

TOSHIBA CCD Linear Image Sensor CCD (Charge Coupled Device)

TCD2728DG

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The TCD2728DG is a high sensitive and low dark current 7500 elements \times 3 lines CCD color linear image sensor.

The device contains a row of 7500 elements \times 3 lines photodiodes which provide 24 lines/mm across a A3 size paper. The device is operated by 3.3 V pulse and 3.3 V & 10.0 V power supply.

Features

Number of Image Sensing Elements: 7500 elements \times 3 lines

Image Sensing Element Size: 4.7 μ m by 4.7 μ m on 4.7 μ m center

Photo Sensing Region: High sensitive PN photodiode

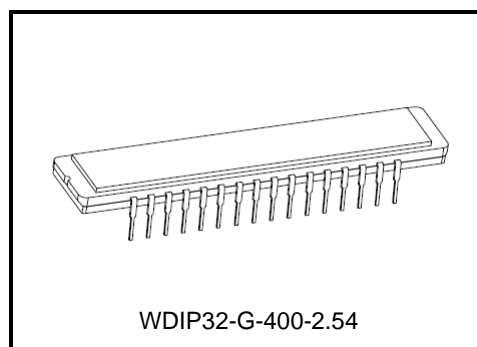
Power Supply Voltage: 3.3 V & 10.0 V (typ.)

Distance between Photodiode Array: 9.4 μ m (2 lines) B array – G array, G array – R array

Internal Circuit: Timing generator circuit, Clamp circuit, Sample and hold circuit

Package: 32 pin Cerdip

Color Filter: Red, Green, Blue

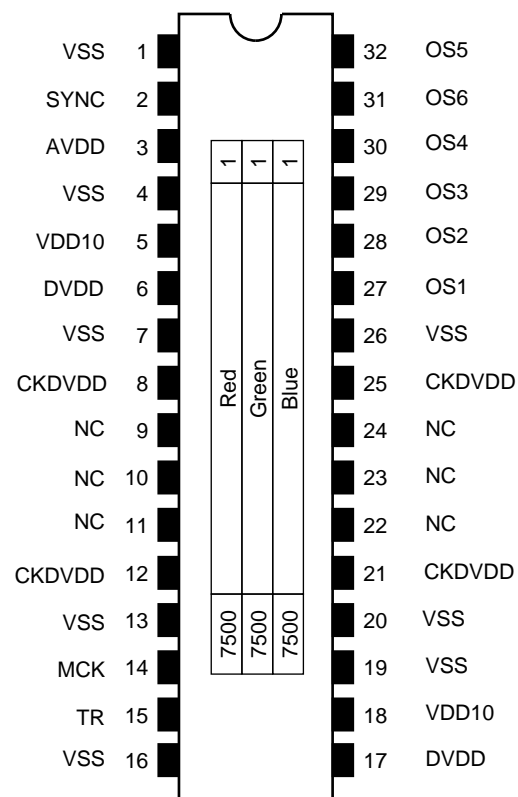


ABSOLUTE MAXIMUM RATINGS (Note 1)

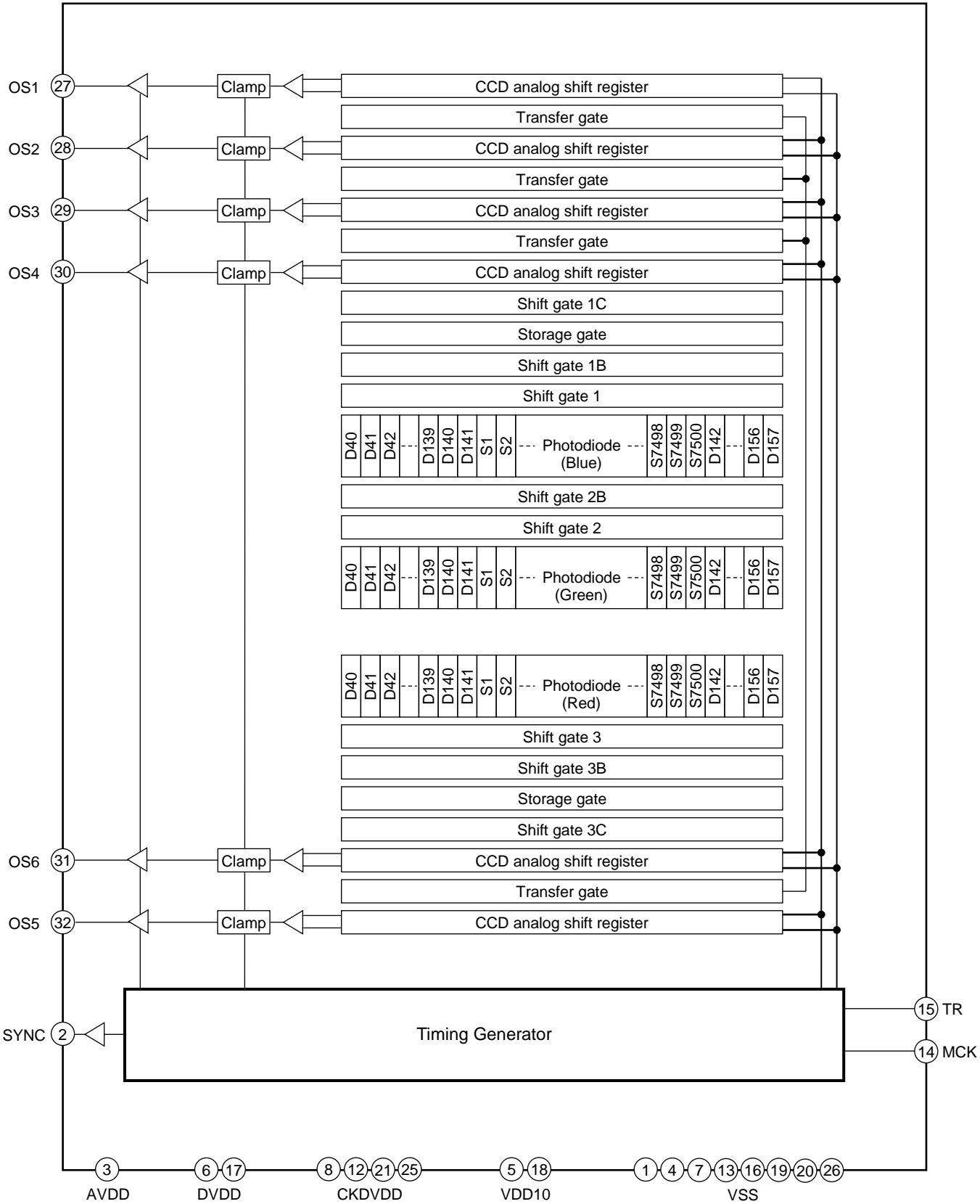
Characteristics	Symbol	Rating	Unit
MCK Clock pulse voltage	VMCK	–0.3 to +5.0	V
TR Clock pulse voltage	VTR		
3.3 V Power supply voltage	VAVDD	–0.3 to +5.0	
	VDVDD	–0.3 to +5.0	
	VCKDVDD	–0.3 to +5.0	
10 V Power supply voltage	VVDD10	–0.3 to +13.5	
Operating temperature	T _{opr}	0 to 60	°C
Storage temperature	T _{stg}	–25 to +85	

Note 1: All voltages are with respect to VSS terminals (ground).
None of the ABSOLUTE MAXIMUM RATINGS must be exceeded, even instantaneously.
If any one of the ABSOLUTE MAXIMUM RATINGS is exceeded, the electrical characteristics, reliability and life time of the device cannot be guaranteed. If the ABSOLUTE MAXIMUM RATINGS are exceeded, the device can be permanently damaged or degraded.
Create a system design in such a manner that any of the ABSOLUTE MAXIMUM RATINGS will not be exceeded under any circumstances.

Pin Connections (top view)



Circuit Diagram



Pin Names

Pin No.	Symbol	Name	Pin No.	Symbol	Name
1	VSS	Ground	32	OS5	Output signal 5 (Red(Odd))
2	SYNC	Synchronized signal for OS	31	OS6	Output signal 6 (Red(Even))
3	AVDD	3.3 V Power supply (Analog)	30	OS4	Output signal 4 (Green(Even))
4	VSS	Ground	29	OS3	Output signal 3 (Green(Odd))
5	VDD10	10 V Power supply	28	OS2	Output signal 2 (Blue(Even))
6	DVDD	3.3 V Power supply (Digital)	27	OS1	Output signal 1 (Blue(Odd))
7	VSS	Ground	26	VSS	Ground
8	CKDVDD	3.3 V Power supply (Digital, for internal driver)	25	CKDVDD	3.3 V Power supply (Digital, for internal driver)
9	NC	Non connection	24	NC	Non connection
10	NC	Non connection	23	NC	Non connection
11	NC	Non connection	22	NC	Non connection
12	CKDVDD	3.3 V Power supply (Digital, for internal driver)	21	CKDVDD	3.3 V Power supply (Digital, for internal driver)
13	VSS	Ground	20	VSS	Ground
14	MCK	Master clock	19	VSS	Ground
15	TR	Line start pulse	18	VDD10	10 V Power supply
16	DVSS	Ground	17	DVDD	3.3 V Power supply (Digital)

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