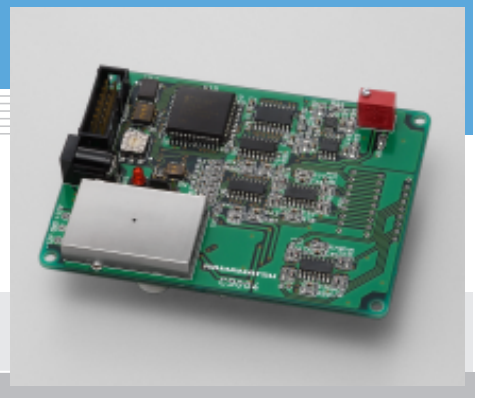


Driver circuit for Si photodiode array

C9004

Driver circuit for 16-element photodiode array



Features

- High precision and high-speed measurement by simultaneous 16-channel readout
- Assembled with pulse generator (8-step adjustable oscillatory frequency)
CLK, START, A/D conversion Trig and $\overline{\text{EOS}}$ pulse output
- Choice of gain (conversion impedance): 1×10^6 or 1×10^7 (V/A)
- Hamamatsu S4111-16 series, S5668 series and S8592 photodiode arrays are directly mountable on board.
- Single power supply operation: +12 V

Applications

- Performance evaluation of Hamamatsu S4111-16 series, S5668 series and S8592 photodiode arrays
- Position measurement
- Displacement measurement

■ Absolute maximum ratings

Parameter	Symbol	Value	Unit
Supply voltage	Vcc Max.	+18	V
Input current	Iin Max.	$+6.7 \times 10^{-5}$	A
Operating temperature	Topr	0 to +50	°C
Storage temperature	Tstg	-20 to +80	°C

■ Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Input current range	Iin	Tz=1 × 10 ⁶	-	-	1 × 10 ⁻⁵	A
		Tz=1 × 10 ⁷	-	-	1 × 10 ⁻⁶	A
Conversion impedance *1	Tz		1 × 10 ⁶	-	1 × 10 ⁷	V/A
Output offset voltage	Vos	Tz=1 × 10 ⁶ (set up prior to shipping)	-	0.025	-	V
		Tz=1 × 10 ⁷ *2	-	0.25	-	V
Output amplitude voltage	Vo	Tz=1 × 10 ⁶ , RL=1 kΩ	0	-	+10	V
		Tz=1 × 10 ⁷ , RL=1 kΩ	0	-	+10	V
Output noise voltage	enp-p	Tz=1 × 10 ⁶ (full bandwidth)	-	5	-	mVp-p
		Tz=1 × 10 ⁷ (full bandwidth)	-	10	-	mVp-p
Rise time	tr	Tz=1 × 10 ⁶ , RL=1 kΩ	-	5.6	-	μs
		Tz=1 × 10 ⁷ , RL=1 kΩ	-	5.6	-	μs
Capacitive load	CL		-	-	100	pF
Oscillatory frequency (OUT) *3	CLK		1.5625	-	200	kHz
Start pulse width (OUT) *3	-		5	-	640	μs
Output format *4	-		TTL			-
Current consumption	Icc		-	200	250	mA

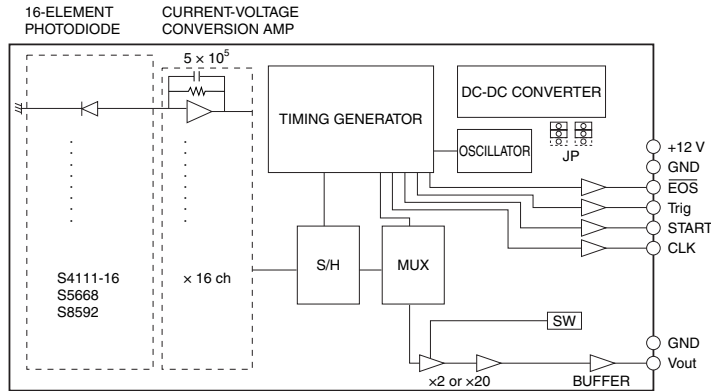
*1: Conversion impedance can be changed with the switch on the circuit board.

*2: The variable resistor VR on the circuit board must be used for making offset adjustments.

*3: Adjustable in 8 steps by using the BCD rotary switch on the circuit board.

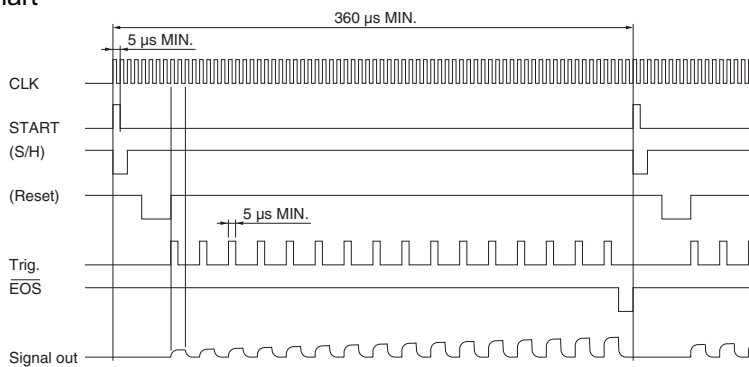
*4: CLK, START, Trig and $\overline{\text{EOS}}$ pulse output format.

■ Block diagram



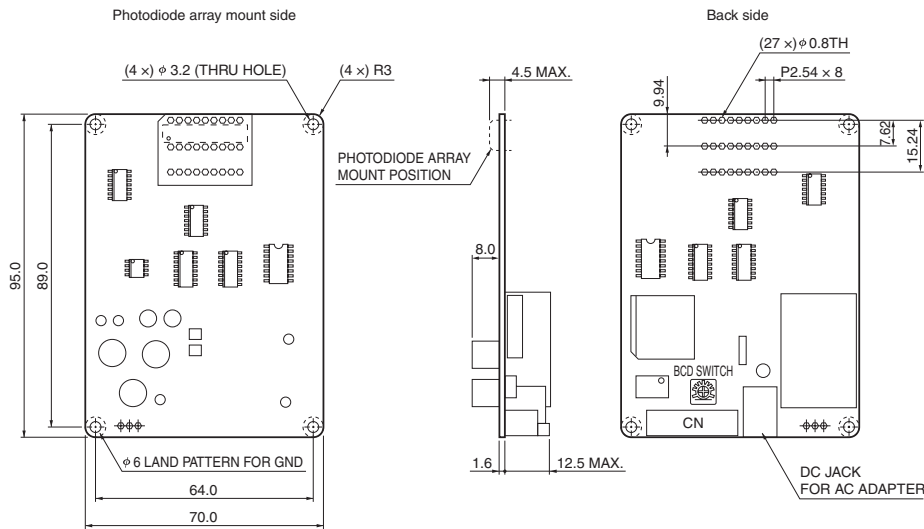
KACCC0181EA

■ Timing chart



KACCC0182EA

■ Dimensional outline (unit: mm)



NOTE) Photodiode array sold separately

KACCA0117EB

■ Accessories

- Dedicated AC adapter
- Flat cable (20 cm) with I/O connector receptacle

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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