

TENTATIVE TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA1310AN

NTSC VIDEO, CHROMA, DEFLECTION, AND DISTORTION COMPENSATION IC (WITH YUV INTERFACE AND ACB)

TA1310AN is Video Chroma and deflection signal.
Processing IC for NTSC. On a 56-pin shrink DIP package.
TA1310AN has deflection distortion compensation.
TA1310AN uses an I²C Bus controls for controllings and settings.

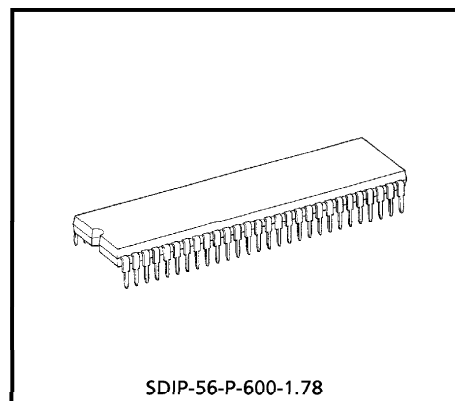
FEATURES

Video Signal Processing

- Built-in Y delay line
- Black stretch
- DC restoration ratio compensation
- Aperture controlled sharpness
- Output for velocity scan modulation (VSM)
- White peak suppression (WPS)

Chroma Signal Processing

- Built-in chroma BPF/TOF
- R-Y and B-Y outputs
- Color/BW situation output by read bus



Weight : 5.55 g (Typ.)

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Sync Signal Processing

- Counts down 32 f_H
- Dual AFC
- Vertical AGC
- HD and VD outputs
- Vertical frequency fixed mode
- Horizontal and Vertical position alignment
- DC outputs for vertical centering

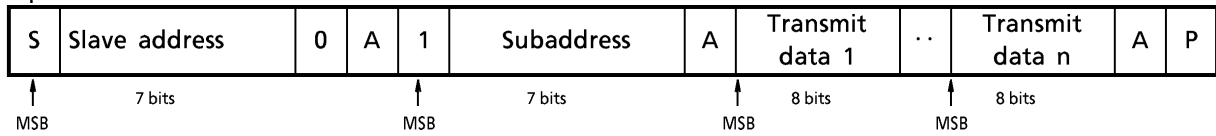
Text Signal Processing

- Analog RGB inputs
- Digital RGB inputs
- Halftone switch (Y_M)
- Cutoff and drive alignment
- YUV inputs
- ACB

Deflection Correction Function

- Horizontal and Vertical amplitude adjustment
- Vertical linearity correction
- Vertical S correction
- Vertical EHT correction
- E/W parabola correction
- E/W corner correction
- E/W trapezium correction

Option data transmit format



In the above method, the subaddresses are automatically incremented from the specified subaddress and data are set.

Purchase of TOSHIBA I²C components conveys license under the Philips I²C patent Rights to use these components in an I²C system, provided that the system conforms to the I²C standard specification as defined by Philips.

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	RATING	UNIT
Power Supply Voltage (5 V/9 V)	V _{CCmax}	7 / 12	V
Input Signal Voltage (5 V/9 V)	e _{inmax}	5 / 9	V _{p-p}
Power Dissipation (Note)	P _D	1920	mW
Power Dissipation Reduction Rate	1 / Qja	15.4	mW/°C
Operating Temperature	T _{opr}	- 20~65	°C
Storage Temperature	T _{stg}	- 55~150	°C

(Note) : See the figure below.

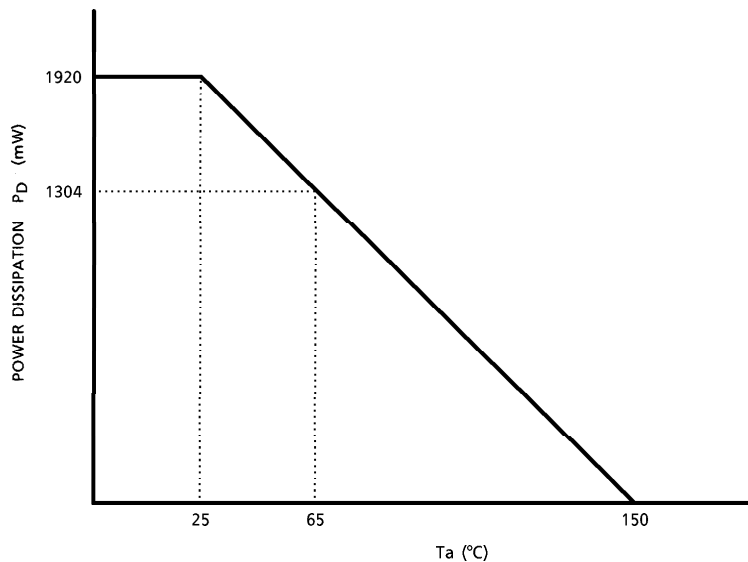


Fig. Temperature reduction curve for power dissipation

RECOMMENDED OPERATING POWER SUPPLY VOLTAGE

ITEM	DATA AND CONDITIONS	MIN	TYP.	MAX	UNIT
Power Supply Voltage	Pin 16, Pin 37	8.7	9.0	9.3	V
	Pin 51	4.8	5.0	5.2	
Pin 54 Y Input Signal Level	100% white, including synchronization	0.9	1.0	1.1	V _{p-p}
Pin 45 Chroma Input Signal Level	TOF : off, burst level	100	300	400	mV _{p-p}
	TOF : on, burst level	100	300	400	
Pin 38 Sync Signal Input Level	100% white, including synchronization	0.9	1.0	1.1	V _{p-p}

(Note) : Be sure to design the power supply so that when the power is Off, DEF V_{CC} is below 1.9 V.

ELECTRICAL CHARACTERISTICS

(V_{CC} = 5 V/9 V, DEF V_{CC} = 9 V, Ta = 25°C ± 3°C, unless otherwise specified)

Current dissipation

PIN NAME	SYMBOL	TEST CIR-CUIT	CURRENT DISSIPATION			UNIT	REMARKS
			MIN	TYP.	MAX		
5 V V _{CC}	I _{CC1}	—	32.50	38.34	45.30	mA	—
9 V V _{CC}	I _{CC2}	—	48.54	57.44	67.78	mA	—
DEF V _{CC}	I _{CC3}	—	19.70	23.31	27.50	mA	—

DC CHARACTERISTICS

Pin voltage

PIN	PIN NAME	SYM-BOL	MIN	TYP.	MAX	UNIT	PIN	PIN NAME	SYM-BOL	MIN	TYP.	MAX	UNIT
1	VSM out	V ₁	4.10	4.30	4.50	V	29	SCL	V ₂₉	4.90	5.00	—	V
2	GND1	V ₂	—	0.00	—		30	SDA	V ₃₀	4.90	5.00	—	
3	R in	V ₃	3.40	3.70	4.00		31	D. GND GND2	V ₃₁	—	0.00	—	
4	G in	V ₄	3.40	3.70	4.00		32	HD out	V ₃₂	0.15	0.20	0.25	
5	B in	V ₅	3.40	3.70	4.00		33	VD out	V ₃₃	4.90	5.00	5.10	
6	Ys/Ym in	V ₆	—	0.00	0.20		34	FBP in	V ₃₄	1.30	1.60	1.90	
7	OSD R in	V ₇	5.00	5.50	6.00		35	H out	V ₃₅	1.50	1.80	2.10	
8	OSD G in	V ₈	5.00	5.50	6.00		36	Sync out	V ₃₆	8.80	9.00	—	
9	OSD B in	V ₉	5.00	5.50	6.00		37	DEF V _{CC}	V ₃₇	—	9.00	—	
10	OSD Ys in	V ₁₀	—	0.00	0.20		38	Sync in	V ₃₈	2.80	3.00	3.20	
11	ABL in	V ₁₁	5.70	6.00	6.30		39	V Sep	V ₃₉	6.00	6.40	6.80	
12	VK out	V ₁₂	4.85	5.00	—		40	AFC1	V ₄₀	7.20	7.50	7.80	
13	R out	V ₁₃	1.20	1.60	2.00		41	32 fh VCO	V ₄₁	5.70	5.90	6.10	
14	G out	V ₁₄	1.20	1.60	2.00		42	Curve correction	V ₄₂	4.60	4.80	5.00	
15	B out	V ₁₅	1.20	1.60	2.00		43	DL out	V ₄₃	0.30	0.80	1.00	
16	V _{CC} (9 V)	V ₁₆	—	9.00	—		44	GND3	V ₄₄	—	0.00	—	
17	R Filter	V ₁₇	2.1	2.5	2.9		45	Chroma in	V ₄₅	1.59	1.77	1.95	
18	G Filter	V ₁₈	2.1	2.5	2.9		46	APC	V ₄₆	1.39	1.72	2.05	
19	B Filter	V ₁₉	2.1	2.5	2.9		47	B-Y out	V ₄₇	1.91	2.22	2.53	
20	IK in	V ₂₀	0.95	1.00	1.05		48	R-Y out	V ₄₈	1.91	2.22	2.53	
21	V Centering	V ₂₁	2.20	2.30	2.40		49	X'tal	V ₄₉	3.80	4.00	4.20	
22	EW FB	V ₂₂	3.90	4.30	4.70		50	CW out	V ₅₀	3.00	3.50	4.00	
23	EW out	V ₂₃	0.60	0.70	0.80		51	V _{CC} (5 V)	V ₅₁	—	5.00	—	
24	V out	V ₂₄	0.60	0.70	0.80		52	R-Y in	V ₅₂	2.85	3.00	3.15	
25	V NFB	V ₂₅	4.60	5.00	5.40		53	B-Y in	V ₅₃	2.85	3.00	3.15	
26	V AGC	V ₂₆	1.80	2.00	2.20		54	Y in	V ₅₄	3.50	3.65	3.90	
27	V RAMP	V ₂₇	4.00	4.20	4.40		55	Black peak detect	V ₅₅	3.20	3.70	3.80	
28	EHT, V i n	V ₂₈	4.80	4.90	5.00		56	DC restoration correction	V ₅₆	2.90	3.00	3.10	