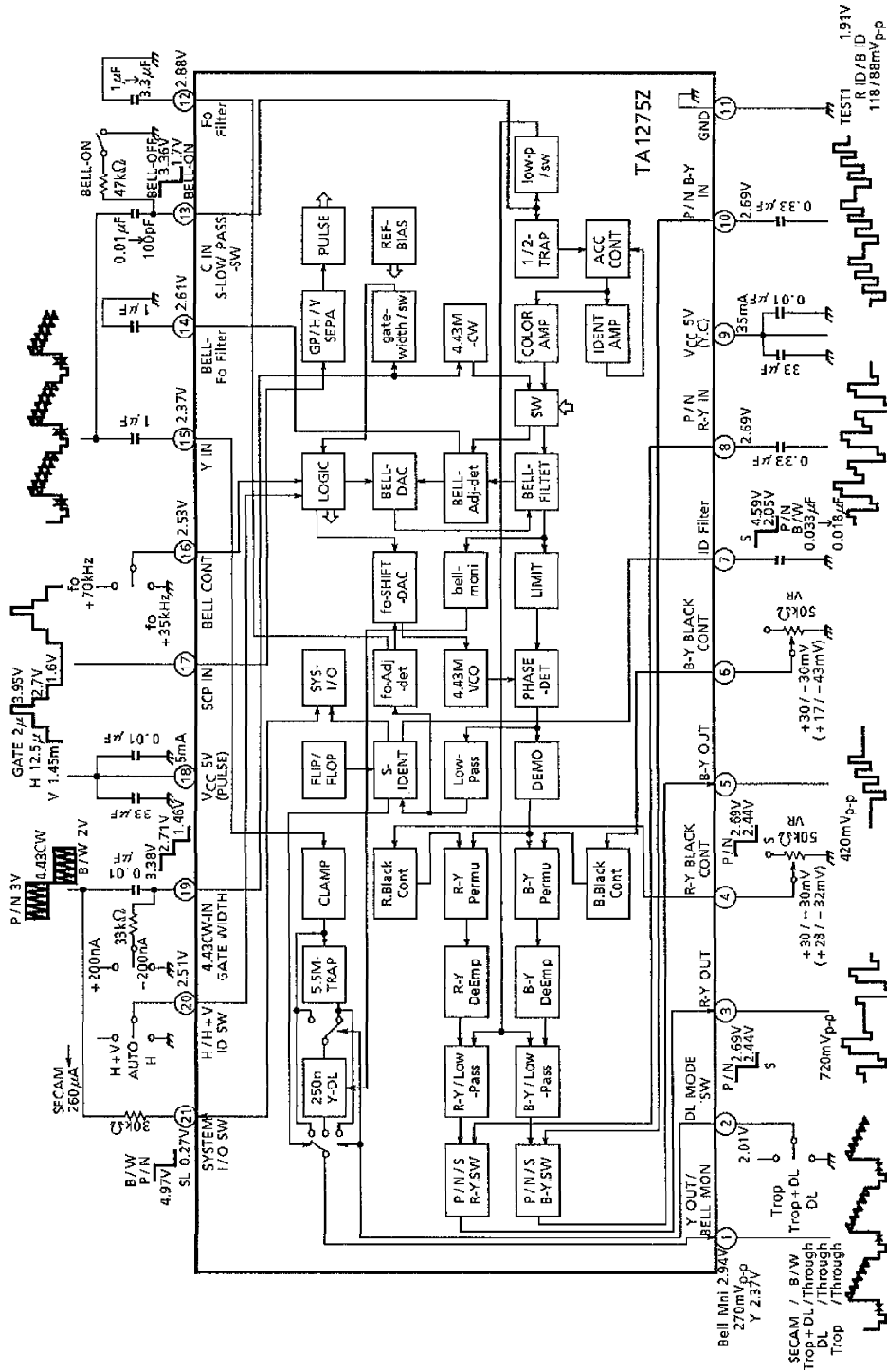
NOTE	ITEM	TEST CONDITION
8	Color Difference Relative Amplitude	Calculate : "R/B-S" = $V_{RS} / V_{BS}$ .
9	Color Difference S/N	(1) : Input a 200mV <sub>p-p</sub> non-modulated chroma signal into Pin 13. (2) : Measure the amplitude of noise on Pin 3, that is n <sub>R</sub> . (3) : Measure the amplitude of noise on Pin 5, that is n <sub>B</sub> . (4) : Calculate : "SNB-S" = $20 \log (2\sqrt{2V_{BS}} / n_B)$ "SNR-S" = $20 \log (2\sqrt{2V_{RS}} / n_R)$
10	Color Difference Output VCC Drift	(1) : Input a 75% color bar (200mV <sub>p-p</sub> at R ID) into Pin 13. (2) : Measure the B-Y output amplitude at Pin 5 when V <sub>CC</sub> is 5.5V/4.5V, that is V <sub>BS5.5</sub> / V <sub>BS4.5</sub> . (3) : Calculate : " $\Delta V_{BVH}$ " = $(V_{BS5.5} - V_{BS}) / V_{BS} * 100$ [%] " $\Delta V_{BVL}$ " = $(V_{BS4.5} - V_{BS}) / V_{BS} * 100$ [%] 
11	Color Difference Output Thermal Drift	(1) : Input a 75% color bar (200mV <sub>p-p</sub> 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 <sub>BS-20</sub> / V <sub>BS+65</sub> . (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 <sub>p-p</sub> at R ID) into Pin 13. (2) : Measure the amplitude between Black and Cyan/Red, that is V <sub>Cyan</sub> / V <sub>Red</sub> . (3) : Measure the amplitude between Black and Yellow/Blue, that is V <sub>Yellow</sub> / V <sub>Blue</sub> . (4) : Calculate : "LinR" = V <sub>Cyan</sub> / V <sub>Red</sub> "LinB" = V <sub>Yellow</sub> / V <sub>Blue</sub> 
13	Rising Time	(1) : Input a 75% color bar (200mV <sub>p-p</sub> 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 <sub>rR</sub> " / "t <sub>rB</sub> ". 
14	Demodulation Hold Range	(1) : Input a 200mV <sub>p-p</sub> , 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 <sub>RL</sub> ", and at which demodulates output disappears at Pin 5, that is "H <sub>BH</sub> ". 
15	Demodulation Capture Range	(3) : Input a 200mV <sub>p-p</sub> , 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 <sub>BH</sub> ", and at which demodulated output disappears at Pin 3, that is "H <sub>RL</sub> ". 

NOTE	ITEM	TEST CONDITION
16	Killer ON/OFF Level	(1) : Input a 75% color bar (200mV <sub>p-p</sub> 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 <sub>SK</sub> ". (3) : Increasing the input amplitude from 0mV <sub>p-p</sub> , measure the amplitude at which demodulated outputs appears at Pin 3 and Pin 5, that is "e <sub>SC</sub> ".
17	Carrier Remains on Demodulated Output	(1) : Input a 200mV <sub>p-p</sub> non-modulated chrome signal into Pin 13. (2) : Measure the amplitude of 4.25MHz signal at Pin 3, that is "CL <sub>RS</sub> ". (3) : Measure the amplitude of 4.406MHz signal at Pin 5, that is "CL <sub>BS</sub> ".
18	Black Level Offset	(1) : Input a 200mV <sub>p-p</sub> 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 <sub>FR</sub> " / "E <sub>RB</sub> ".
19	ID Voltage	(1) : Input a 75% color bar (200mV <sub>p-p</sub> at R ID) into Pin 13.
20	ID Current	(2) : Measure the voltage and input current of Pin 21, that are "V <sub>21color</sub> " and "I <sub>21color</sub> ". (3) : No input on Pin 13. (4) : Measure the voltage and input current of Pin 21, that are "V <sub>21B/W</sub> " and "I <sub>21B/W</sub> ".
21	System SW Threshold Level	(1) : Input a 200mV <sub>p-p</sub> , 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 <sub>21PIN</sub> ". (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 <sub>21S</sub> ".
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 <sub>3PIN</sub> " / "V <sub>5PIN</sub> ". (3) : Measure the DC voltage on Pin 3 / Pin 5 when Pin 21 is 0V, that is "V <sub>3S</sub> " / "V <sub>5S</sub> ".
23	R-Y B-Y Black Level Control Characteristics	(1) : Input a 75% color bar (200mV <sub>p-p</sub> 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 <sub>FR+</sub> / E <sub>FR-</sub> . (3) : Measure the difference between picture period and blanking period at Pin 5 when Pin 6 is 4V / 0V, that is E <sub>RB+</sub> / E <sub>RB-</sub> . (4) : Calculate : "ΔE <sub>FR+</sub> " = E <sub>FR+</sub> - E <sub>FR-</sub> "ΔE <sub>FR-</sub> " = E <sub>FR-</sub> - E <sub>FR+</sub> "ΔE <sub>RB+</sub> " = E <sub>RB+</sub> - E <sub>RB-</sub> "ΔE <sub>RB-</sub> " = E <sub>RB-</sub> - E <sub>RB+</sub>



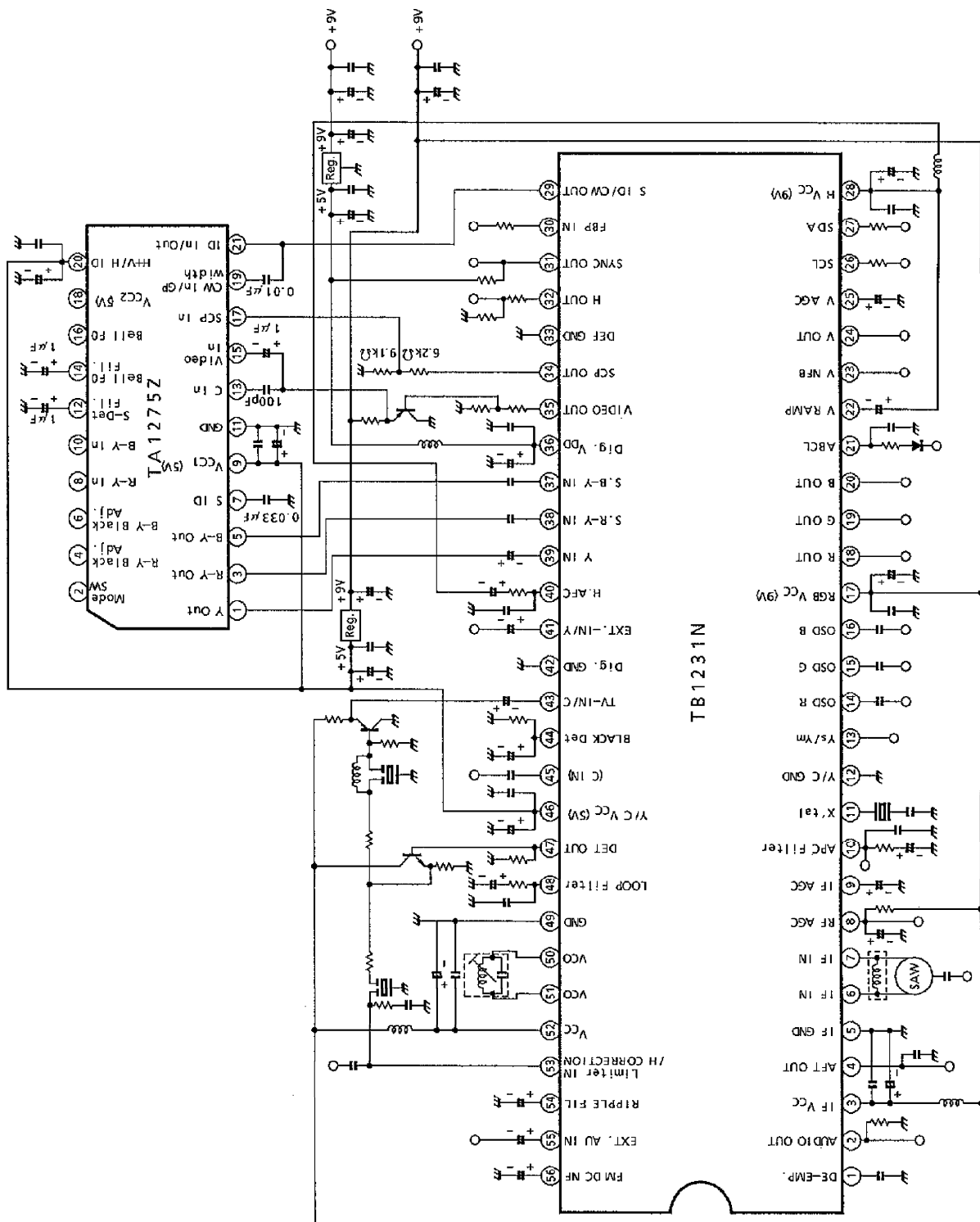
NOTE	ITEM	TEST CONDITION
24	Ext. Color Difference Gain	(1) : Input a 200mV <sub>p-p</sub> , 15kHz sine wave into Pin 8 and Pin 10. (2) : Supply 4V to Pin 21. (3) : Measure the output amplitudes at Pin 3 and Pin 5, that are V <sub>EXTR</sub> and V <sub>EXTB</sub> . (4) : Calculate : "G <sub>EXTR</sub>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

TEST CIRCUIT



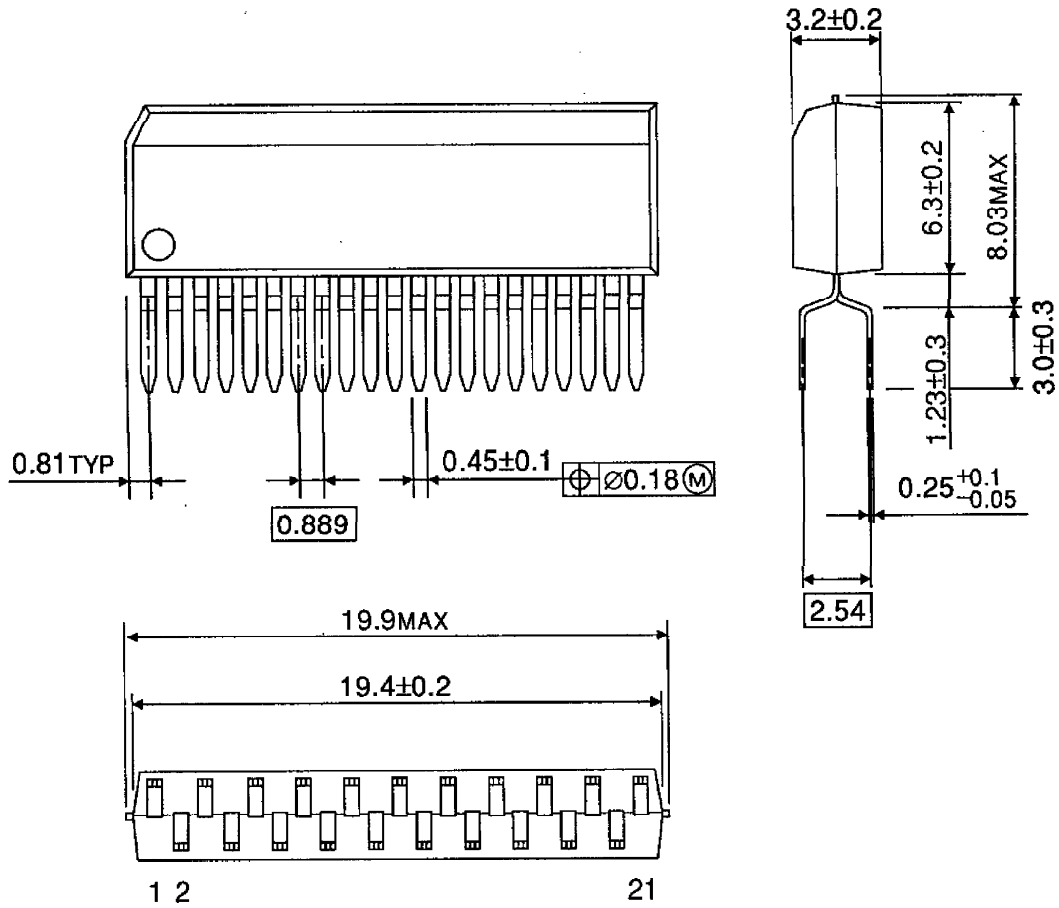
TA1275Z - 21

APPLICATION CIRCUIT



**OUTLINE DRAWING**  
SZIP21-P-0.89

Unit : mm



Weight : 1.0g (Typ.)