SONY_®

CX20095A

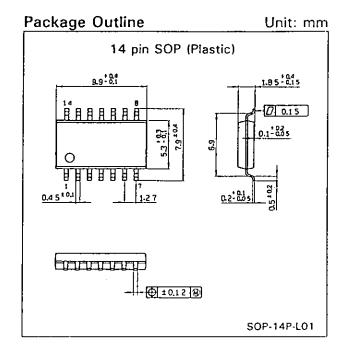
Video Output

Description

CX20095A is a bipolar IC designed as a driver of 75 Ω line (transmission and receiving line) used in the video signal system. It is comprised of a 75 Ω line drive, receiving amplifier and 6 dB amplifier for multi-purpose applications.

Features

- Low power supply voltage operation,
 Vcc = 5V (Typ.)
- Transmission/Receiving amplifier has a builtin sync chip clamp.
- Bilateral communication configuration is possible with one line.
- Driver amplifier and 6dB amplifier are provided ed with power-saving function.
- Simple superimpose is possible with the trans amplifier.



Structure

Bipolar silicon monolithic IC

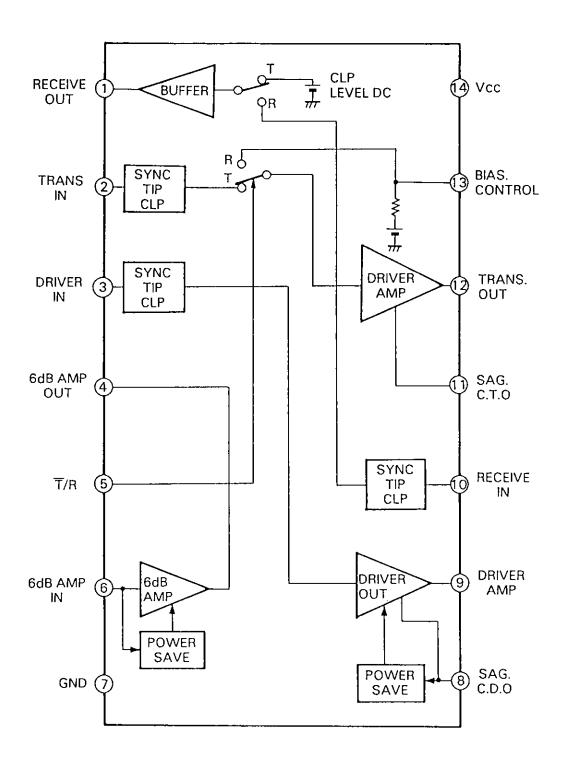
Absolute Maximum Ratings (Ta = 25°C)

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Supply voltage	Vcc	17	V
Operating temperature	Topr	-10 to +65	°C
Storage temperature	Tstg	-55 to +150	۰C
 Allowable power dissipation 	PD	500	mW

Recommended Operating Condition

 Supply voltage 	Vcc	4.8 to 5.2	V
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Block Diagram and Pin Configuration (Top view)



Pin Description

(See the Electrical Characteristics Test Circuit) DC voltage when no signal is input, Ta = 25 °C.

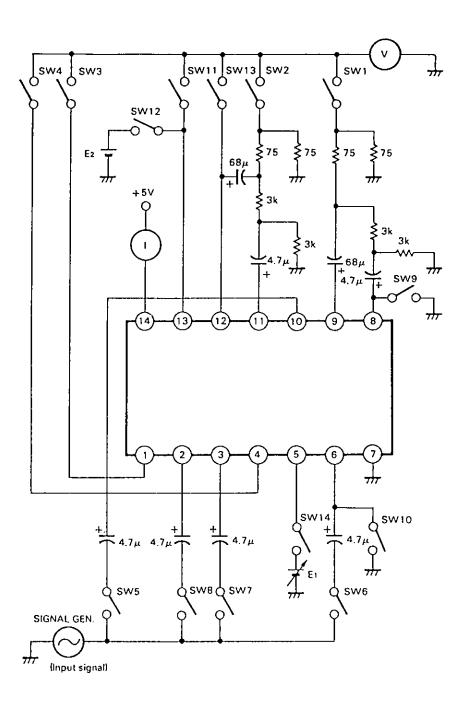
No.	Name	Voltage (V) standard value	Description
1	RECEIVE OUT	1.65	When pin 5 is at "H", the signal input from pin 10 is output with gain 0 dB. DC is output when pin 5 is at "L".
2	TRANS IN	1.28	Trans amplifier input: As sync chip clamp may result, a low impedance input is required.
3	DRIVER IN	1.28	Drive amplifier input: As sync chip clamp may result, a low impedance input is required.
4	6 dB AMP OUT	2.35	The signal input from pin 6 is output with gain 6 dB.
5	T/R	0	Mode switching pin Trans/Receive: Receive mode at "H" (over 4V) and Trans mode at "L" (less than 1V).
6	6 dB AMP IN	2.45	6 dB amplifier input: Input impedance more than approx. 10 k Ω , DC 2.4V
7	GND	0	
8	SAG.C.D.O.	1.29	The pin 9 sag is corrected by adding the sag component in the pin 9 output. Refer to Electrical Characteristics Test Circuit.
9	DRIVER OUT	1.08	Driver amplifier output: $75~\Omega$ line drive is output. The signal input from pin 3 is output with gain 6 dB.
10	RECEIVE IN	1.74	Receiving amplifier input: As sync chip clamp may result, a low impedance input is required.
11	SAG.C.T.O.	1.30	The pin 12 sag is corrected by adding the sag component in the pin 12 output. Refer to Electrical Characteristics Test Circuit.
12	TRANS. OUT	1.10	Trans amplifier output: The signal input from pin 2 when pin 5 is at "L" is output to the 75 Ω line with a gain of 6 dB. A DC voltage determined at pin 13 is output when pin 5 is at "H".
13	BIAS. CONTROL	2.13	When pin 5 is at "H", its voltage is varied to vary the pin 12 output (DC) in turn. By linking with pin 5, simple superimpose can be possible in the pin 12 output. (In this case, the pin 1 output is affected.)
14	Vcc	5.0	+ 5.0V

Ta = 25°C, Vcc = 5.0V, See the Electrical Characteristics Test Circuit

Electrical Characteristics

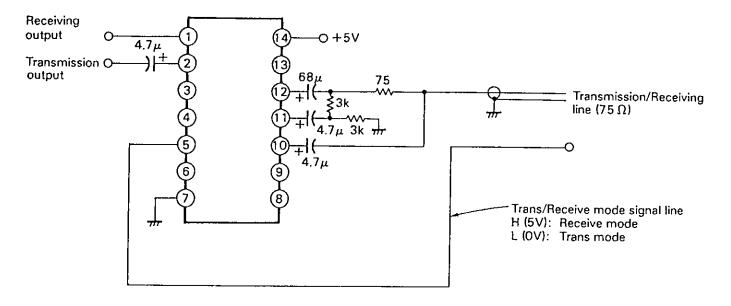
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2	Taci ton	Те po	1000	j				-	Test i	Test condition	tion							Te sy				
į	1121 302	st int	input condition	-	2	8	4	5	6 7	7 8	6	2	=	12	-13	14	Remark	st mbol	.ċ ∑	Typ.	Typ. Max.	Chit
-	Consumption current	-																₽	7.5	=	15	Ą
2	Power saving	_					-				ŏ	ŏ	<u> </u>					ors	4.5	6.5	6	ΨE
က	Trans amp gain	>	500кнг, 1Vp-р		- Z					NO						NO	E1: Less than 1V (for 1Vp-p input)	5	-0.5	0	+0.5	88
4	Trans dynamic range	>	16kHz. Square wave		N O					Š	7					N O	E1: Less than 1V (input equivalent)	٥	4.			۸-q-
5-a	Trans bias control	>											ő			NO O	E1: Measured value over 4V = A	c:>	2.0	2.15	2.3	>
5-b	Trans bias control	>						·-							Ž O	N O	E1: Measured value over 4V = 8	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	2.65	2.75	2.9	>
ပ္	Trans bias control	>	E ₂ = 2.3V				·		3,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					N O	N O	NO NO	20 log =	ე 8 ე	5.3	6.0	8.8	dB dB
9	Receiver amp gain	>	500кнг, 1Vp-р			N O		NO								N O	E1: Over 4V (for 1Vp-p input)	5	-0.5	0	+0.5	gB
7	Receiver dynamic range	>	16kHz, Square wave			NO		NO			·					N O	E1: Over 4V (input equivalent)	ě.	1.7			φ-d _A
∞	Driver amp gain	<u></u>	500кнг, 1Vp-р	N O					0	NO							For input 1Vp-p	в	- 0.5	0	+0.5	쁗
თ	Driver dynamic range	>	16kHz, Square wave	NO				<u></u>	0	N O		 					Input equivalent	8	1.4			d-d/
2	6dB amp gain	>	500кнг, 1Vp-р				NO		NO				_				For input 1Vp-p	હ	5.5	6.0	6.5	89
Ξ.	6dB dynamic range	>	16kHz, 1.4Vp-p Square wave				NO		NO								1.4Vp-p	ď	2.6	2.8	3.0	V - 0
12	Trans receiving leakage	>	4MHz 0.7Vp-p			 0				ő	7				<u> </u>	NO O	E1: Over 4V (for 0.7Vp-p) (4MHz component)	Ĕ			1 40	99

Electrical Characteristics Test Circuit

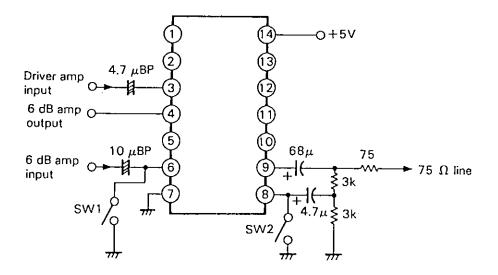


Application Circuit

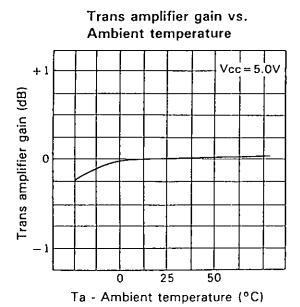
Transmission and receiving reference circuit (Trans amplifier, Receive amplifier)

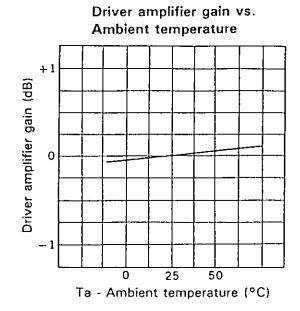


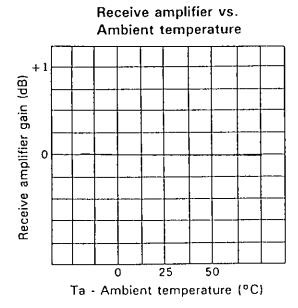
Driver amplifier, 6 dB amplifier external reference circuit

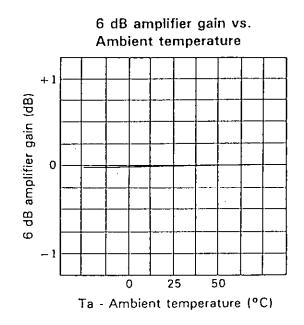


SW1: 6 dB amp power saving mode when switched on.SW2: Driver amp power saving mode when switched on.









Note) Gain at 25°C is assumed to be 0 dB.