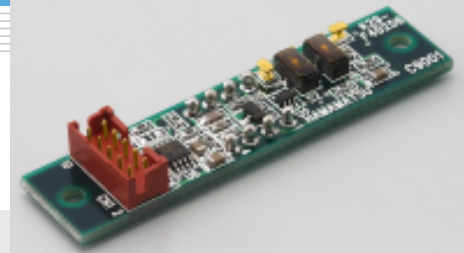


Driver circuit for CMOS linear image sensor C9001

Compact, easy-to-use driver circuit



C9001 is a driver circuit designed for S8377/S8378 series CMOS linear image sensors. C9001 operates a linear image sensor by just inputting two signals (clock and start) and a single +5 V supply. C9001 also outputs a trigger signal for A/D conversion so the external circuit configuration can be simplified. C9001 does not include an image sensor, so select the desired image sensor and order it separately.

Features

- Single power supply (+5 V) operation
- Operation with two input signals (clock and start)
- Compact: 50 × 12 mm
- Trigger signal output for A/D conversion

Applications

- Various types of image acquisition
- Optical detection equipment

■ Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Value	Unit
Supply voltage	Vcc	+7	V
Digital input voltage	-	V	V
Operating temperature	Topr	0 to +50 *1	°C
Storage temperature	Tstg	0 to +70 *1	°C

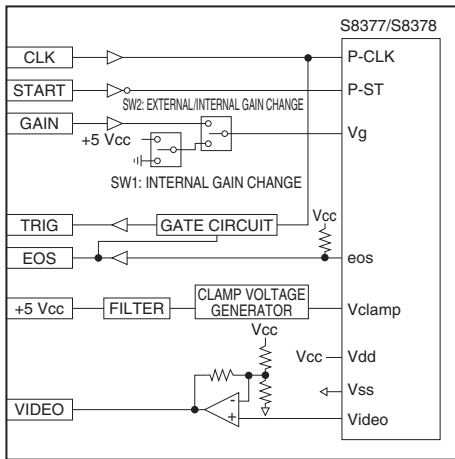
*1: No condensation

■ Specifications

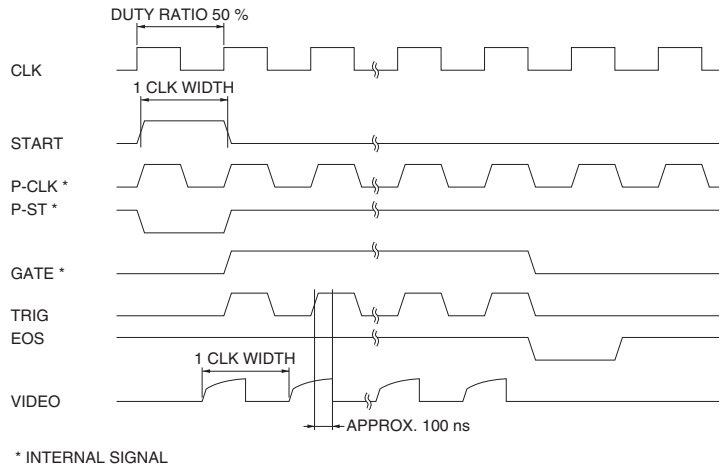
Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	+Vs	4.9	5.0	5.2	V
Current consumption	+Is	-	20	30	mA
Digital input	High level	V _{IH}	3.8	-	V
	Low level	V _{IL}	0	-	1.6
Start pulse width	T _{pwst}	1/2 × f _{CLK}	1/f _{CLK}	2/f _{CLK}	ns
Clock frequency	f _{CLK}	0.1	-	500	kHz
Digital rise/fall times	t _{TLH} /t _{THL}	-	14	25	ns
Date rate	f _V	0.1	-	500	kHz
Offset output	V _{offset}	-	0.5	-	V
VIDEO saturation output *2	V _{ast}	3.3	-	4.0	V

*2: From offset value.

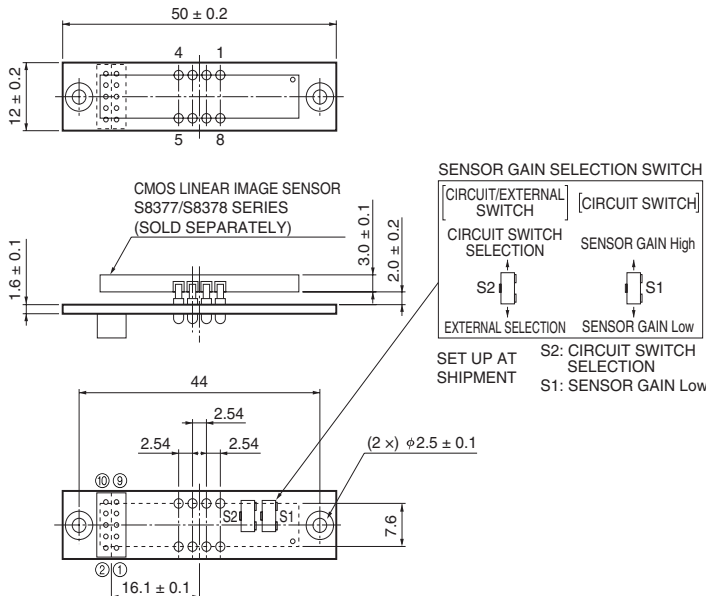
■ Block diagram



■ Timing chart



■ Dimensional outline (unit: mm)



KACCC0175EA

■ Pin assignment of I/O connector [Connector: LY20-10P-DTI-P1 (made by JAE)] *3

Pin No.	Terminal name	I/O	Description
①	CLK	I	Sensor scan synchronization signal. The sensor is scanned in synchronization with this signal.
②	START	I	Sensor scan start signal. The pulse interval of these start signals determines the sensor integration time.
③	GAIN	I	Sensor gain setting. Low gain is selected at High level, and high gain at Low level. (External gain setting is enabled with S2.)
④	EOS	O	Sensor end-of-scan signal. Negative logic
⑤	TRIG	O	A/D conversion timing signal. The number of output pulses is equal to the number of pixels.
⑥	GND		Circuit ground
⑦	Vcc	I	+5 V power supply line
⑧	GND		Circuit ground
⑨	VIDEO	O	Video output signal. Positive polarity
⑩	A.GND		Video signal ground

*3: A mating connector is supplied with C9001 along with toa cable (30 cm, preassembled).

HAMAMATSU

Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications are subject to change without notice. No patent rights are granted to any of the circuits described herein. ©2002 Hamamatsu Photonics K.K.

HAMAMATSU PHOTONICS K.K., Solid State Division

1126-1 Ichino-cho, Hamamatsu City, 435-8558 Japan, Telephone: (81) 053-434-3311, Fax: (81) 053-434-5184, <http://www.hamamatsu.com>

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, P.O.Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1) 908-231-0960, Fax: (1) 908-231-1218

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49) 08152-3750, Fax: (49) 08152-2658

France: Hamamatsu Photonics France S.A.R.L.: 8, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: 33-(1) 69 53 71 00, Fax: 33-(1) 69 53 71 10

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, United Kingdom, Telephone: (44) 1707-294888, Fax: (44) 1707-325777

North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171 41 Solna, Sweden, Telephone: (46) 8-509-031-00, Fax: (46) 8-509-031-01

Italy: Hamamatsu Photonics Italia S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39) 02-935-81-733, Fax: (39) 02-935-81-741

Cat. No. KACC1079E01
Jul. 2002 DN