



LEOPARD IMAGING INC

LI-IMX274-MIPI-CS

Data Sheet

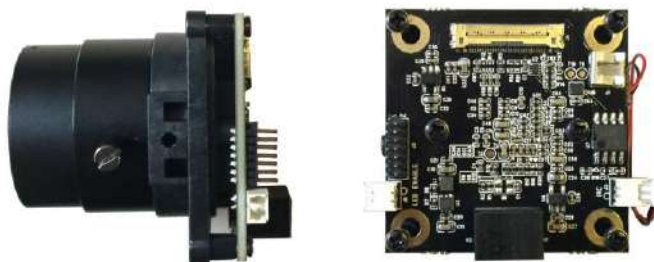
Key Features

- Sony Diagonal 7.20 mm (Type 1/2.5) CMOS Image Sensor IMX274
- Active pixels: 3864H x 2196V
- Pixel size: 1.62 μm x 1.62 μm
- Color sensor
- Interface: MIPI output
- Support CS lens
- Module Size: 38mmx38mm
- Weight: 54 g
- Part#: **LI-IMX274-MIPI-CS**

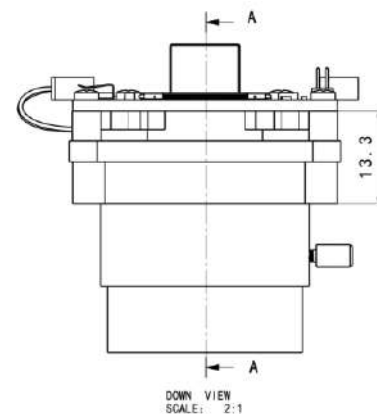
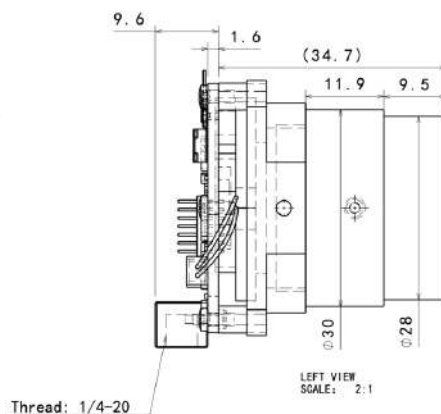
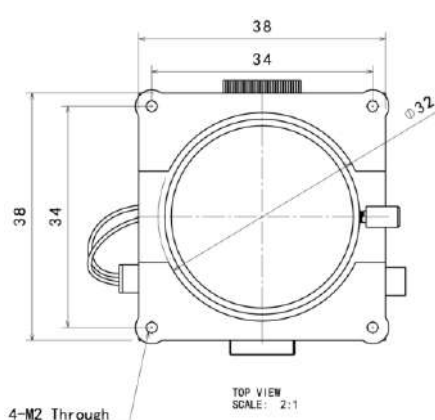


Lens Spec

- Model: ES0522F.IR
- Focal length: 5.0 mm
- Aperture, F/#: 2.2
- Built in 650nm IR cut filter
- FOV (D/H/V): 87 °/ 76 °/43 °
- TV Distortion: < -8%
- Mount Type: CS



Dimensions



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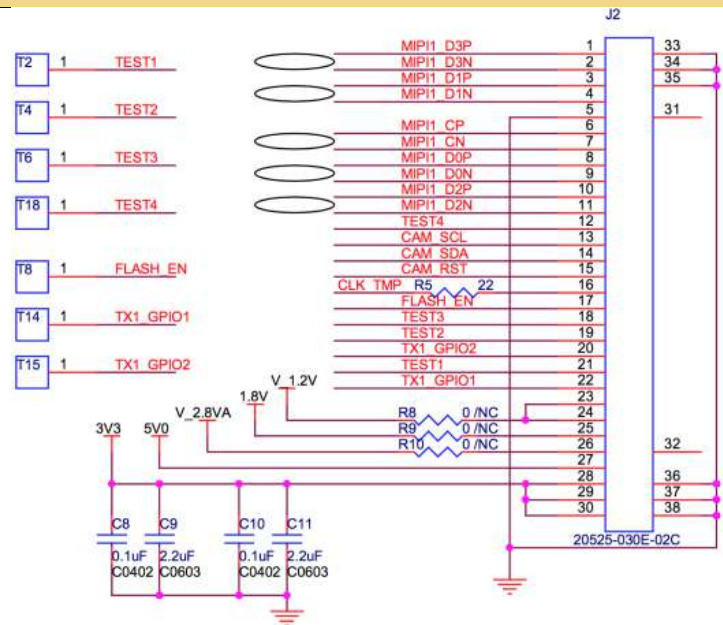
1130 Cadillac Ct., Milpitas, CA 95035, USA
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Interfaces

Interfaces

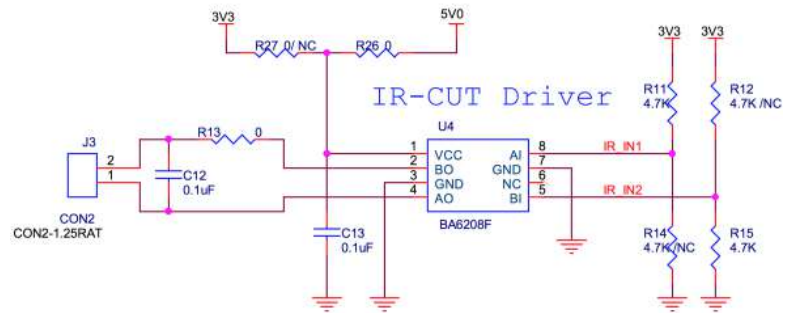
Interface J2:

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



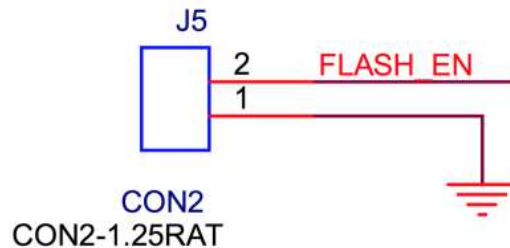
Interface J3:

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



Interface J5:

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



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Absolute Maximum Ratings

Item	Symbol	Ratings	Unit
Supply voltage (Analog)	V_{ADD}^{*1}	-0.3 to +3.3	V
Supply voltage (Digital 1)	V_{DDD1}^{*2}	-0.5 to +2.0	V
Supply voltage (Digital 2)	V_{DDD2}^{*3}	-0.5 to +3.3	V
Input voltage (Digital)	V_I	-0.3 to $V_{DDD2} + 0.3$	V
Output voltage (Digital)	V_O	-0.3 to $V_{DDD2} + 0.3$	V
Guaranteed operating temperature	T_{OPR}	-30 to +75	°C
Storage guarantee temperature	T_{STG}	-30 to +80	°C
Performance guarantee temperature	T_{SPEC}	-10 to +60	°C

Recommended Operating Conditions

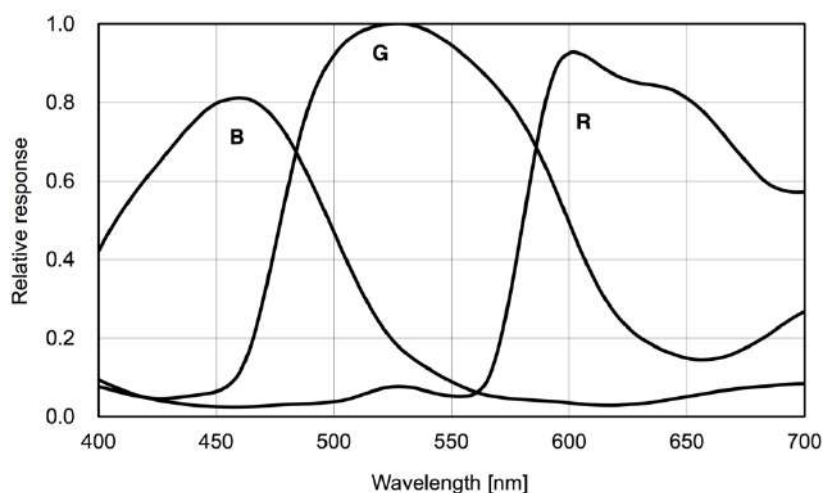
Item	Symbol	Rating	Unit
Supply voltage (Analog)	V_{ADD}^{*1}	2.8 ± 0.1	V
Supply voltage (Digital 1)	V_{DDD1}^{*2}	1.2 ± 0.1	V
Supply voltage (Digital 2)	V_{DDD2}^{*3}	1.8 ± 0.1	V
Input voltage (Digital)	V_I	-0.1 to $V_{DDD2} + 0.1$	V

*1 V_{ADD} : V_{DDSUB} , V_{DDHCM} , V_{DDHPX} , V_{DDHDA} , V_{DDHCP} (2.8 V power supply)

*2 V_{DDD1} : V_{DDLSC1} to 2, V_{DDLPA} , V_{DDLPL1} , V_{DDLPL2} to 3, V_{DDLIF} (1.2 V power supply)

*3 V_{DDD2} : V_{DDMIO} , V_{DDMIF} (1.8 V power supply)

Spectral Sensitivity Characteristics



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DC Characteristics

Current Consumption and Gain Vatriable Range

($V_{ADD} = 2.9\text{ V}$, $V_{DDD1} = 1.3\text{ V}$, $V_{DDD2} = 1.9\text{ V}$, $T_j = 60\text{ }^{\circ}\text{C}$, Reference Gain (0 dB)
All pixel scan mode (MODE0), 29.97 frame/s)

Item	Symbol	Min.	Typ.	Max	Unit	Remarks
Current consumption (Analog)	I_{ADD}	—	—	62	mA	
Current consumption (Digital 1)	I_{DDD1}	—	—	190	mA	
Current consumption (Digital 2)	I_{DDD2}	—	—	1	mA	
Standby current (Analog)	I_{ADDSTB}	—	—	35	μA	In the dark
Standby current (Digital 1)	$I_{DDD1STB}$	—	—	13	mA	In the dark
Standby current (Digital 2)	$I_{DDD2STB}$	—	—	20	μA	In the dark
PGA gain variable range	PGAG	0	—	27	dB	

Supply Voltage and I/O Voltage

Item		Pins	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	Analog	V _{DD} SUB, V _{DD} HCM, V _{DD} HPX, V _{DD} HDA, V _{DD} HCP	V _{ADD}	2.70	2.80	2.90	V
	Digital 1	V _{DD} LCN, V _{DD} LSC1 to 2, V _{DD} LPL1, V _{DD} LPA, V _{DD} LPL2 to 3, V _{DD} LIF	V _{DDD1}	1.10	1.20	1.30	V
	Digital 2	V _{DD} MIO, V _{DD} MIF	V _{DDD2}	1.70	1.80	1.90	V
Digital input voltage		SDA, SCL	V _{IH1}	0.7 × V _{DDD2}	—	1.9	V
			V _{IL1}	−0.3	—	0.3 × V _{DDD2}	V
		XCLR, INCK	V _{IH2}	0.65 × V _{DDD2}	—	V _{DDD2} + 0.3	V
			V _{IL2}	−0.3	—	0.35 × V _{DDD2}	V
Digital output voltage		XHS, XVS	V _{HVOUT}	—	V _{DDD2}	—	V

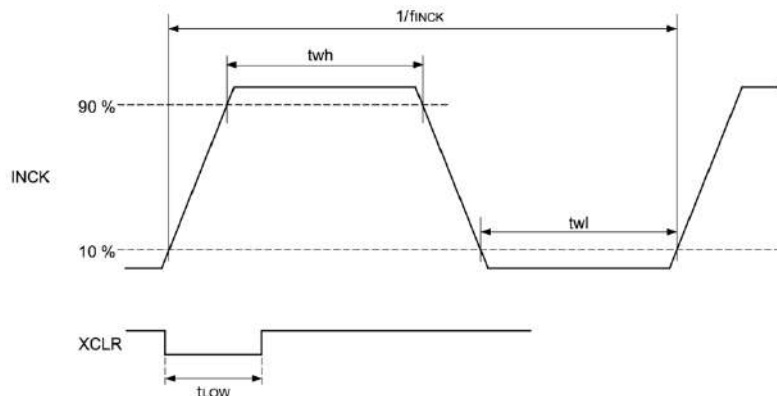


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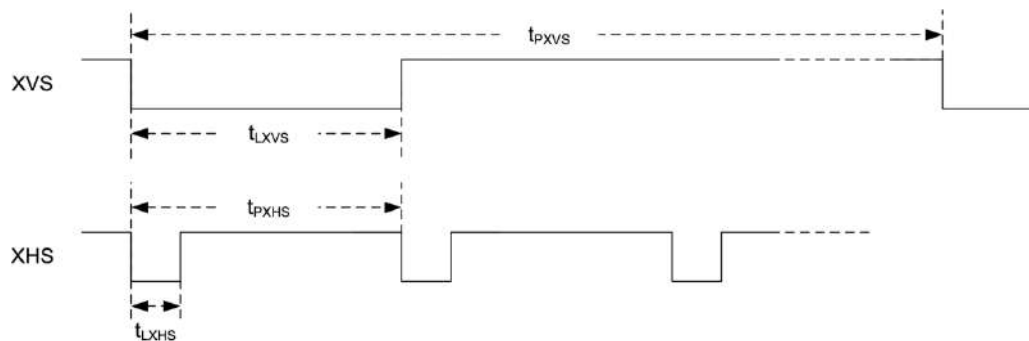
AC Characteristics

INCK, XCLR



Item	Symbol	Min.	Typ.	Max.	Unit
INCK clock frequency	f_{INCK}	6	—	27	MHz
INCK Low level pulse width	t_{wl}	5	—	—	ns
INCK High level pulse width	t_{wh}	5	—	—	ns
Clock duty	—	40	50	60	%
XCLR Low level pulse width	t_{LOW}	100	—	—	ns

XHS, XVS (Output)



Item	Symbol	Min.	Typ.	Max.	Unit	Remarks
XHS Low level pulse width	t_{LXHS}		222		ns	16 clk@72MHz
XHS pulse period	t_{PXHS}		$HMAX^{*1}$		clk@72MHz	
XVS Low level pulse width	t_{LXVS}		t_{PXHS}		clk@72MHz	
XVS pulse period	t_{PXVS}		$HMAX^{*1} \times VMAX^{*2}$		clk@72MHz	

^{*1} The value set as HMAX (address 30F6h, bit [7:0] and address 30F7h, bit [7:0])

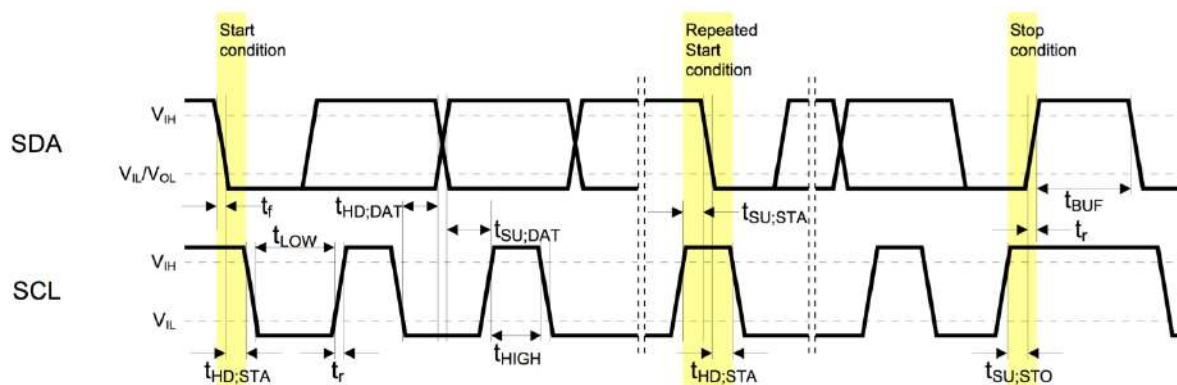
^{*2} The value set as VMAX (address 30F8h, bit [7:0], address 30F9h, bit [7:0] and address 30FAh, bit [3:0]).



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I²C Communication



I²C Specification

Item	Symbol	Min.	Typ.	Max.	Unit	Remarks
Low level input voltage	V_{IL}	-0.3	—	$0.3 \times V_{DD2}$	V	
High level input voltage	V_{IH}	$0.7 \times V_{DD2}$	—	1.9	V	
Low level output voltage	V_{OL}	0	—	$0.2 \times V_{DD2}$	V	$V_{DD2} < 2\text{ V}$, Sink 3 mA
Output fall time	t_{of}	—	—	250	ns	Load 10 pF to 400 pF, $0.7 \times V_{DD2}$ to $0.3 \times V_{DD2}$
Input current (SCL, SDA, XCLR, INCK)	I_i	-10	—	10	μA	$0.1 \times V_{DD2}$ to $0.9 \times V_{DD2}$
Input capacitance of SCL / SDA	C_i	—	—	10	pF	

I²C AC Characteristics

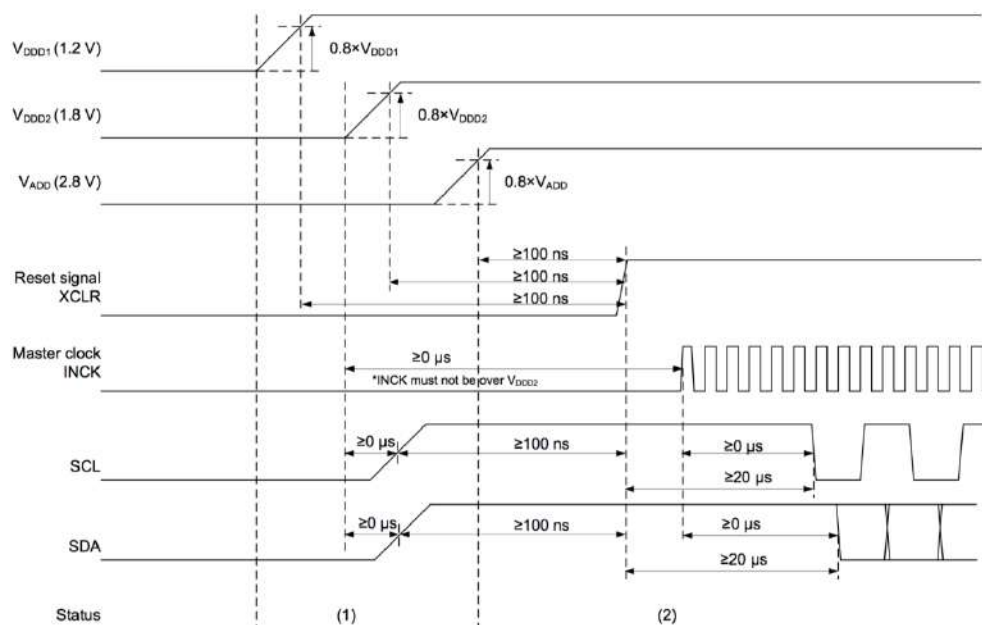
Item	Symbol	Min.	Typ.	Max.	Unit
SCL clock frequency	f_{SCL}	0	—	400	kHz
Hold time (Start Condition)	$t_{HD;STA}$	0.6	—	—	μs
Low period of the SCL clock	t_{LOW}	1.3	—	—	μs
High period of the SCL clock	t_{HIGH}	0.6	—	—	μs
Set-up time (Repeated Start Condition)	$t_{SU;STA}$	0.6	—	—	μs
Data hold time	$t_{HD;DAT}$	0	—	0.9	μs
Data set-up time	$t_{SU;DAT}$	100	—	—	ns
Rise time of both SDA and SCL signals	t_r	—	—	300	ns
Fall time of both SDA and SCL signals	t_f	—	—	300	ns
Set-up time (Stop Condition)	$t_{SU;STO}$	0.6	—	—	μs
Bus free time between a STOP and START Condition	t_{BUF}	1.3	—	—	μs



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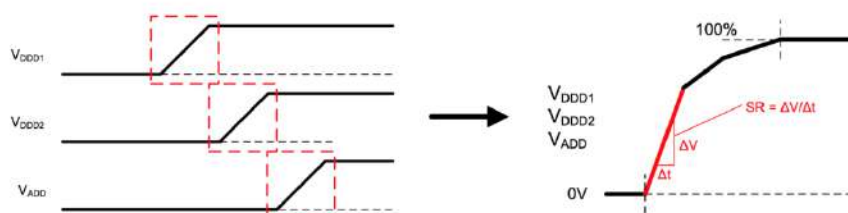
Power-on Sequence



Period name	Remarks
(1) Power stabilization period	All input signals are set to Low level. There are no constraints of the power-on sequence with V_{DD} , V_{DD1} , and V_{DD2} .
(2) Register communication period for standby cancel	Wait 100 ns after the last power supply in V_{DD} , V_{DD1} and V_{DD2} . Then set XCLR to "H" and start the standby cancel sequence.

Slew Rate Limitation of Power-on Sequence

Conform to the slew rate limitation shown below when power supply change 0 V to each voltage (0 % to 100 %) in power-on sequence.



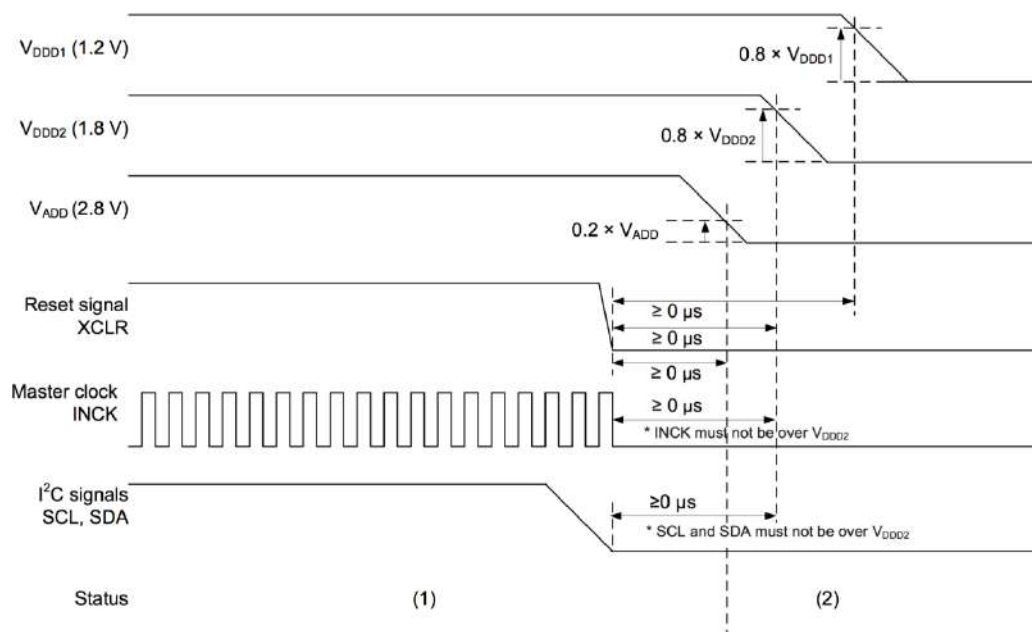
Item	Symbol	Power supply	Min.	Max.	Unit	Remarks
Slew rate	SR	V_{DD1} (1.2 V)	—	25	mV/us	
		V_{DD2} (1.8 V)	—	25	mV/us	
		V_{DD} (2.8 V)	—	25	mV/us	



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Power-off Sequence



Period name	Remarks
(1) Pixel output period	Pixel signal output period
(2) Power-off period	<p>Turn the power supplies off after all input signals are set to "Low" level except SCL and SDA.</p> <p>Set SCL and SDA to "Low" level at the same time with turning off the power supply of V_{DD2}.</p> <p>There are no constraints of the power-off sequence with V_{ADD}, V_{DD1}, and V_{DD2}.</p>



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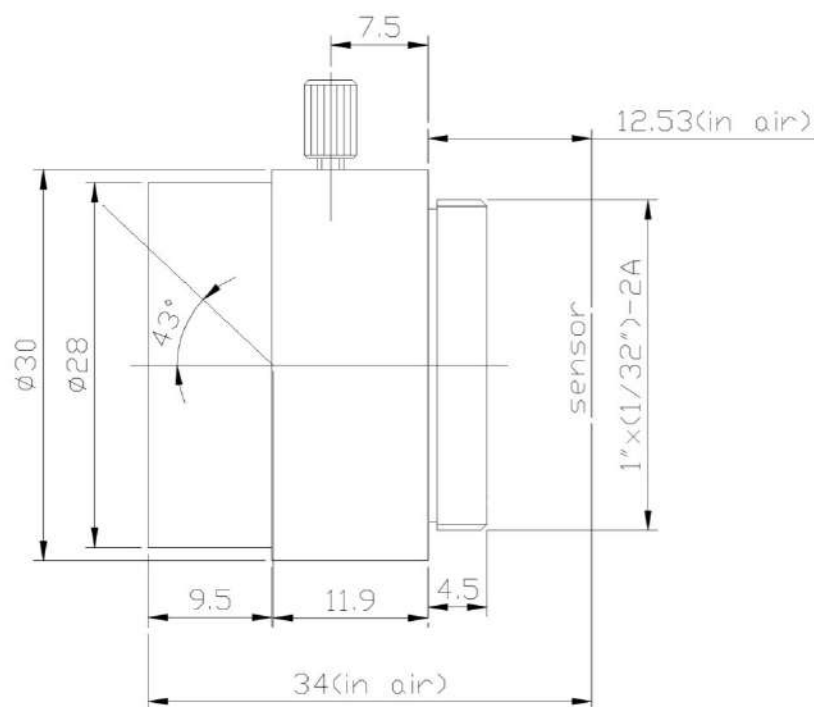
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10 Megapixel IR Series

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		

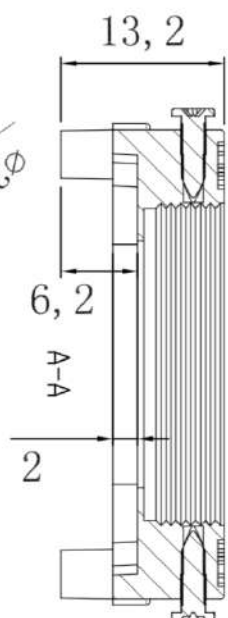


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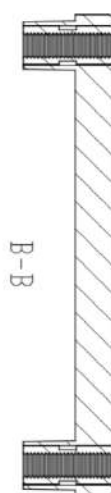
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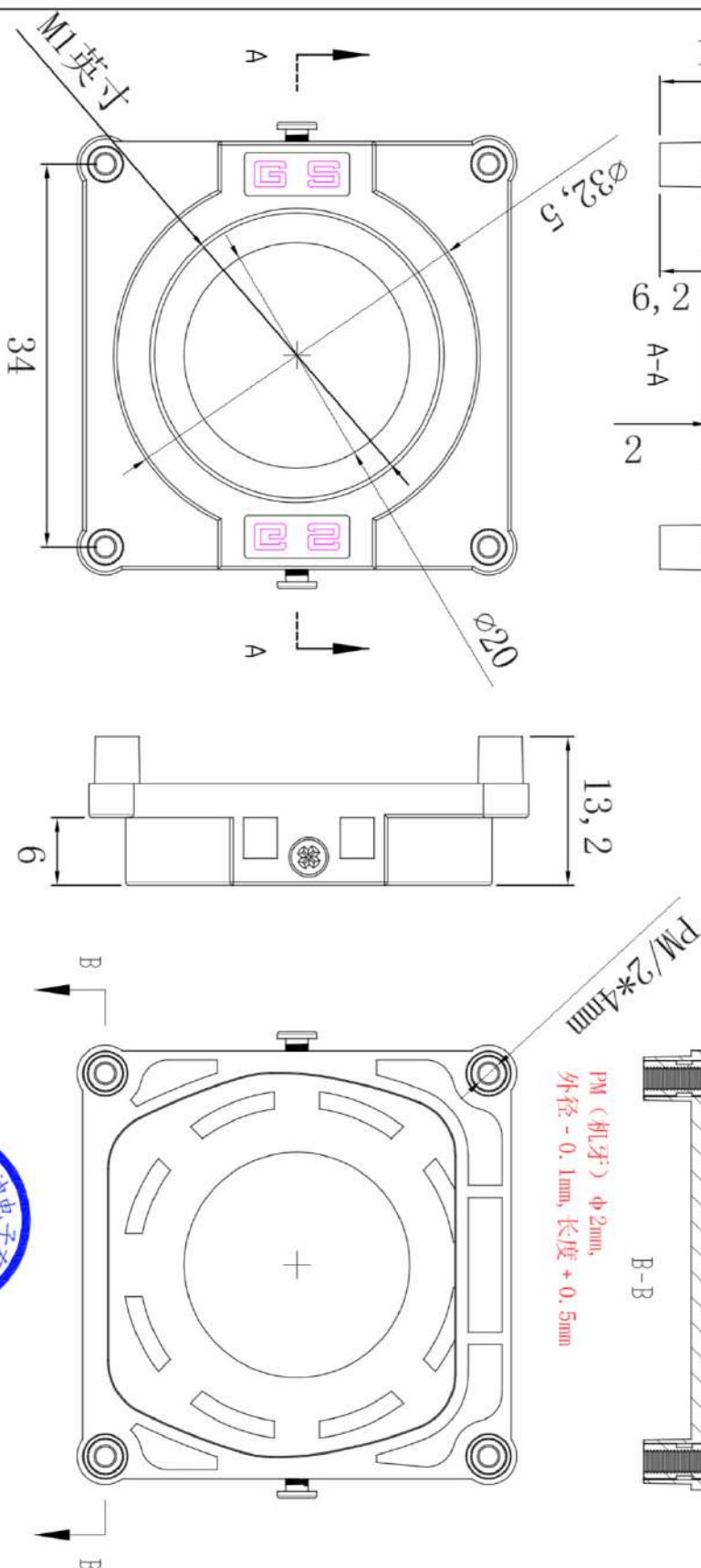
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螺丝PA(自攻) $\phi 2 \times 7 \text{ mm}$



PM (机牙) $\phi 2\text{mm}$,
外径 - 0.1mm, 长度 + 0.5mm



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%

设计	厂由	单位	公差
制图	广元	比例	±0.05
		2:1	2010-12-01
		日期	

型号	
额定电压	

GS5B-38S

作电压

使用壽命

-40°C ~ +100°C ± 5%

图号	IRC/5-385
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额定电流

瞬间电流

联系人:吴国虎

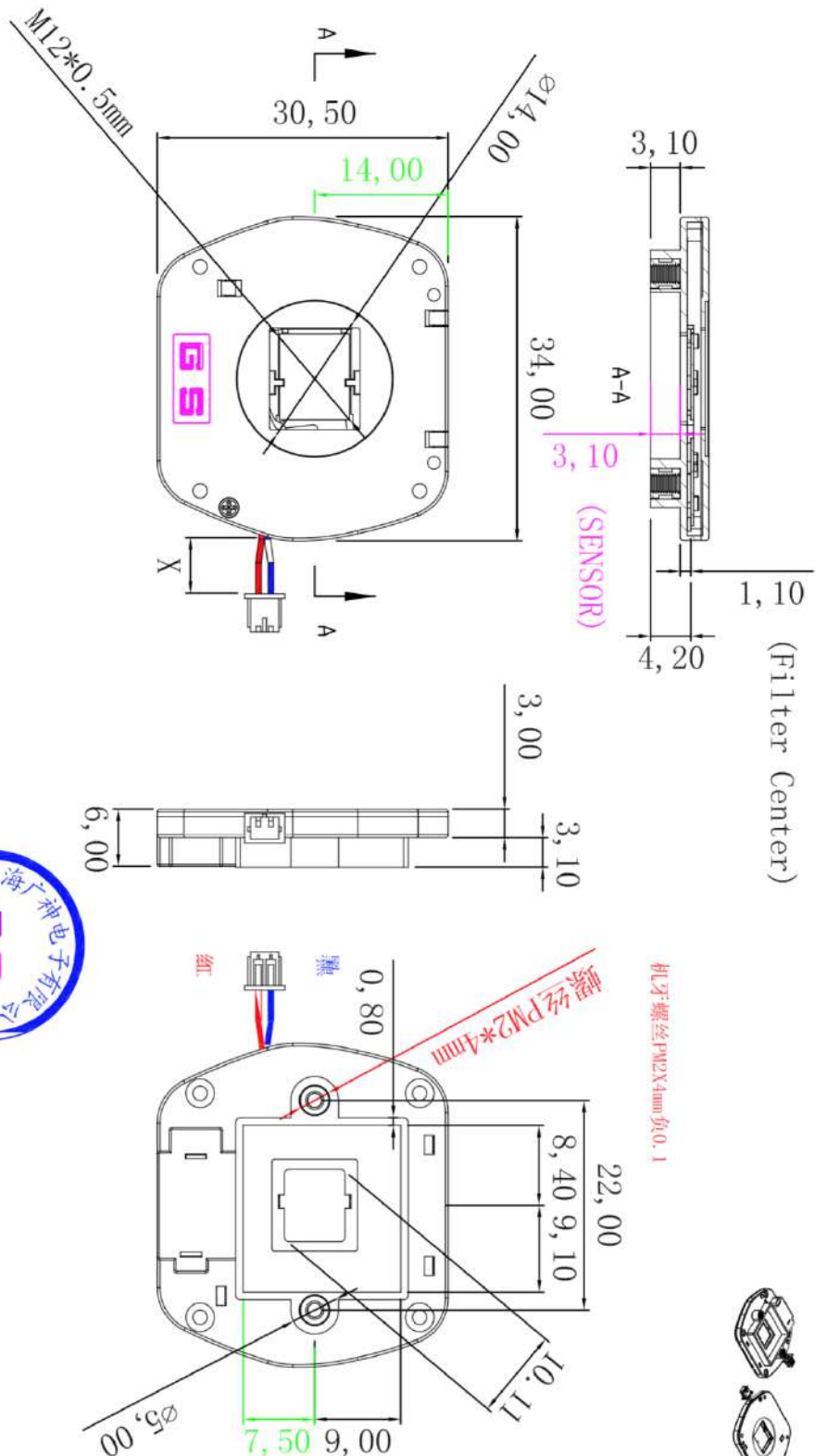
电话: 86-13501551929

直流电阻

绝缘电阻



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上海广神电子(深圳)有限公司

上海广神电子（深圳）有限公司						感红外日夜转换器 EXPLAIN						
设计	产地	单位	mm	公差	±0.05	型号		GS5B-2230-CS		工作环境		-20℃~+60℃
制图	产地	比例	2:1	日期	2010-12-01	额定电压		3.5V	工作电压	3.3V~12V, At20℃	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						直流电阻		100ohm±10%, At 20℃		绝缘电阻		
电话:86-13501551929												

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EXPLAIN

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Mouser Electronics

Authorized Distributor

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