

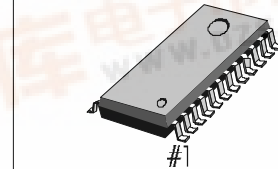
KA2195D

RGB ENCODER FOR NTSC

RGB ENCODER

The KA2195D is a monolithic integrated circuit designed for RGB encoder of video system. This device contains matrix of R-Y/B-Y, modulator, pulse generator, regulator and built in BPF of chroma and delay line of luminance. The KA2195D is suitable for video equipment

24 SOP



FUNCTION

- Regulator
- Mixer of R-Y, B-Y
- Modulator
- Pulse generator
- Audio buffer
- X-tal oscillator
- Clamp circuit
- BPF & D.L circuit

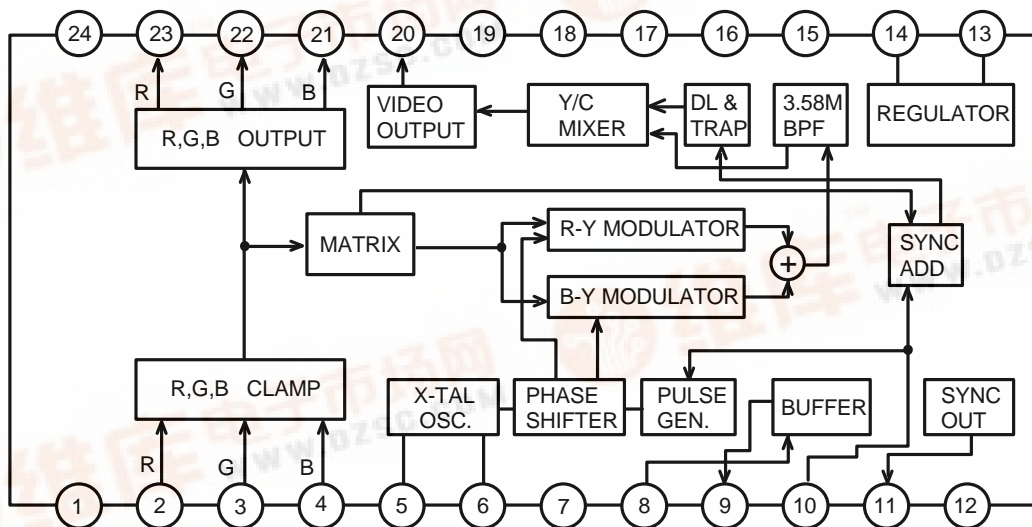
ORDERING INFORMATION

Device	Package	Operating Temperature
KA2195D	24SOP	-20~+70°C

FEATURE

- Lower operating voltage: Vcc= 5V
- Stabilized bias condition in regulator
- Available only NTSC system
- Included 75 ohm driver (RGB Output, composite video output, composite sync. output)
- Sub-carrier frequency using X-tal and available external input
- Include BPF & delay line
- Minimized external components
- Audio buffer circuit
- R-Y, B-Y modulator

BLOCK DIAGRAM



PIN CONFIGURATION

KA2195D**RGB ENCODER FOR NTSC**

Pin No.	DESCRIPTION	Pin No	DESCRIPTION
1	GND 1	13	REGULATOR CURRENT SINK
2	RED INPUT	14	2V REGULATOR OUTPUT
3	GREEN INPUT	15	N.C
4	BLUE INPUT	16	N.C
5	X-TAL OUT	17	N.C
6	X-TAL IN	18	N.C
7	NTSC S/W(VCC)	19	VCC 2
8	AUDIO IN	20	COMPOSITE VIDEO OUTPUT
9	AUDIO OUT	21	BLUE OUTPUT
10	COMPOSITE SYNC INPUT	22	GREEN OUTPUT
11	COMPOSITE SYNC OUTPUT	23	RED OUTPUT
12	VCC 1	24	GND 2

* VCC 1,GND 1: EXCEPT OUTPUT STAGE

* VCC 2, GND 2: OUTPUT STAGE

ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

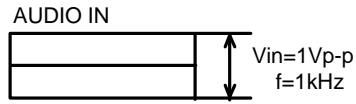
Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	10	V
Power dissipation	P_D	1250	mW
Operating Temperature	T_{OPR}	-20~+70	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS($T_A=25^{\circ}\text{C}$, $V_{CC}=5\text{V}$)

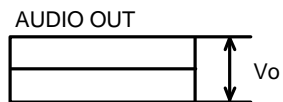
Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Supply Current 1	I_{CC1}	No Signal input	20	27	32	mA
Supply Current 2	I_{CC2}	No Signal input	5.6	7.6	11	mA
R Output Voltage	V_O	$R_{IN}=1 V_{P-P}$	0.64	0.71	0.78	V_{P-P}
G Output Voltage	V_O	$G_{IN}=1 V_{P-P}$	0.64	0.71	0.78	V_{P-P}
B Output Voltage	V_O	$B_{IN}=1 V_{P-P}$	0.64	0.71	0.78	V_{P-P}
R Frequency Response	f_c	R, G, B $f = 200 \text{ KHz}$ -dB POINT	5	-	-	MHz
G Frequency Response	f_c		5	-	-	MHz
B Frequency Response	f_c		5	-	-	MHz
Sync. Level	V_{OS}	Condition:R, G, B and C Sync. input Measure Composite Video Output	0.26	0.29	0.33	V
R 100% Y Level	V_O		0.19	0.21	0.25	V
G 100% Y Level	V_O		0.38	0.42	0.48	V
B 100% Y Level	V_O		0.07	0.08	0.09	V

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
While 100% Y level	V_O	Composite Video Output	0.64	0.71	0.82	V
Differential Gain	DG		-	-	3.0	%
Differential Phase	DP		-	-	3.0	deg
Burst Level	V_{OB}		0.22	0.29	0.34	V_{P-P}
R Chroma Ratio	R/BN		2.8	3.15	3.5	times
G Chroma Ratio	G/BN		2.65	2.95	3.25	times
B Chroma Ratio	B/BN		2.01	2.24	2.57	times
R Phase	SR		94	104	114	deg
G Phase	SG		231	241	251	deg
B Phase	SB		337	347	357	deg
Burst Width	T_{WB}		2.5	2.75	3.6	us
Burst Position	T_{DB}		0.45	0.5	0.75	us
Carrier Leakage	VI		-	-	30	mV_{P-P}
C Sync. Output Level	V_{OS}		0.2	0.29	0.4	V_{P-P}
Audio Buffer Gain	G_A	$1V_{P-P}, f=1KHz$	-1.0	0	1.0	dB
Audio Freq. Response	F_A	-3dB	30	-	-	KHz
Audio Distortion	THD	$1V_{P-P}, f=1KHz$	-	-	1.0	%

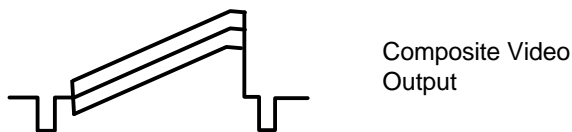
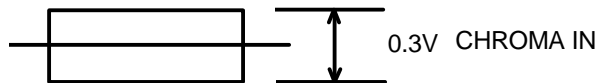
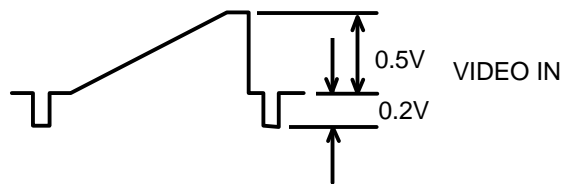
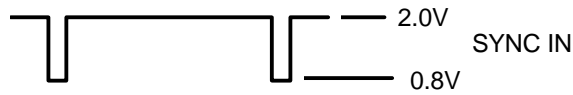
* AUDIO OUT



* SYNC. OUT

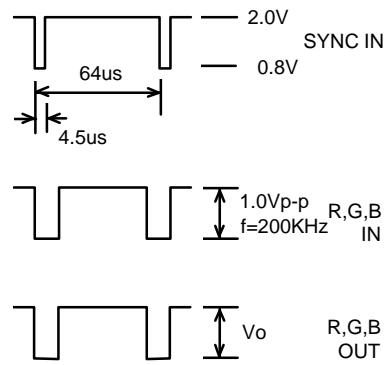


* COMPOSITE VIDEO OUT

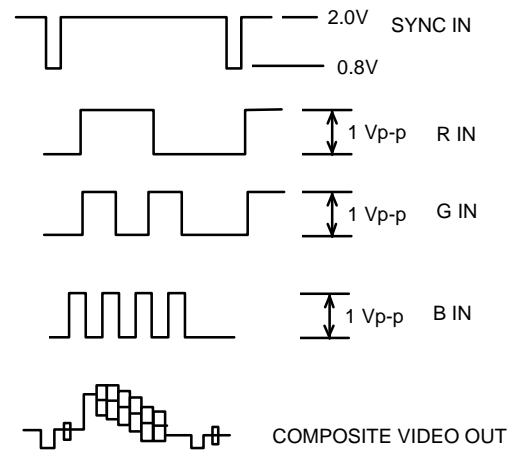


TEST WAVEFORM

* R,G,B OUT



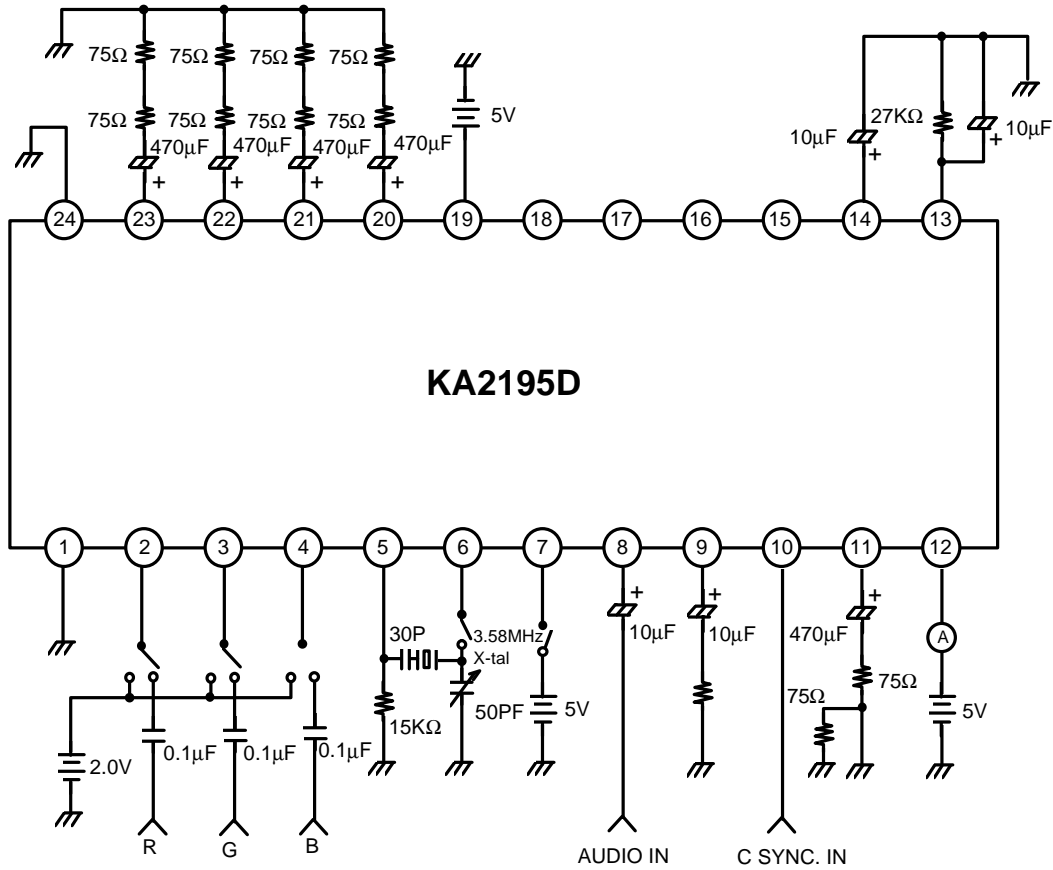
* COMPOSITE VIDEO OUT



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TEST CIRCUIT



KA2195D

RGB ENCODER FOR NTSC

APPLICATION CIRCUIT

