DRIVER/AMPLIFIER CIRCUIT C4074

For Serial/Voltage Output Type MOS Linear Image Sensors

The C4074 is a driver/amplifier circuit designed specifically for use with the serial/voltage output type MOS linear image sensors (S3921, S3924, S3922, S3923 series). The C4074 driver/amplifier circuit is simply constructed because the video-line integration in the MOS linear image sensors provides output signal with boxcar waveform. The C4074 includes a generator for a start pulse and two-phase clock pulses used to drive a MOS linear image sensor and an amplifier used to read out the video signal. The signal inputs required for the C4074 are only a master start pulse, master clock pulse, +5V and ±15V.

In addition, the C4091 pulse generator is available, which supplies the C4074 with a master start pulse and a master clock pulse.

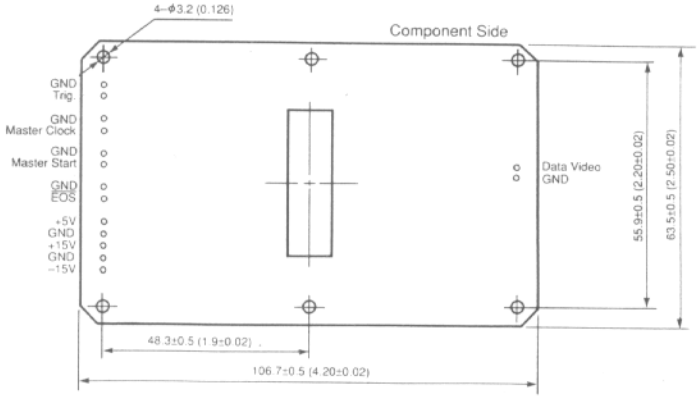
FEATURES

- **Structure allows easy cooling and optical alignment of MOS image sensor.**
- **Simple operation: only a master start pulse, a master clock pulse, +5V and ±15V required**
- **Low cost**
- **Wide dynamic range**
- **Simple adjustment**

DESCRIPTIONS OF TERMINALS

	Terminals	Symbols	Descriptions
Input	Supply Voltage	V_d (+5) V_a (+15) (–15)	+5 Vdc, 70 mA +15 Vdc, 20 mA –15 Vdc, 20 mA
Input	Master Start ϕms	St.	CMOS logic compatible. Positive logic. For initializing the circuit and the MOS shift register.
Input	Master Clock ϕmc	CLK	CMOS logic compatible. The maximum frequency is 3 MHz. For synchronizing the circuit and the MOS shift register.
Output	Data Video	Video	Positive polarity output. This is the amplified video output of the MOS image sensor, with the polarity inverted and the DC offset cancelled.
Output	Sample-and-hold	Trig.	CMOS logic compatible. Positive logic. This output can be used as the trigger signal for the sample-and-hold or A/D conversion.
Output	End of Scan	$\overline{EOS}$	CMOS logic compatible. Negative logic. This is the end-of-scan signal of the MOS shift register and it is obtained synchronized with ϕ2 right after the last element is scanned.

Figure 1: Dimensional Outline and Terminals



Dimensions in mm (inches)

Figure 2: Wiring Example

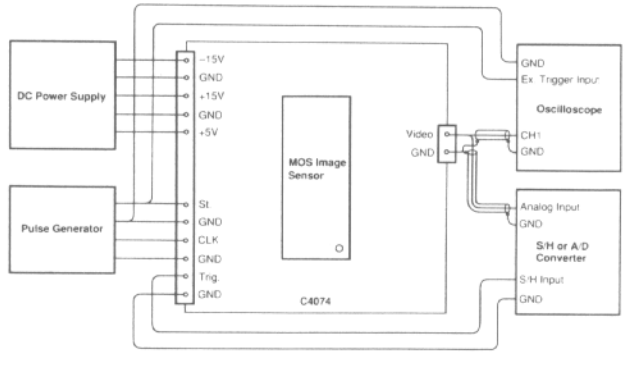


Figure 3: Block Diagram

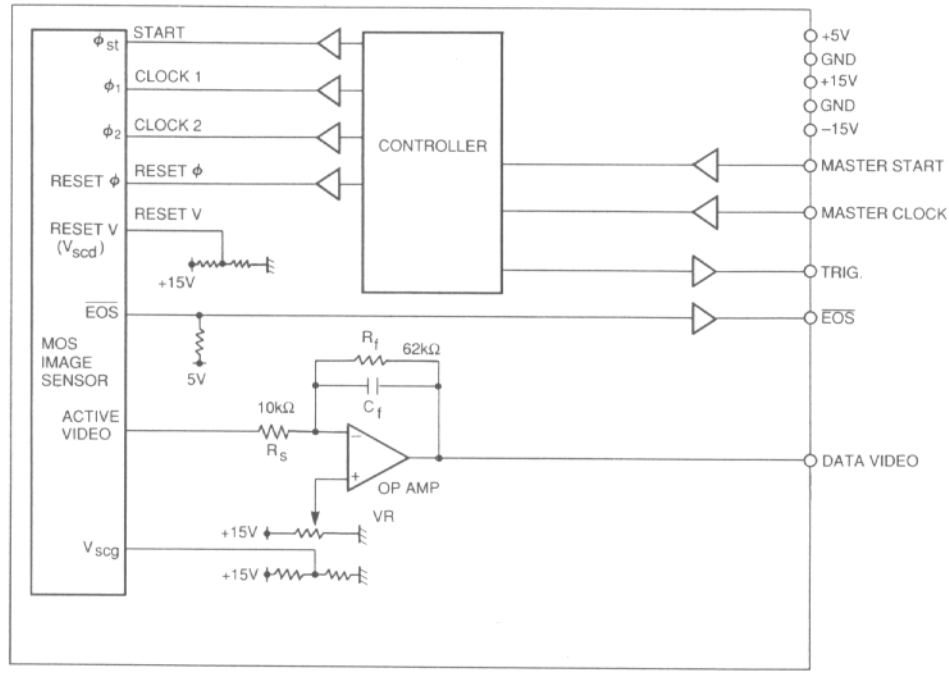


Figure 4: Timing Diagram