Lightning® 720p AMOLED

COLOR

KEY FEATURES

1280 x RGB x 720 active resolution + 8-pixel orbit on four sides

1296 x RGB x 736 total resolution

2.79 x 8.37 µm color dot pitch

Ultra-compact (0.49" diagonal)

Standard digital video input
- CMOS level digital video
- VESA standard timing
- RGB or YCbCr support

Frame rates up to 120 Hz

Color space conversion, contrast, brightness and gamma controls

Bi-directional horizontal and unidirectional vertical scanner circuits

Built-in ramp and VCOM generator

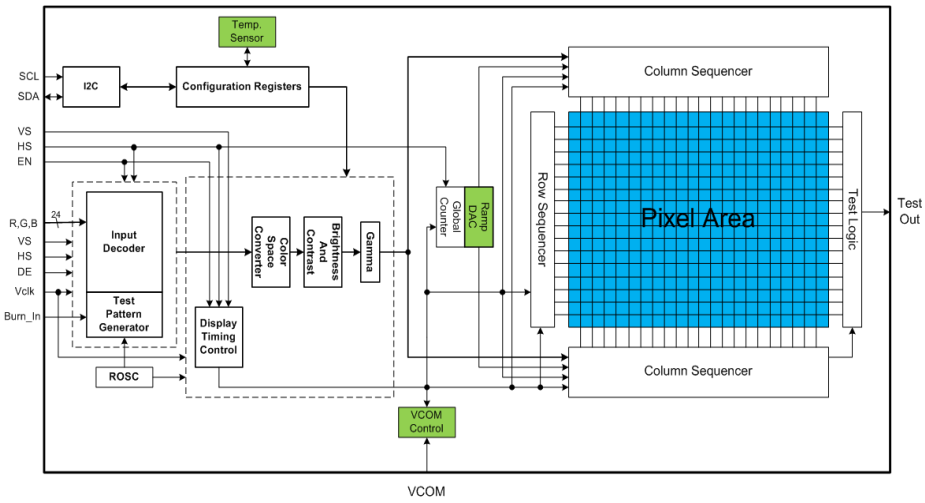
The Lightning® 720p OLED is a color-filter active matrix organic light emitting diode (AMOLED) with a resolution of 1280x720. The Lightning 720p utilizes high-performance single crystal silicon transistors and is the smallest (0.49" diagonal) AMOLED for the resolution. The emissive Lightning 720p has the same display architecture as the industry standard LCD monitor or TV. The ultra-compact Lightning 720p is ideal for high end consumer or professional portable devices.

Functional Description

The Lightning 720p features Kopin's low-voltage architecture for low power consumption and compatibility with CMOS driver ICs. Bidirectional horizontal and unidirectional vertical scanner circuits are integrated along with a sleep mode. The total dot active resolution is 1280 x 720 x 3 (2,764,800 dots).

The Lightning 720p accepts standard RGB or YCbCr digital video input.

BLOCK DIAGRAM



*Specifications subject to change without notice

Rev. 2

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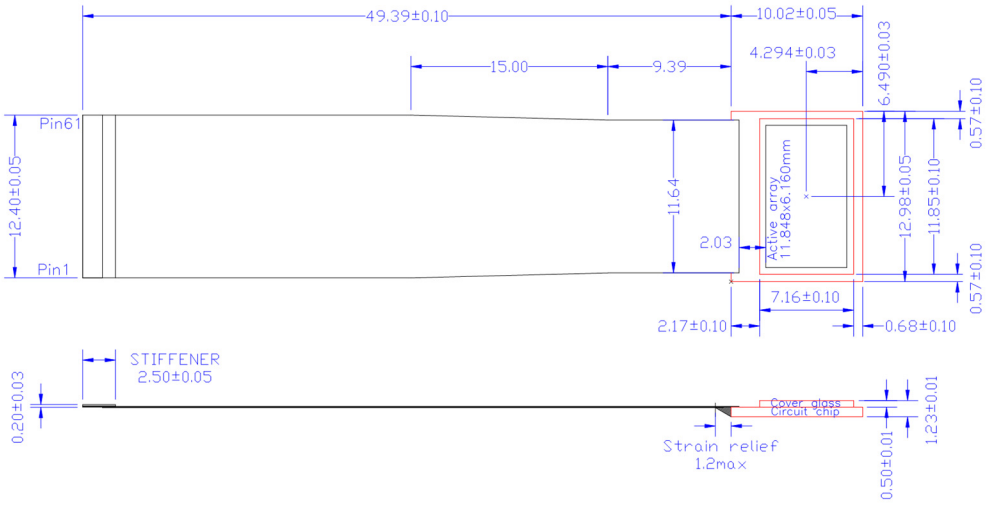
KOPIN

Lightning® 720p AMOLED

Lightning 720p with a spatial resolution of 1280 x 720 is ideal for high end consumer or professional portable devices.

MECHANICAL OUTLINE



PIN	SYMBOL	DESCRIPTION	PIN	SYMBOL	DESCRIPTION	PIN	SYMBOL	DESCRIPTION
1	VCOM_ARY	Cathode ring	21	VCLK	Video clock	41	BURNIN	Burn in enable
2	V5_ARRAY	Power for pixel array	22	VSS	Ground	42	I2C_ADDR[0]	I2C address selector 0
3	VDD_I2C	Power for I2C	23	DE	Data enable	43	I2C_ADDR[1]	I2C address selector 1
4	I2C_SCL	I2C serial clock	24	VDD	Core power	44	TEST_OUT	Test output
5	I2C_SDA	I2C serial data	25	VDD5_IO	Power for 5V pad	45	VDD	Power for core logic
6	VDD	Power for core logic	26	GIN [4]	Digital video input	46	VSS	Ground
7	VSS	Ground	27	GIN [5]	Digital video input	47	VS_VCOM	Ground
8	BIN [0]	Digital video input	28	GIN [6]	Digital video input	48	VCOM_SEN	VCOM sense
9	BIN [1]	Digital video input	29	GIN [7]	Digital video input	49	VS_VCOM_D	Ground
10	BIN [2]	Digital video input	30	RIN [0]	Digital video input	50	DRV_VCOM	VCOM driver output
11	BIN [3]	Digital video input	31	RIN [1]	Digital video input	51	VP_VCOM_D	Power for VCOM driver
12	BIN [4]	Digital video input	32	RIN [2]	Digital video input	52	VP_VCOM	Power for VCOM block
13	BIN [5]	Digital video input	33	RIN [3]	Digital video input	53	VREF	VCOM reference
14	BIN [6]	Digital video input	34	RIN [4]	Digital video input	54	VP_DAC_TMP	DAC, Temp sensor power
15	BIN [7]	Digital video input	35	RIN [5]	Digital video input	55	VS_DAC_TMP	Ground
16	GIN [0]	Digital video input	36	RIN [6]	Digital video input	56	VP_RAMP	Power for DAC output
17	GIN [1]	Digital video input	37	RIN [7]	Digital video input	57	VS_RAMP	Ground
18	GIN [2]	Digital video input	38	HSYNC	Horizontal sync	58	RAMP_PAD	Monitor
19	GIN [3]	Digital video input	39	VSYNC	Vertical sync	59	VSS	Ground
20	VDD_IO	Power for digital IO	40	RESETB	Master reset	60	V5_COL_LSH	Power for level shifter
						61	VCOM_ARY	Cathode ring