

**PRODUCT** : CAMERA MODULE  
**MODEL NO.** : CS8239-A030SF-E  
**SUPPLIER** : TRULY OPTO-ELECTRONICS LTD.  
**DATE** : August 12 ,2010



CERT. No. 946535  
ISO9001  
TL9000

# SPECIFICATION

Revision: 0.1

**CS8239-A030SF-E**

If there is no special request from customer, TRULY OPTO-ELECTRONICS LTD. will not reserve the tooling of the product under the following conditions:

1. There is no response from customer in two years after TRULY OPTO-ELECTRONICS LTD. submit the samples;
2. There is no order in two years after the latest mass production.

And correlated data (include quality record) will be reserved one year more after tooling was discarded.

**TRULY OPTO-ELECTRONICS LTD: CUSTOMER:**

Quality Assurance Department: _____
Approved by:
Technical Department: _____

Approved by:
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WRITTEN BY	CHECKED BY	APPROVED BY
LIN XIAO NI	WEI YOU XING	LIU TIE NAN

**MODULE INFORMATION**

<b>Module No.</b>	<b>CS8239-A030SF-E</b>
Module Size	38.0mm X 38.0mm X 25.3mm
Image Quality	≥380TV Line
Power supply	DC 12V+/-10%
Sensor	RJ2421FAOPB (CCD)
Lens	1/4inch 4Glass+IR
Focus(F.No)	2.0
View Angle	92°
Object Distance	20cm-infinity
Array Size	320K
Number of Image Pixels	Horizontal 512 x vertical 582
Variable Electronic Shutter	1/50 to 1/100000 s
Output Formats	PAL

**PIN ASSIGNMENT**

<b>No.</b>	<b>Name</b>	<b>Pin type</b>	<b>Description</b>
1	VIDEO OUTPUT	Analog	Composite video signal output
2	GND	POWER	Ground
3	POWER IN	POWER	Power Supply for module(4.5V~9V)

## Electrical Characteristics

### 1. ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Output transistor drain voltage	$V_{OD}$	0 to +18	V
Overflow drain voltage	$V_{OFD}$	0 to +37	V
Overflow drain output	$V_{OOFD}$	Internal output(Note 1)	
Reset gate clock voltage	$V_{\phi RS}$	Internal output(Note 2)	
Vertical shift register clock voltage	$V_{\phi V}$	-10.5 to +17.5	V
Horizontal shift register clock voltage	$V_{\phi H}$	-0.3 to +12	V
Voltage difference between P-well and vertical clock	$V_{PW}-V_{\phi V}$	-28.0 to 0	V
Voltage difference between vertical clocks	$V_{\phi V}-V_{\phi V}$	0 to +1.5(Note3)	V
Storage temperature	Tstg	-40 to +90	°C
Ambient operating temperature	Topr	-30 to +85	°C

(Note 1) Use the circuit parameter indicated in “8. STANDARD OPERATING CIRCUIT EXAMPLE” and do not connect to DC voltage directly. When OOFD is connected to GND, connect VOD to GND.

(Note 2) Do not connect to DC voltage directly. When  $\phi_{RS}$  is connected to GND, connect  $V_{OD}$  to GND. Reset gate clock is applied below 8Vp-p.

(Note 3) When clock width is below  $10 \mu s$ , and clock duty factor is below 0.1%, voltage difference between vertical clocks is will be below 27V.

### 2. RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min	Typl	Max	Unit
Operating ambient temperature	Topr		25.0		°C
Output transistor drain voltage	$V_{OD}$	14.55	15.0	15.45	V
Overflow drain clock p-p level (Note1)	$V_{\phi OFD}$	21.5		23.5	V
Ground	GND		0.0		V
P-well voltage (Note2)	$V_{pw}$	-9.0		$V_{\phi VL}$	V
Vertical shift register clock LOW level	$V_{\phi V1AL}, V_{\phi V2L}$ $V_{\phi V3AL}, V_{\phi V4L}$	-8.5	-8.0	-7.5	V
Vertical shift register clock INTERMEDIATE level	$V_{\phi V1AI}, V_{\phi V2I}$ $V_{\phi V3AI}, V_{\phi V4I}$		0.0		V
Vertical shift register clock HIGH level	$V_{\phi V1AH}$ $V_{\phi V3AH}$	14.55	15.0	15.45	V
Horizontal shift register clock LOW level	$V_{\phi H1L}, V_{\phi H2L}$	-0.05	0.0	0.05	V
Horizontal shift register clock HIGH level	$V_{\phi H1H}, V_{\phi H2H}$	3.0	3.3	3.6	V
Reset gate clock p-p level (Note 1)	$V_{\phi RS}$	3.0	3.3	3.6	V
Vertical shift register clock Frequency	$f_{\phi V1A}, f_{\phi V2}$ $f_{\phi V3A}, f_{\phi V4}$		15.63		kHz
Horizontal shift register clock frequency	$f_{\phi H1}, f_{\phi H1}$		9.66		MHz
Reset gate clock frequency	$f_{\phi RS}$		9.66		MHz

### 3. CHARACTERISTICS

Ambient temperature : +25°C, but +60°C for parameter No.4 and on 5.

Operating conditions : the typical values specified in “5 RECOMMENDED OPERATING CONDITION”.

Color temperature of light source : 3200K ,IR cut-off filter (CM-500,1mmt) is used.

No.	Parameter	Symbol	Note	Minimum	Typical	Maximum	Unit
1	Standard output voltage	Vo	(1)		150		mV
2	Photo response non-uniformity	PRNU	(2)			15	%
3	Saturation output voltage	Vsat	(3)	1000			mV
4	Dark output voltage	Vdark	(4)		0.5	3.0	mV
5	Dark signal non-uniformity	DSNU	(5)		0.5	2.0	mV
6	Sensitivity	R	(6)	1300	1650		mV
7	Smear ratio	SMR	(7)		-130	-110	dB
8	Image lag	AI	(8)			1.0	%
9	Blooming suppression ratio	ABL	(9)	1000			
10	Current dissipation	I <sub>OD</sub>			5.0	9.0	mA
11	Output impedance	Ro			200		Ω
12	Vector breakup		(10)			7.0	°, %
13	Line crawling		(11)			3.0	%
14	Lumminance flicker		(12)			2.0	%

**Note: For more information of sensor please refer to the RJ2421FAOPB specification.**

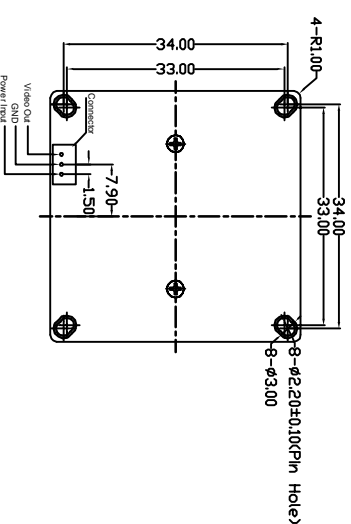
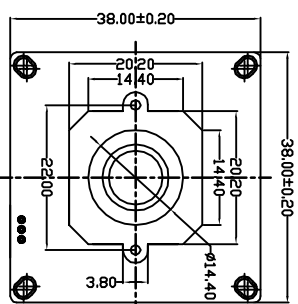
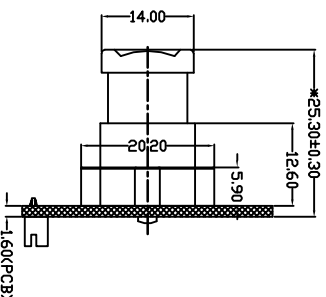
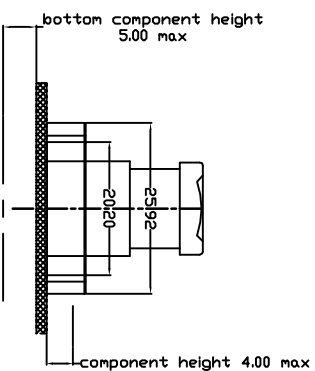
# ROHS

Customer No.:

## CS8239-A030SF-E Camera Module

### 3PIN DESCRIPTION

PIN NO	NAME
1	Video Out(PAL)
2	GND
3	Power Input DC12V±10%



- NOTICE:**
1. Unspecified Tolerance ±0.20mm
  2. \* IS Critical Dimension

主要参数 (Module Specification)	
焦距 (mm)	3.6 mm
光圈 (F-NO)	2.0
视场角 (View Angle)	92°
畸变 (Distortion)	< 5 %
解像力 (Image Quality)	≥ 800 TV Line
景深 (Focusing Range)	30 cm~Infinity
感光芯片 (Chip Type)	R12421FA0FB
像素 (Array Size)	320K
镜头类型 (Lens Size)	1/4 INCH 4G+IR

CUSTOMER APPROVE		AMEND		TOLERANCE !	
Mechanical	Electrical			DECIMAL	PRODUCT NO.
△	△			xx ± .20	CS8239-A030SF-E
△	△			± 1/4	D/WN 梁晓龙 20100731
△	△				DSN 梁晓龙 20100731
ND.		CONTENT	DATE		CHKD Francis 20100731 APPD 刘铁楠 20100731
					DRAW NO. 标准品
					REV A

**TRULY** OPTO-ELECTRONICS LTD.

**Image Specification**

<b>NO.</b>	<b>Item</b>	<b>Standard</b>	<b>Important Class</b>
1	TV Line	Center $\geq$ 380 8 point of 0.7 viewing field $\geq$ 250	A
2	Dust	No dust in the center viewing area; Border area according to the limit samples	A
3	Dead pixel	No in the viewing area.	A
4	Distortion	$<$ 5%	B

**QA Plan**

NO.	Item	Sampling frequency	Measure	Remark
Image and reliability item				
1	TV Line	AQL 0.65 II Class	Same as production	100% Inspection
2	Dust	AQL 0.65 II Class	Same as production	100% Inspection
3	Dead pixel	AQL 0.65 II Class	Same as production	100% Inspection
4	Distortion	N=5,c=0 per batch	Same as production	Sampling by QA
Appearance Check Items				
1	Top side of Lens	AQL 1.0 II Class	Same as production	100% Inspection
2	Screw glue	AQL 1.0 II Class	Same as production	100% Inspection
3	L1 Glass	AQL 1.0 II Class	Same as production	100% Inspection
4	Holder	AQL 1.5 II Class	Same as production	100% Inspection
5	Sealed glue	AQL 1.0 II Class	Same as production	100% Inspection
6	FPC/PCB	AQL 1.0 II Class	Same as production	100% Inspection
7	Connector	AQL 1.0 II Class	Same as production	100% Inspection
8	Gold finger	AQL 1.0 II Class	Same as production	100% Inspection
9	Stiffener	AQL 1.5 II Class	Same as production	100% Inspection
10	Double coated tapes	AQL 1.5 II Class	Same as production	100% Inspection
11	Protective film	AQL 1.5 II Class	Same as production	100% Inspection

Sample:

Referenced standard: GB/T 2828.1-2003/ISO 2859-1:1999 and ANSI/ASQC.4-1993 II

**Reliability Specification**

No.	Test item	Test condition
1	Temperature strike cycle [Power off]	Low temperature:-30°C±2°C for 30 min High temperature:+80°C±2°C for 30 min Cycle:10 times
2	High temperature and high humidity operating	Temperature:40°C Humidity:90%RH Time:48 hours
3	High temperature and high humidity storage	Temperature:60°C Humidity:90%RH Time:120 hours
4	Low temperature operating	Temperature:-20°C±2°C Time:120 hours
5	High temperature operating	Temperature:70°C±2°C Time:120 hours
6	Low temperature storage	Temperature:-30°C±2°C Time:120 hours
7	High temperature storage	Temperature:80°C±2°C Time:120 hours
8	ESD test [Power off]	C:150pF R:330Ω Voltage: ±2KV Air discharge: Cycle:10 times
9	Vibration Test [Packaged]	Frequency:10Hz~55Hz~10Hz Amplitude:1.5 mm Times: each X,Y,Z directions for 60mins
10	Dropping test [Packaged]	Product dropping from 150cm height to smooth marble Drop style:1 coner,3 arris,6 faces Test times:10

## Package Specification

### Packaging Design

TBD

### PRIOR CONSULT MATTER

- ①For Truly standard products, we keep the right to change material, process for improving the product property without notice on our customer.
- ②For OEM products, if any change needed which may affect the product property, we will consult with our customer in advance.
2. If you have special requirement about reliability condition, please let us know before you start the test on our samples.

### FACTORY CONTACT INFORMATION

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