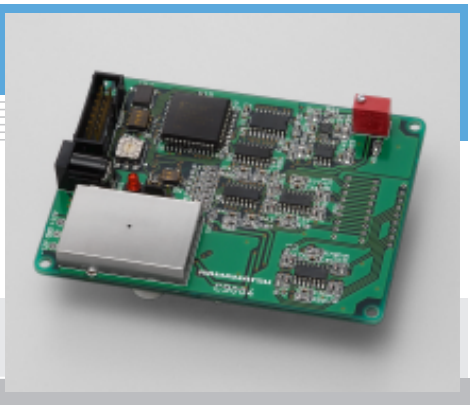
NEW

MODULE

# 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 $\overline{EOS}$ pulse output
- Choice of gain (conversion impedance): $1 \times 10^6$ or $1 \times 10^7$ (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)

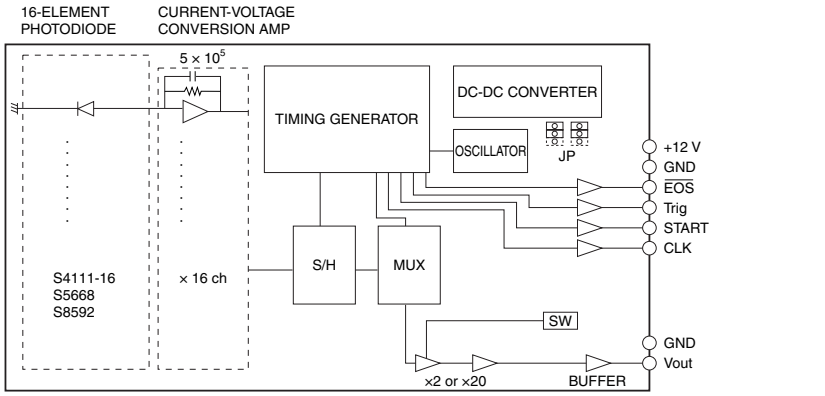
| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Input current range | Iin | Tz=1 × $10^6$ | - | - | 1 × $10^{-5}$ | A |
| | | Tz=1 × $10^7$ | - | - | 1 × $10^{-6}$ | A |
| Conversion impedance *1 | Tz | | 1 × $10^6$ | - | 1 × $10^7$ | V/A |
| Output offset 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 $\overline{EOS}$ pulse output format.

PRELIMINARY DATA
Aug. 2002

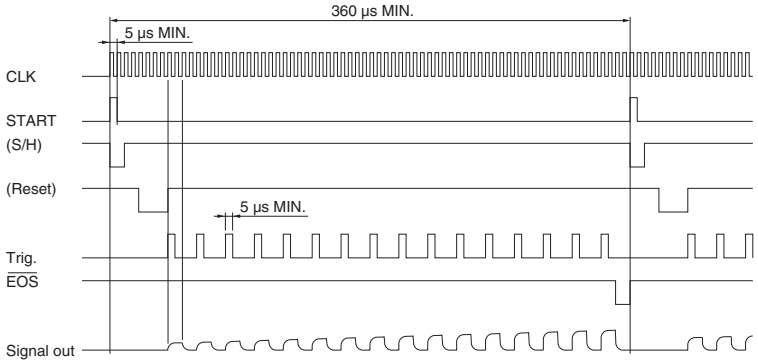
SOLID STATE DIVISION

## ■ Block diagram



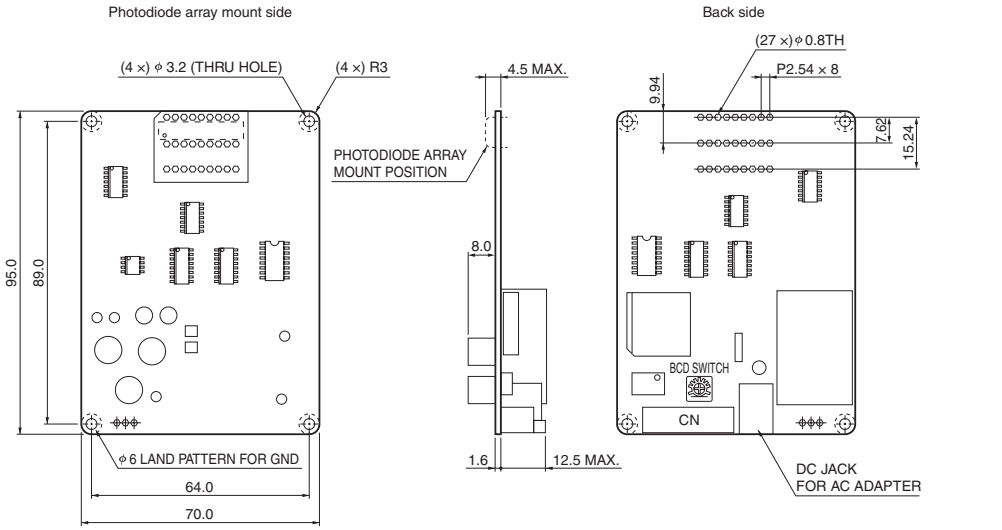

KACCC0181EA

## ■ 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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