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

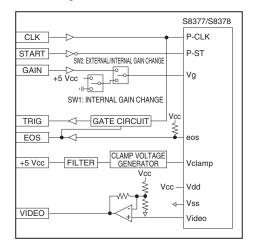
Specifications

Parameter		Symbol	Min.	Тур.	Max.	Unit
Supply voltage		+Vs	4.9	5.0	5.2	V
Current consumpt	ion	+ls	- 20 30 3.8 - V		mA	
Digital input	High level	VIH	3.8	-	V	V
	Low level	VIL	0	-	1.6	
Start pulse width		Tpwst	1/2 × fclk	1/fclk	2/fclk	ns
Clock frequency		fclk	0.1	-	500	kHz
Digital rise/fall times		tTLH/tTHL	-	14	25	ns
Date rate		fV	0.1	-	500	kHz
Offset output		Voffset	-	0.5		V
VIDEO saturation output *2		Vast	3.3	-	4.0	V

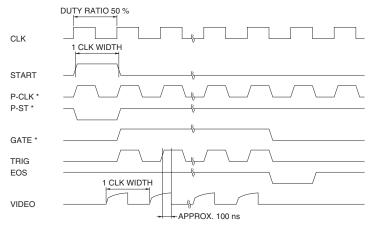
^{*2:} From offset value.



■ Block diagram

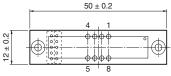


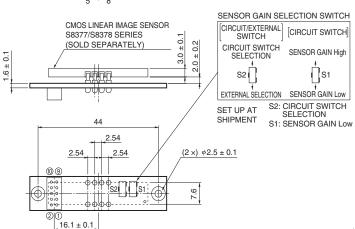
■ Timing chart



* INTERNAL SIGNAL

■ Dimensional outline (unit: mm)





KACCA0115EA

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

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Pin No.	Terminal name	I/O	Description	
1	CLK	ı	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	0	Sensor end-of-scan signal. Negative logic	
(5)	TRIG	0	A/D conversion timing signal. The number of output pulses is equal to the number of pixels.	
6	GND		Circuit ground	
7	Vcc	ı	+5 V power supply line	
8	GND		Circuit ground	
9	VIDEO	0	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).

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