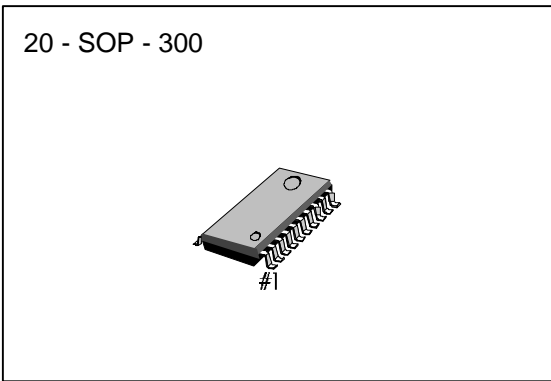


KA7307D

CDS/AGC

GENERAL DESCRIPTION

The KA7307 is a bipolar monolithic integrated circuit for CCD Color Video Camera, and then it provides functions of Correlated Double Sampling, Automatic Gain Control, Window Function, and Iris Amplifier Gain Control.



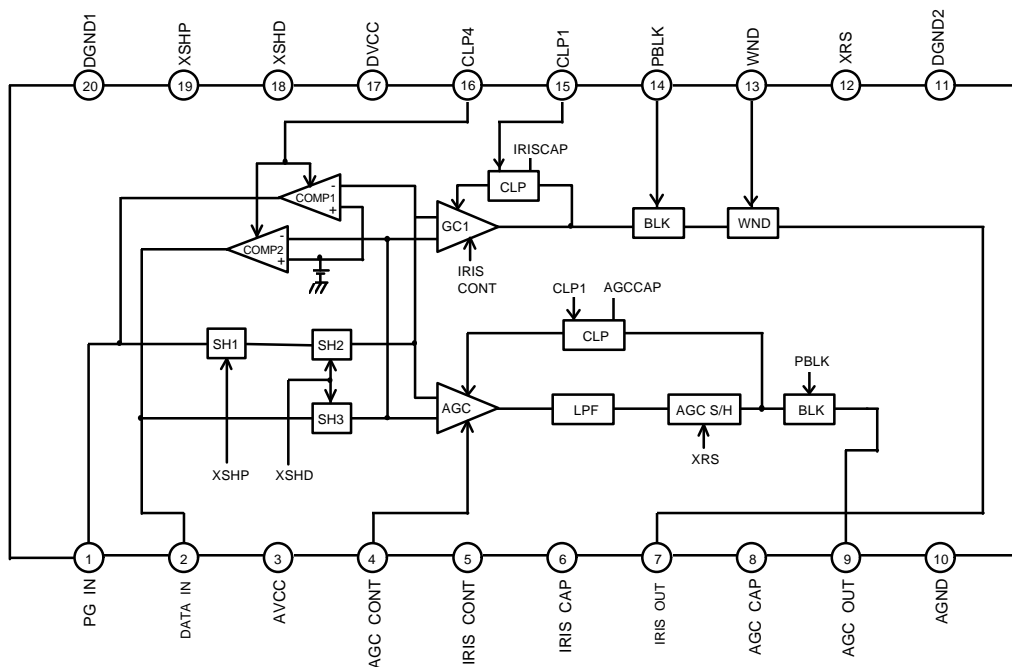
FEATURES

- . Correlated Double Sampling (CDS)
- . Automatic Gain Control (AGC)
- . Low-pass-filter and Sample-and-Hold circuit after AGC for external A/D converters
- . Window Function
- . Iris Amplifier Gain Control
- . + 5V Single power supply
- . Low power < 330mW

ORDERING INFORMATION

Device	Package	Operating Temperature
KA7307D	20-SOP-300	- 20°C ~ + 75 °C

BLOCK DIAGRAM



PIN DESCRIPTIONS

No.	Symbol	I/O	Pin Voltage	Description
1	PG IN	I	Black Level 2.3V ~ 2.9V	CCD Signal Input
2	DATA IN	I	(Typ. : 2.6V)	
3	AVCC	I	Typ. : 5.0V	Supply Voltage
4	AGC CONT	I	OV ~ 5V	AGC Gain Control
5	IRIS CONT	I	GAIN CONTROL	IRIS Gain Control
6	IRIS CAP	O	Black Level 2.05V ~ 2.55V (Typ. : 2.27V)	A Pin is used to attach IRIS Clamp Capacitor
7	IRIS OUT	O	Black Level 1.2V ~ 1.7V (Typ. : 1.45V)	IRIS Signal Output Signal Max. : > 2.0Vp-p
8	AGC CAP	O	Black Level 2.15V ~ 2.65V (Typ. : 2.37V)	A Pin is used to attach IRIS Clamp Capacitor
9	AGC OUT	O	Black Level 1.2V ~ 1.7V (Typ. 1.45V)	AGC Signal Output Signal Max. : > 2.0Vp-p
10	AGND	O	-	Analog Ground
11	DGND2	O	-	Digital Ground 2
12	XRS	I	 H : > 4V L : < 1V	Sample - and - Hold Sig. Input (Active Low)
13	WND	I	 H : > 4V L : < 1V	High Speed Pulse Input Pin for WINDOW (Active Low)
14	PBLK	I		Pre - Blanking Pulse Input Pin (Active Low)
15	CLP1	I	 H : > 4V L : < 1V	Clamping Pulse 1 Input Pin (Active High)
16	CLP4	I		Clamping Pulse 4 Input Pin (Active High)
17	DVCC	I	Typ. : 5.0V	Supply Voltage
18	XSHD	I	 H : > 4V L : < 1V	High Speed Pulse Input
19	XSHP	I		Pin for Sampling / Hold (Active Low)
20	DGND1	O	-	Digital Ground 1

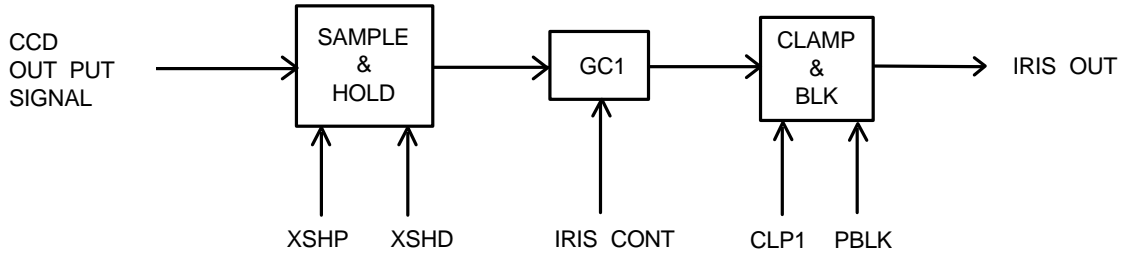
ABSOLUTE MAXIMUM RATINGS($V_{cc} = 5.0\text{ V}$, $T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Value	Unit
Supply Voltage	V_{cc}	7	V
Input Voltage	V_i	4.75 ~ 5.25	V
Power Dissipation	P_d	530	mW
Operating Temperature	T_{opr}	- 20 ~ + 75	$^\circ\text{C}$
Storage Temperature	T_{stg}	- 65 ~ + 150	$^\circ\text{C}$

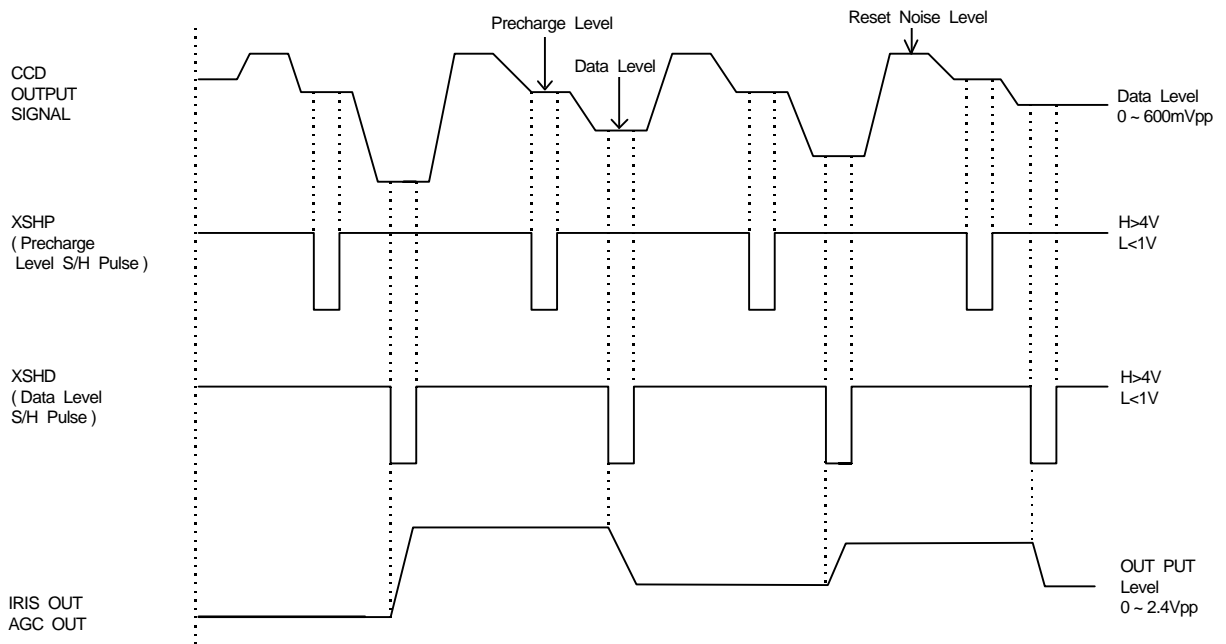
ELECTRICAL CHARACTERISTICS($V_{cc} = 5.0\text{ V}$, $T_a = 25^\circ\text{C}$)

Characteristics		Symbol	Test Condition	Min	Typ	Max	Unit
Supply Current		ICC	ALL PIN : OPEN	23	41	59	mA
GC1	CONT MIN	GC1C MIN	Iris out / Data in Iris CONT = 0.0V, WND >4.0V	-	- 6	- 4	dB
	CONT MAX	GC1C MAX	Iris out / Data in Iris CONT = V_{cc} , WND > 4.0V	14	18	-	dB
Iris out maximum voltage swing		CDR	$D_{ta\ in} = 400\text{mVp-p}$ GC1 Gain max.	2.0	2.5	-	V
CG1 Amp. CMRR		CMR1	15.75KHz	-	- 50	- 36	dB
AGC	CONT MIN	AGC1 MIN	AGC out / Data in AGC CONT = 0.0V	-	6	8	dB
	CONT MAX	AGC1 MAX	AGC out / Data in AGC CONT = V_{cc}	38	41	-	dB
AGC Amp. CMRR		CMRA	15.75KHz	-	- 50	- 36	dB
AGC out maximum voltage swing		ADR	$D_{ta\ in} = 100\text{mVp-p}$ AGC Gain max.	2.0	2.5	-	V

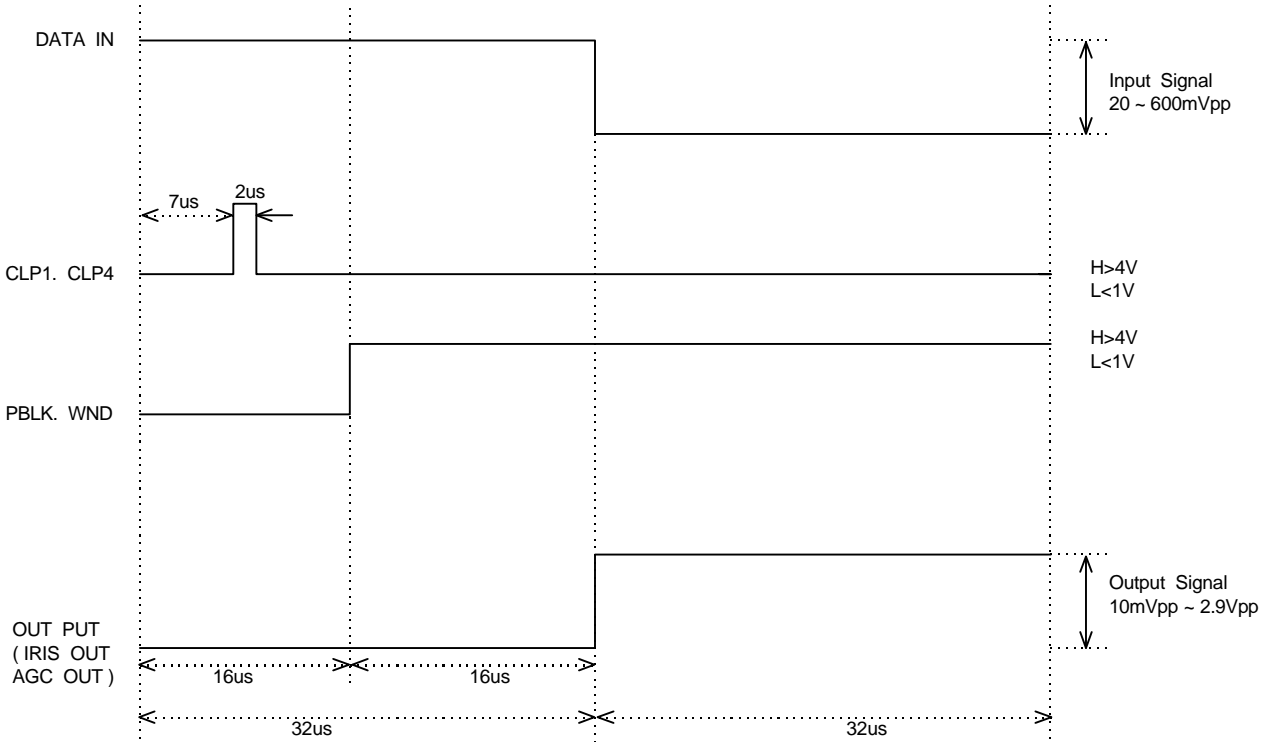
OPERATING PRINCIPLES & METHODE



1. SIGNAL FORMAT



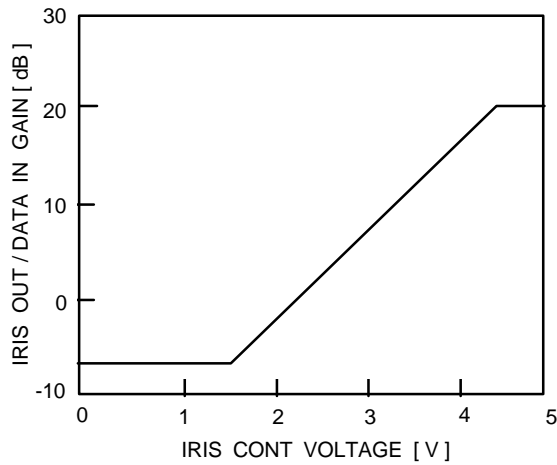
2. TIMING CHART FOR TESTING



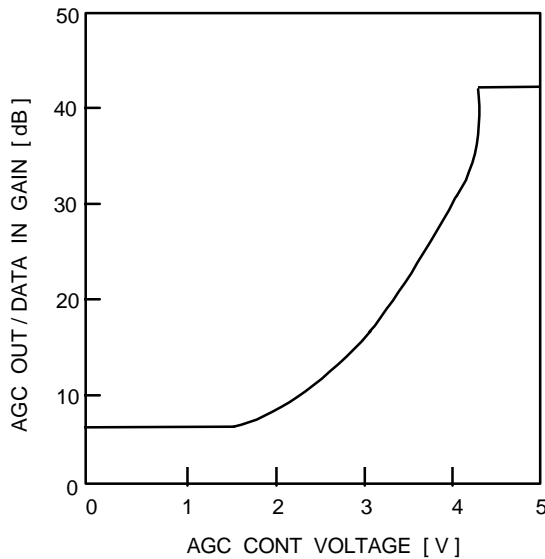
CHARACTERISTICS GRAPH

(Standard Control Characteristics ; (Vcc = 5.0 V , Ta = 25°C)

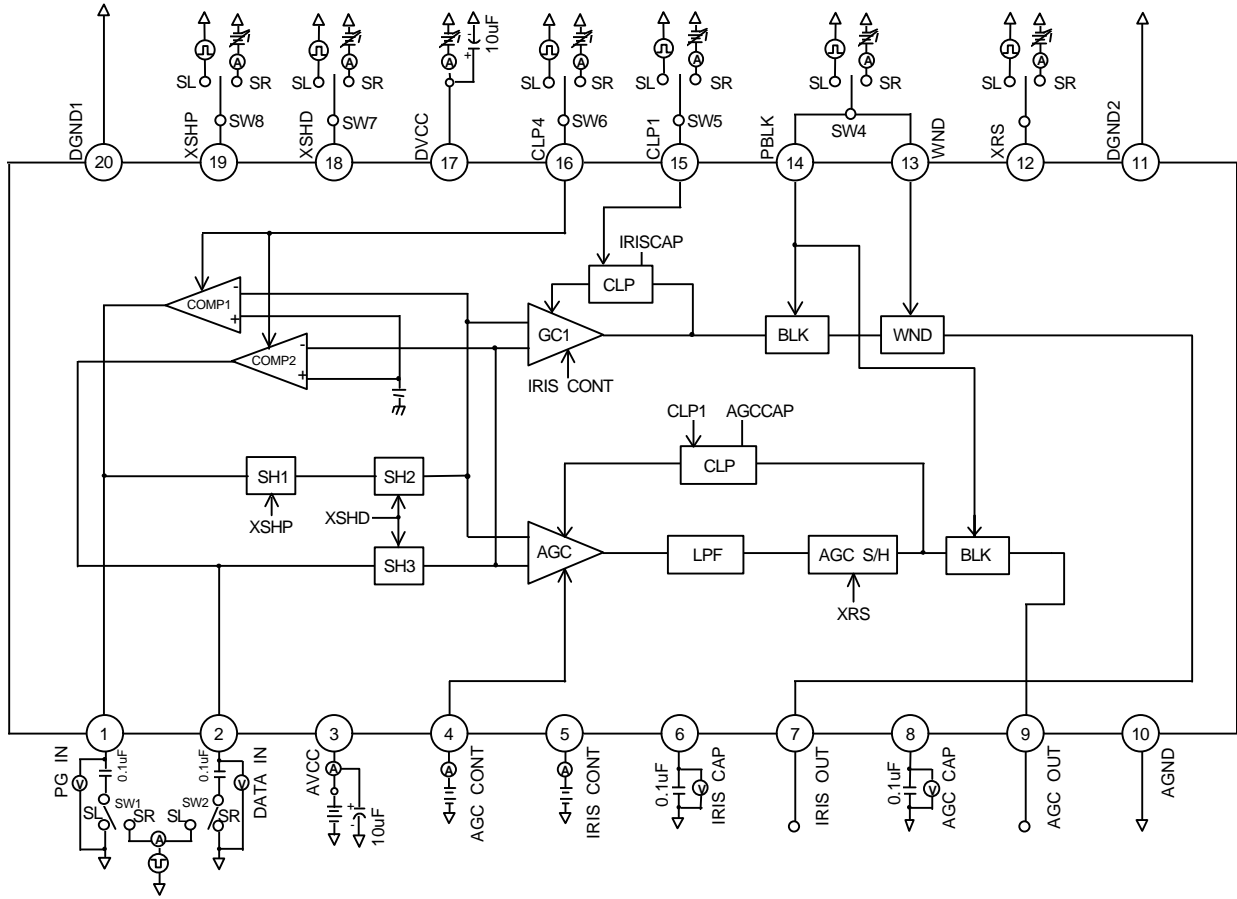
Input Control Voltage : 0 ~ 5V
Output Gain : - 6dB ~ 18dB



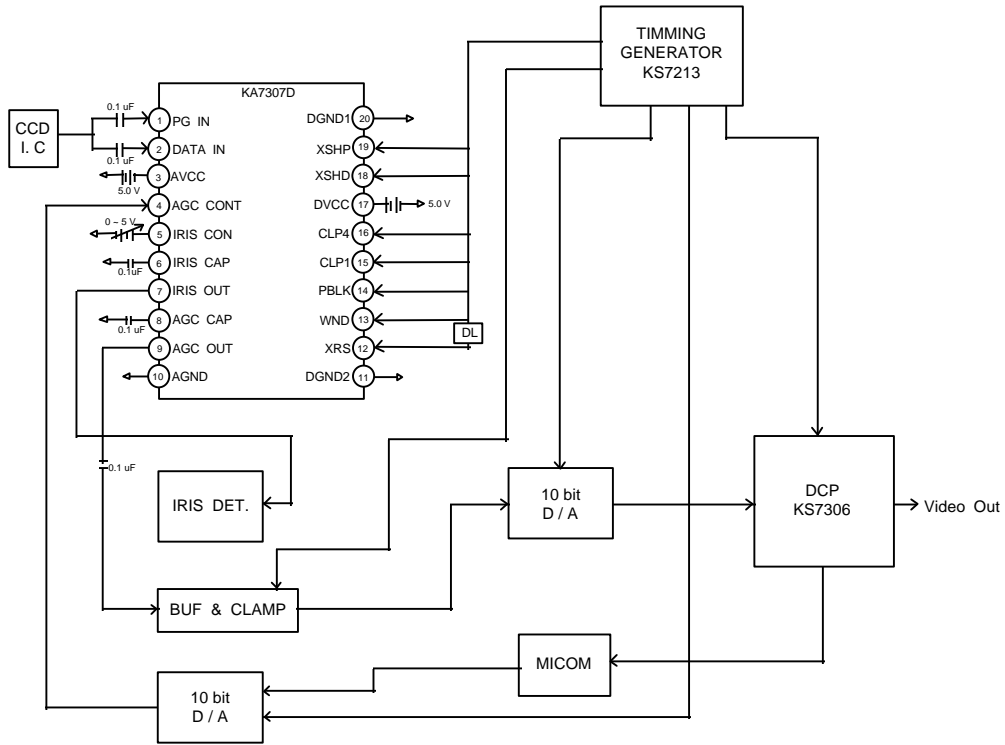
Input Control Voltage : 0 ~ 5V
Output Gain : 6dB ~ 41dB



TEST CIRCUIT



APPLICATION CIRCUIT



PACKAGE DIMENSION

20-SOP-300

unit: mm

