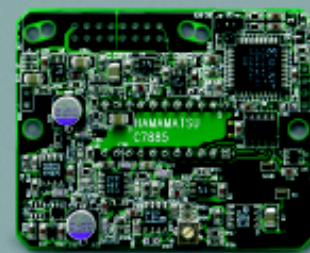


Driver circuit for NMOS linear image sensor C7885 series

Driver circuit for voltage-output type NMOS linear image sensor



C7885

C7885 series is a driver circuit specifically designed for the Hamamatsu voltage-output type NMOS linear image sensors (S3921 to S3924 series). NMOS linear image sensors are self-scanning photodiode arrays integrated with a scanning circuit of N-channel MOS transistors.

C7885 series supplies start pulses, 2-phase clock pulses and reset pulses necessary for voltage-output type image sensor operation. C7885 series also includes a signal processing circuit that inverts and amplifies video signals from an image sensor. C7885 series operates by input of a master start pulse, master clock pulse and connection to a power supply (+12 V or +15 V).

C7885-20 is multichannel detector head incorporating driver circuit (C7885) developed for Hamamatsu NMOS linear image sensor. C7885-20 is designed especially for compactness, having an overall length as short as 40 mm or less. The housing case also provides a shielding effect against external noise. As useful options, peripheral devices are available for driving C7885-20, and for the output signal processing.

Features

- Suitable for voltage-output type image sensors
- Compact (compared to conventional type C4074)
- Single power supply (+12 V or +15 V) operation

■ Selection guide

Type No.	Product name	Feature
C7885	Driver circuit	High-speed driver circuit for voltage-output type NMOS linear image sensors. Has no input/output connector.
C7885G	Driver circuit + Pulse generator	A dedicated pulse generator is pre-mounted on the driver circuit board. Has no input/output connector.
C7885-20	Multichannel detector head	C7885 driver circuit board is installed in a shield case.

Note)

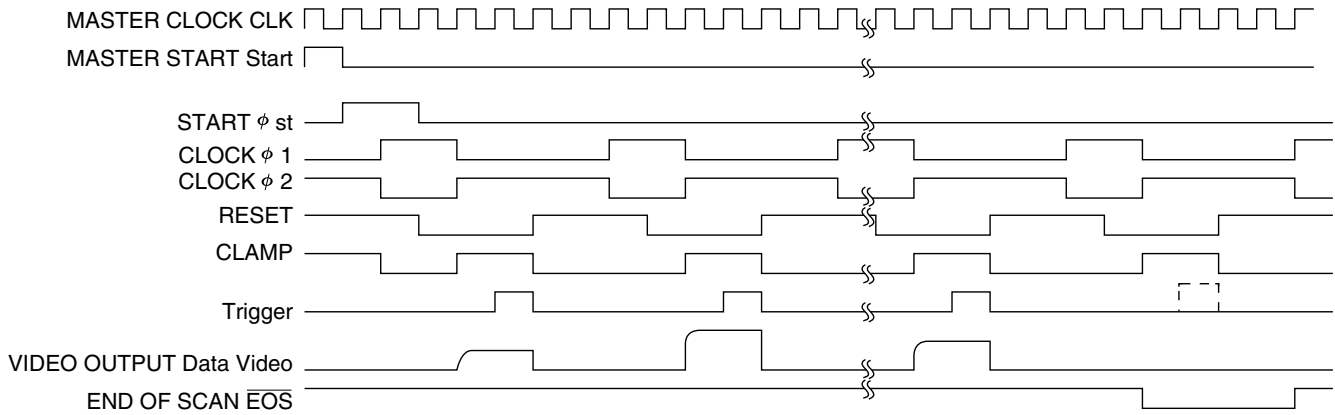
- 1: Standard input/output connector is FAP-16-07#2 (made by Yamaichi, sold separately). Equivalent connectors are available from other manufacturers.
- 2: Custom products with an input/output connector pre-mounted are available on request. Please consult our sales office.
- 3: When ordering along with a dedicated cable (A8226), C7885 will be shipped with a mating connector pre-mounted.
- 4: We welcome custom requests. Feel free to contact our sales office.
- 5: When using current-output type NMOS linear image sensors, refer to C7883/C7884 series data sheets.

■ Specifications (Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply voltage	+Vs		+11.5	+12.0	+15.5	V
Current consumption	C7885	+12 V	-	30	40	mA
	C7885G	+12 V	-	60	80	mA
	C7885-20	+12 V	-	30	40	mA
Operation frequency	-	Master clock frequency: 3 MHz	-	-	500	kHz
Gain	G		-	6	-	V/pC
Operating temperature	Topr		0 to +50 *			°C
Storage temperature	Tstg		-10 to +60 *			°C

* No condensation

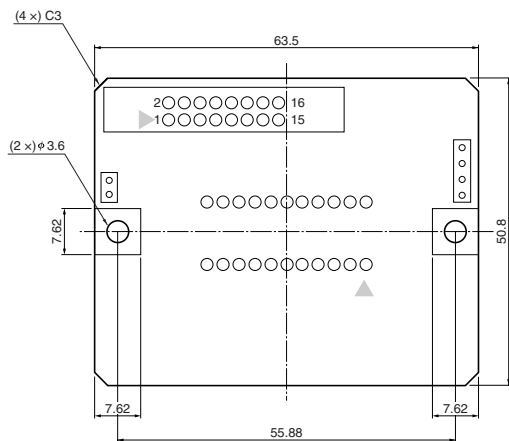
■ Timing chart



KACCC0120EA

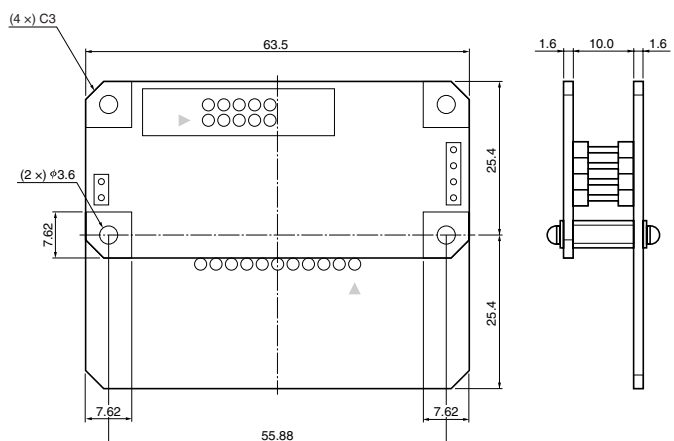
■ Dimensional outlines and input/output signal descriptions (unit: mm)

C7885



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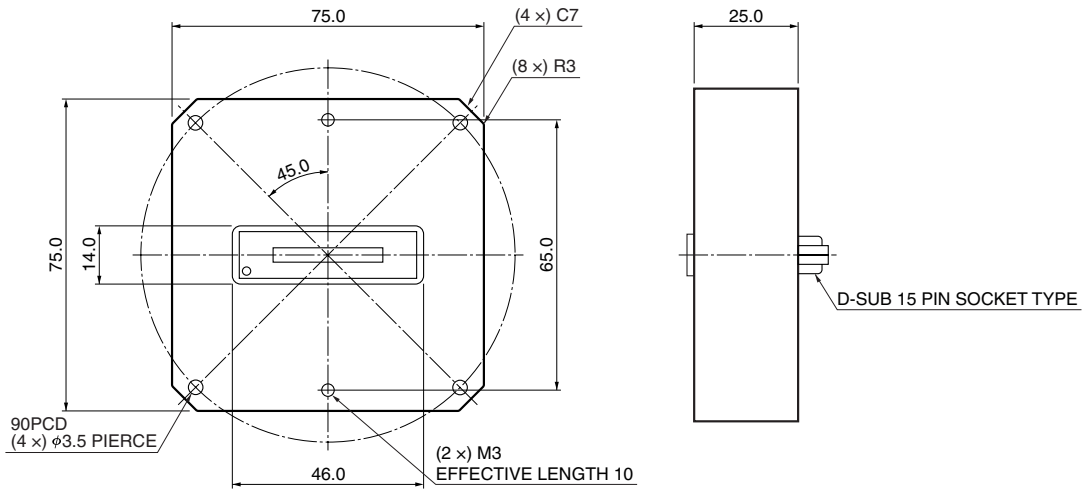
C7885G



KACCA0106EA

Terminal No.	Terminal name	Description
1	A. GND	Analog ground
2	+12 V or +15 V	Power supply
3	A. GND	Analog ground
4	NC	No connection
5	A. GND	Analog ground
6	Data Video	Analog video signal output; positive polarity
7	A. GND	Analog ground
8	A. GND	Analog ground
9	D. GND	Digital ground
10	$\overline{\text{EOS}}$	Digital output signal indicating end of scan; negative logic
11	D. GND	Digital ground
12	Trigger	Digital output signal for A/D conversion; positive logic
13	D. GND	Digital ground
14	CLK	Digital input signal for operating the circuit at the rising edge (in case of C7885G, output signal)
15	D. GND	Digital ground
16	Start	Digital input signal for initializing the circuit; positive logic. (in case of C7885G, output signal) Interval of these pulses equals the integration time of the sensor.

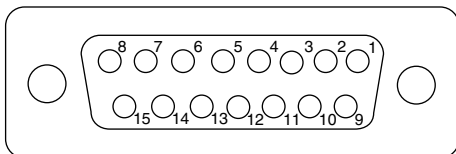
C7885-20



KACCA0112EA

Terminal No.	Terminal name	Description
1	NC	No connection
2	Data video	Analog video signal output; positive polarity
3	+12 V (+15 V)	Positive power supply
4	NC	No connection
5	NC	No connection
6	Start	Digital input signal for initializing the current; positive logic
7	CLK	Digital input signal for operating the circuit at the rising edge
8	$\overline{\text{EOS}}$	Digital output signal indicating end of scan; negative logic
9	A. GND	Analog ground
10	A. GND	Analog ground
11	Shield	Case shield
12	D. GND	Digital ground
13	D. GND	Digital ground
14	D. GND	Digital ground
15	Trigger	Digital output signal for A/D conversion; positive logic

■ Pin assignment of "Signal I/O" connector (C7885-20, 15 pin D-sub socket type)



KACCC0069EA

Dedicated cable A8226

Connector on board: UFS-16B-01

Input/output signal connector: BNC (Start, CLK, Trigger, EOS, Data Video)

Power supply: lose wire cable

Cable length: 1 m

Note) When making a simple in-circuit evaluation of NMOS linear image sensors without any troublesome soldering, use C7883G, C7884G, C7884G-01 or G7885G in combination with A8226.

All you have to do is just insert an NMOS linear image sensor into the socket and connect the cables to an oscilloscope, power supply and AD converter. Note that NMOS linear image sensors are sold separately.



C7884G used in combination with A8226

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