



LEOPARD IMAGING INC

LI-IMX185-MIPI-CS Data Sheet

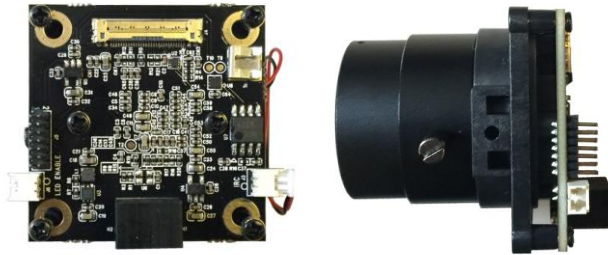
Key Features

- Sony Diagonal 8.58mm Type 1/1.9 CMOS Image Sensor IMX185LQJ
- Active pixels: 1937H x 1217V
- Pixel size: 3.75 um x 3.75 um
- Color sensor
- Interface: MIPI output
- Support CS lens
- Module Size: 38mm x 38mm
- Weight: 56 g
- Part#: **LI-IMX185-MIPI-CS**

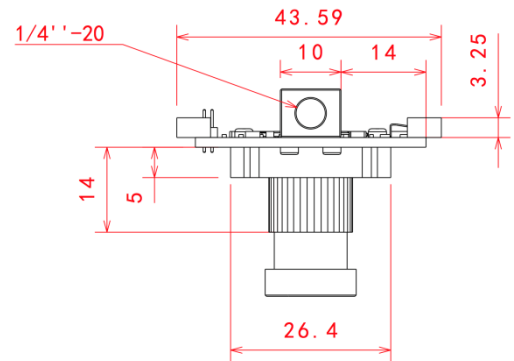
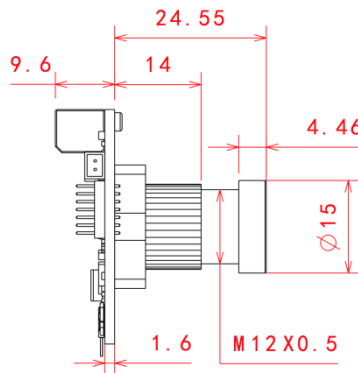
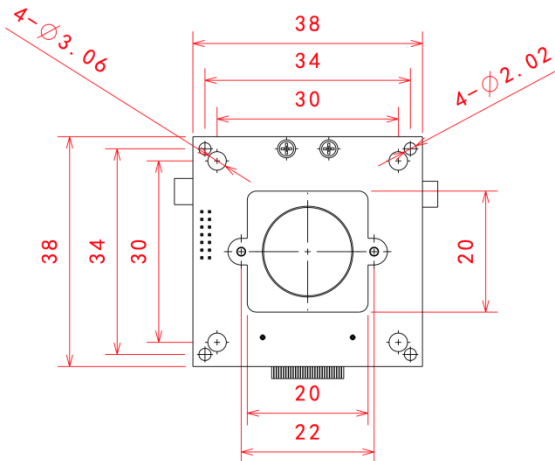


Lens Spec

- Model: ES0522F.IR
- Focal length: 5.0 mm
- Aperture, F/#: 2.2
- Built in 650nm IR cut filter
- FOV (D/H/V): 102 °/ 90 °/50 °
- TV Distortion: < -8%
- Mount Type: CS



Dimensions



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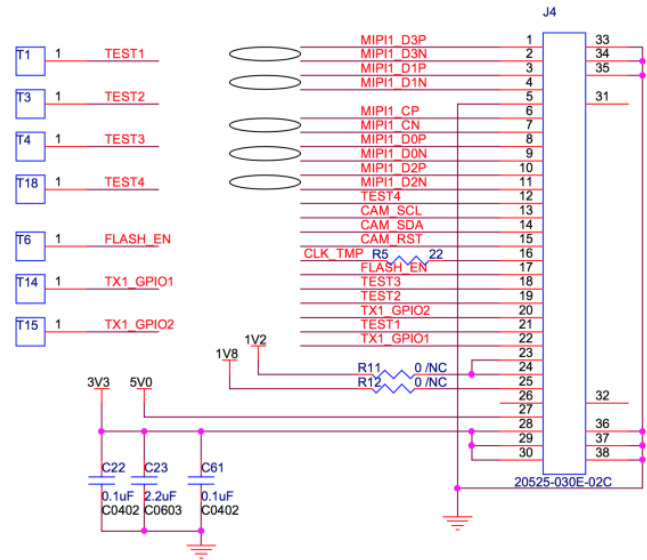
1130 Cadillac Ct., Milpitas, CA 95035, USA
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Interfaces

Interfaces

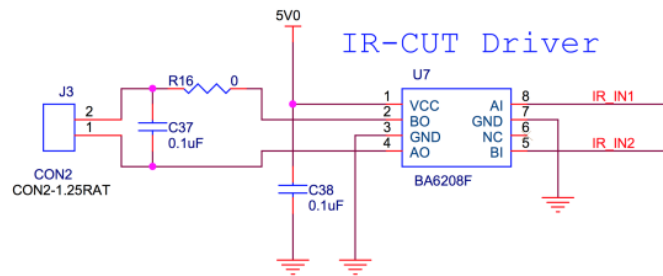
Interface J4:

- Part#: 20525-030E-02C
- Number of Positions: 30
- Pitch: 0.4mm
- Mating I-PEX cable: LI-FAW-1233-T1 (200mm)



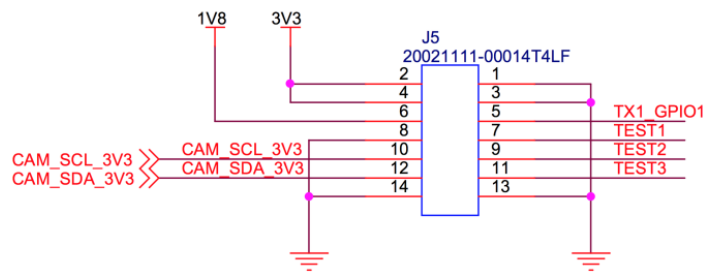
Interface J3:

- Part#: 1734829-2
- Number of Positions: 2
- Pitch: 1.25mm



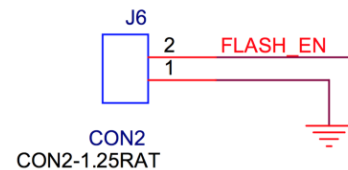
Interface J5:

- Part#: 20021111-00014T4LF
- Number of Positions: 14
- Pitch: 1.27mm



Interface J6:

- Part#: 1734829-2
- Number of Positions: 2
- Pitch: 1.25mm



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Optical Dimension

◆ Image size (recommended recording pixels)

All-pixel scan : diagonal 8.49mm (type 1/1.9)

1080p-HD : diagonal 8.26mm (type 1/1.9)

◆ Number of recommended recording pixels

All-pixel scan : 1920 (H) × 1200 (V) approx. 2.31 M pixels

1080p-HD : 1920 (H) × 1080 (V) approx. 2.07 M pixels

◆ Unit cell size

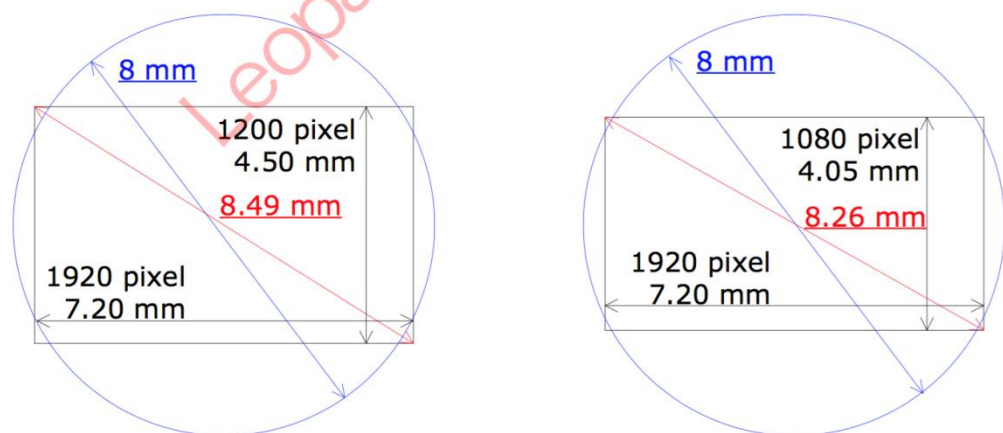
3.75 μm (H) × 3.75 μm (V)

◆ Recommended eye relief compensation distance : - 30mm to $-\infty$

Image formation on IMX185 with the lens for type 1/2 is shown below.

4 corners are out of the image formation. It might be caused the mechanical vignetting.

[Image circle of 1/2" lens](#)



All-pixel (WUXGA) mode

1080p-HD mode

Relation between image circle and the pixel area



DC Specification

HS Mode

HS Transmitter DC Specifications

Parameter	Description	Min.	Typ.	Max.	Unit	Notes
V_{CMTX}	HS transmit static common-mode voltage	150	200	250	mV	
$\Delta V_{CMTX(1,0)}$	V_{CMTX} mismatch when output is Differential-1 or Differential-0	—	—	5	mV	
V_{OD}	HS transmit differential voltage	140	200	270	mV	
ΔV_{OD}	V_{OD} mismatch when output is Differential-1 or Differential-0	—	—	10	mV	
V_{OHHS}	HS output high voltage	—	—	360	mV	
Z_{OS}	Single ended output impedance	40	50	62.5	Ω	
ΔZ_{OS}	Single ended output impedance mismatch	—	—	10	%	

LP Mode

LP Transmitter DC Specifications

Parameter	Description	Min.	Typ.	Max.	Unit	Notes
V_{OH}	Thevenin output high level	1.1	1.2	1.3	V	
V_{OL}	Thevenin output low level	-50	—	50	mV	
Z_{OLP}	Output impedance of LP transmitter	110	—	—	Ω	



AC Specification

HS Mode

HS Transmitter AC Specifications

Parameter	Description	Min.	Typ.	Max.	Unit	Notes
$\Delta O_{CMTX(HF)}$	Common-level variations above 450 MHz	—	—	15	mV _{RMS}	
$\Delta M_{CMTX(LF)}$	Common-level variation between 50 to 450 MHz	—	—	25	mV _{PEAK}	
t_R and t_F	20% - 80% rise time and fall time	150	—	300	ps	
T_{skew}		- 0.15	—	0.15	ps	

LP Mode

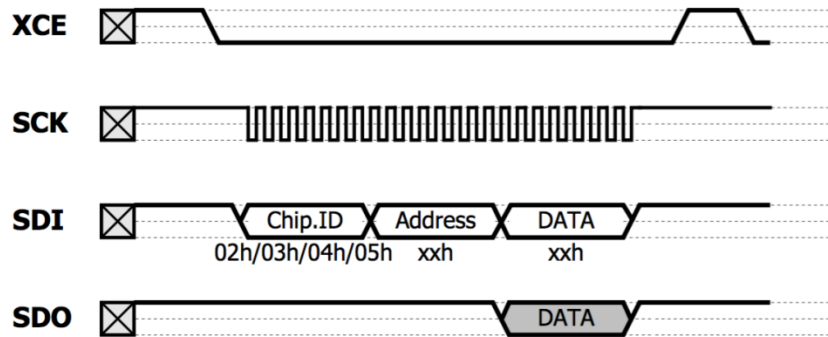
LP Transmitter AC Specifications

Parameter	Description	Min.	Typ.	Max.	Unit	Notes
T_{RLP}/T_{FLP}	15% - 85% rise time and fall time	—	—	25	ns	
V_{OL}	Slew rate Max. @ $C_{LOAD} = 20pF$	—	—	300	mV/ns	Simulation value
	Slew rate Min. @ $C_{LOAD} = 0$ to 70pF	30	—	—	mV/ns	
C_{LOAD}	Load capacitance	0	—	70	pF	



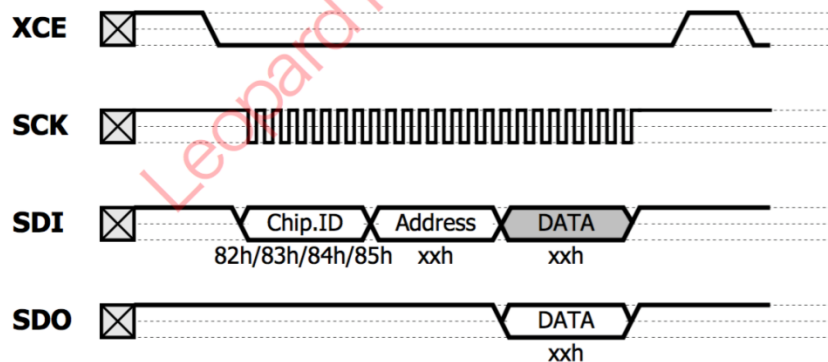
Register Read/Write operation

Both of register write and read operation, Chip ID, address and register value are declared to SDI. When Chip ID is 02h, 03h, 04h and 05h, value is written to the register designated by the address. When Chip ID is 82h, 83h, 84h and 85h, the value is read out from the register designated by the address. Write and read operation can be done continuously while XCE is low.



Write operation

When write operation, the order of the commands to SDI is as follows. 1st byte : Chip ID=02h, 03h, 04h or 05h, 2nd byte : address to write, 3rd byte and after : register value. SDO output the current value (Before write) of the register designated by the address.

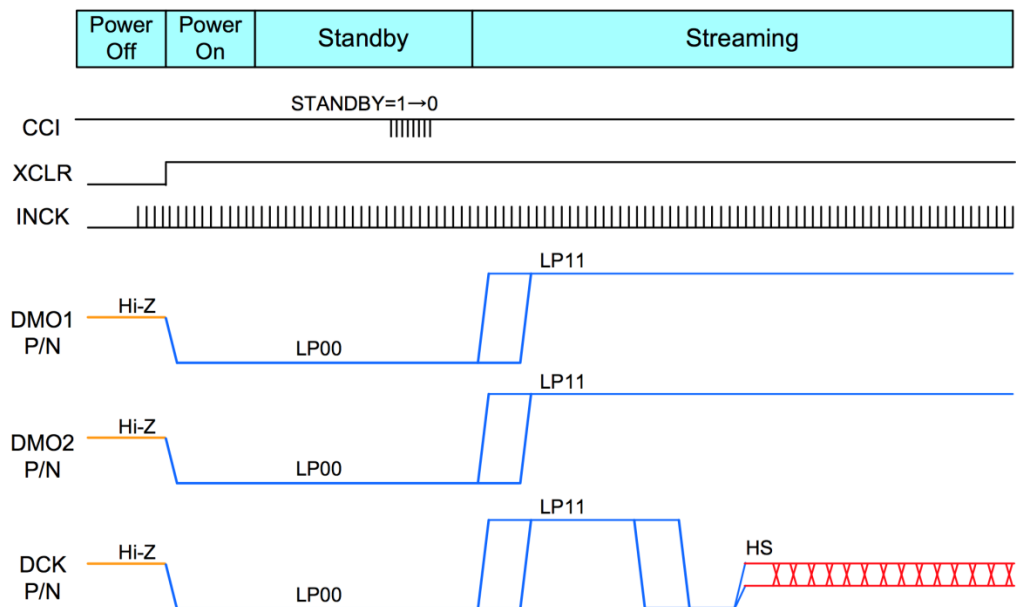


Read operation

When read operation, the order of the commands to SDI is as follow. 1st byte : Chip ID=82h, 83h, 84h or 85h, 2nd byte : address to read, 3rd byte and after : invalid data SDO output the value of the register designated by the address.



Power-on Sequence



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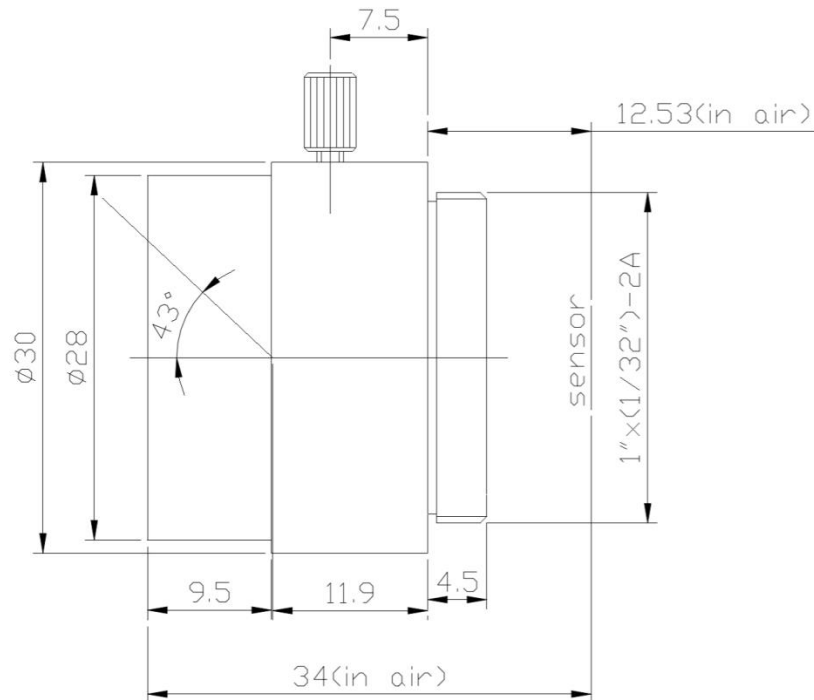
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10 Megapixel IR Series

ES0522F.IR





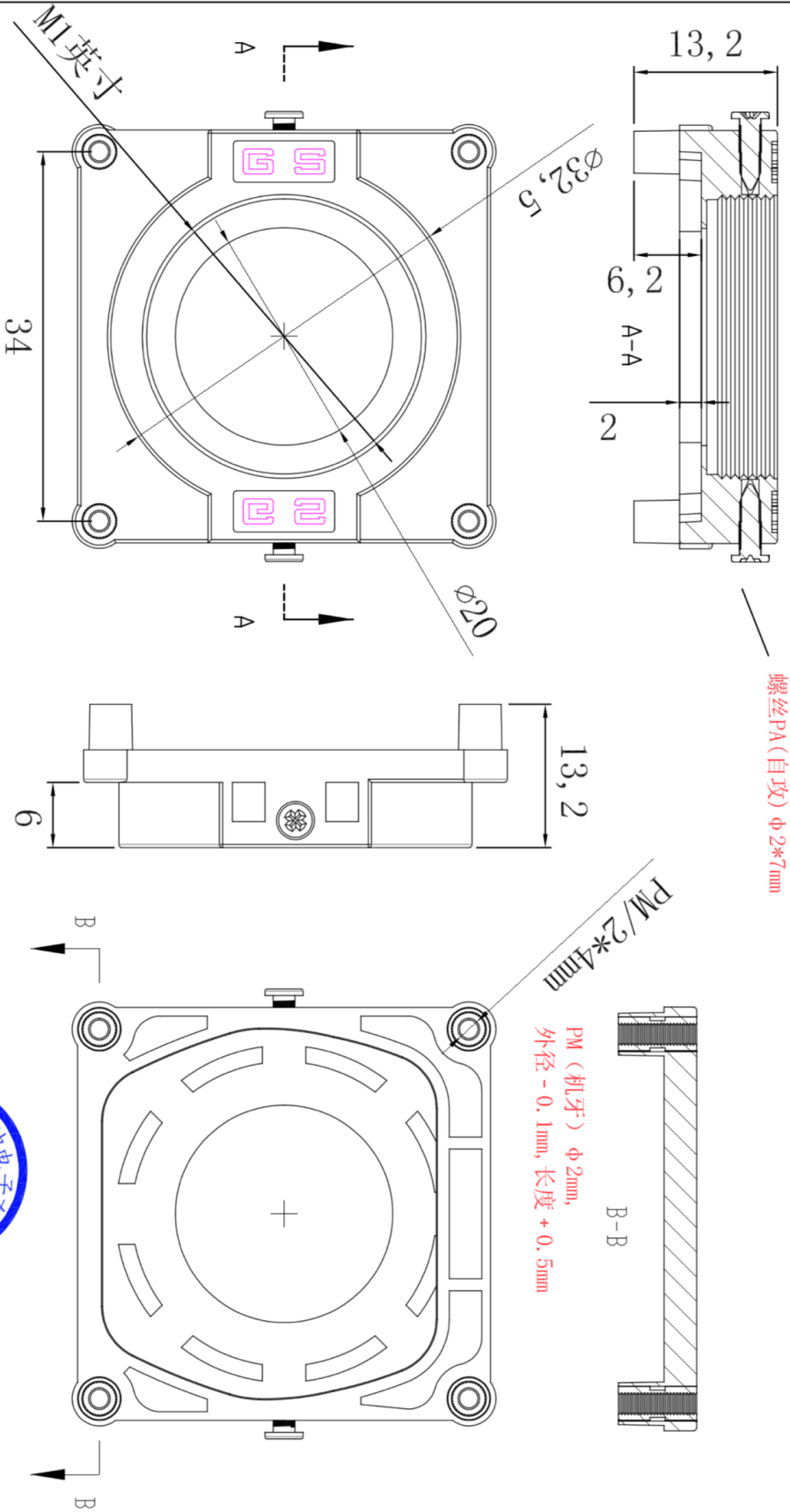
有效焦距	E.F.L.		5 mm
相对孔径	F No.		F2.2
接口类型	Mount Type		CS
水平视角	H.FOV	1/1.8"	72°
像面尺寸	Image Format (Max)		1/1.8"
光圈类型	Iris Type		Fixed
近 摄 距	M.O.D		0.3m
畸 变	TV Distortion	1/1.8"	-8%
操控方式	Control Type	变倍 Zoom	/
		聚焦 Focus	Manual
工作温度	Operating Temperature		-30°C ~ 70°C
镜头重量	Weight		39g
尺寸规格	Dimensions		



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上海广神电子 (深圳) 有限公司

感红外日夜转换器

EXPLAIN



设计部 环境 -40°C~+100°C±5% 使用寿命



设计	广由	单位	mm	公差	±0.05
制图	广元	比例	2:1	日期	2010-12-01
图号	IRC/5-38S				
联系人: 吴国虎	电话: 86-13501551929				

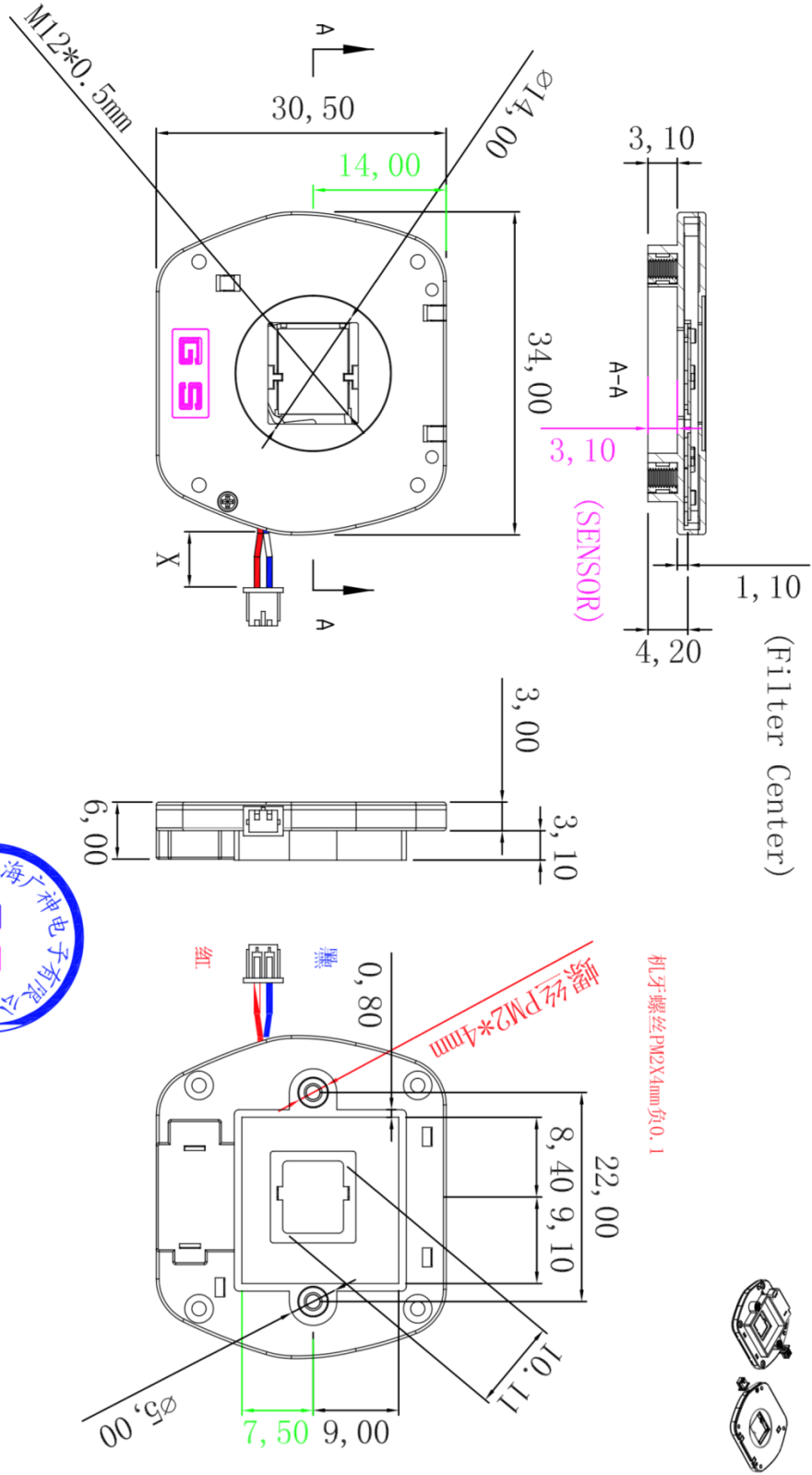
型号	GS5B-38S	直流电阻	绝缘电阻
额定电压		工作电压	
额定电流		瞬间电流	



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上海广神电子 (深圳) 有限公司

感红外日夜转换器
设计部
 上海广神电子有限公司

设计	广由	单位	mm	公差	±0.05	型号	GS5B-2230-CS		工作环境	-20°C ~ +60°C	
制图	广元	比例	2:1	日期	2010-12-01	额定电压	3.5V	工作电压	3.3V ~ 12V, At 20°C	使用寿命	50000次以上.
图号	IRC5B-2230-CS		额定电流		35mA	瞬间电流	0.5S				
联系人: 吴国虎		电话: 86-13501551929		直流电阻		100ohm ± 10%, At 20°C	绝缘电阻				



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