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| MODEL NO. NFMS2-K01-AM7M-003 | TITLE SPECIFICATION SHEET | CUSTOMER NAME - |
| REVISION NO. 00 | | PROJECT NAME - |

AF COMPACT CAMERA MODULE SUPPLY SPECIFICATION

Product Type: 1/3.2" type 2M Pixels CMOS Camera Module

Model Name: NFMS2-K01-AM7M-003

Type: AM7M Series

Revision History

| Revision | Release Date | Description | Drawn | Checked | Approved |
|----------|---------------|-----------------|-------|---------|----------|
| 00 | 2007. 10. 16. | Initial release | Jimmy | - | JGKim |
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1. Sensor Specifications

| Items | Specifications | Remark |
|--------------------|----------------------------------|--------|
| Optical Format | 1/3.2 inch (4:3) | |
| Full resolution | 1,600H x 1200V (UXGA) | |
| Scanning Method | Progressive Scan | |
| Color Filter Array | RGB Bayer Pattern | |
| Shutter Type | Electronic Rolling Shutter (ERS) | |

- For more details refer to MT9D111 datasheet.

2. Optical Specifications

| Items | Specifications | Remark |
|----------------|----------------|--------|
| Focal Length | 4.55mm± 0.15mm | |
| F Number | F/2.8(±0.1) | |
| Viewing Angle | 62.6°(±1°) | |
| Lens Structure | 1G3P | |

3. Performances

| Items | Min. | Typ. | Max. | Unit | Remark |
|--------------------------------|------|------|------|-------|--------|
| Horizontal resolution @ center | 700 | - | - | LW/PH | |
| Horizontal resolution @ corner | 500 | - | - | LW/PH | |
| Minimum object illumination | - | - | 10 | lx | |
| Difference of field angle | - | - | 8 | % | |

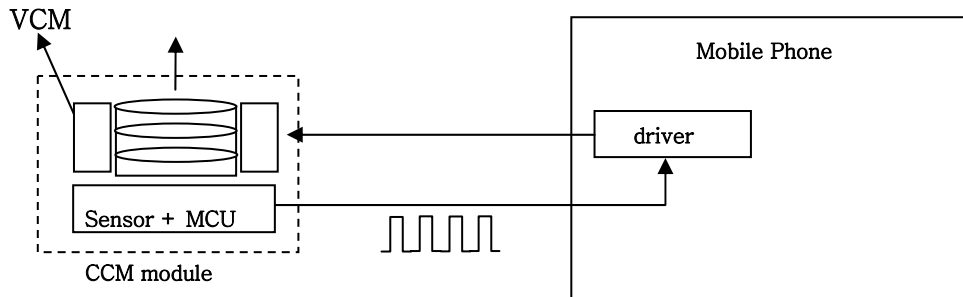
4. Interface

| Items | Specifications | Remark |
|----------------------|------------------|---------|
| Image interface | Parallel | |
| System interface | I ² C | |
| AF control interface | PWM | Note(1) |

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[Note]

(1) AF control interface



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5. Connector Pin Assignment

| No | Name | I/O | Function |
|----|------------|-----|--|
| 1 | GND | P | Ground |
| 2 | PCLK | O | Pixel Clock |
| 3 | Driver_EN | O | VCM driver On |
| 4 | MCLK | I | Main Clock |
| 5 | STANDBY | I | Standby Signal from host (Active High) |
| 6 | RESET | I | Reset (Active Low) |
| 7 | VDDC | P | Digital Power (+ 1.8 V) |
| 8 | SDA | I/O | I ² C data line |
| 9 | SCL | I | I ² C clock line |
| 10 | VDDQ | P | Digital Power (+ 2.8 V) |
| 11 | VSYNC | O | Frame Synchronization Signal |
| 12 | VAAS | P | Analog Power (+ 2.8 V) |
| 13 | GND | P | Ground |
| 14 | HSYNC | O | Line Synchronization Signal |
| 15 | Dout0 | O | Data bit 0 |
| 16 | Dout1 | O | Data bit 1 |
| 17 | Dout2 | O | Data bit 2 |
| 18 | Dout3 | O | Data bit 3 |
| 19 | Dout4 | O | Data bit 4 |
| 20 | Dout5 | O | Data bit 5 |
| 21 | Dout6 | O | Data bit 6 |
| 22 | Dout7 | O | Data bit 7 |
| 23 | Driver_OUT | I | VCM driving Voltage from Driver |
| 24 | Driver_IN | O | PWM signal from Sensor |

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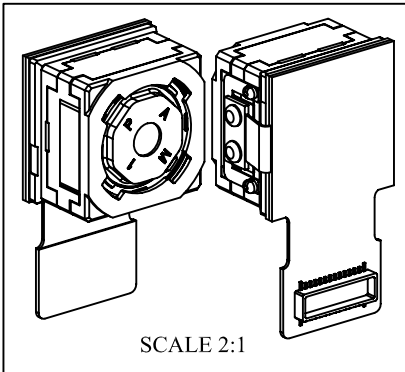
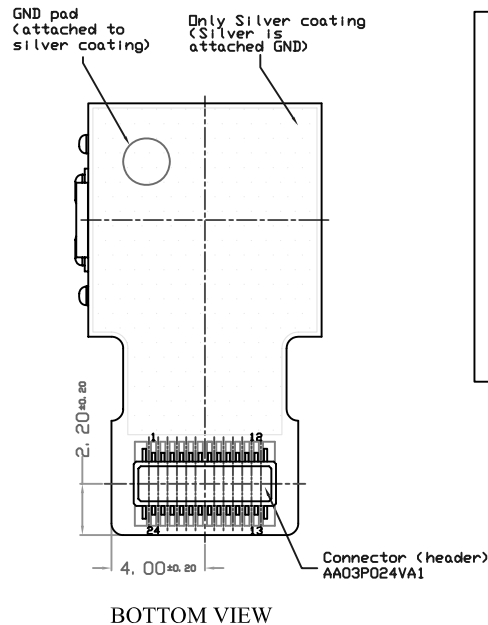
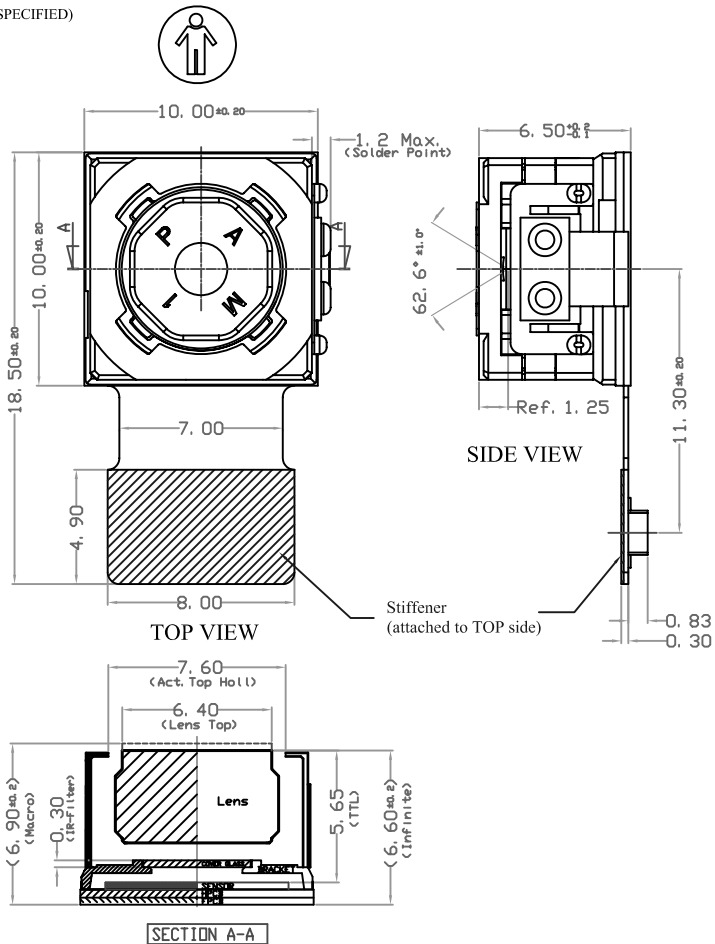
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|------------|------------------------------------|-------------|------------------|-----------------|
| 기 호 SYM | 변 경 내 용 DESCRIPTION OF REVISION | 일 자 DATE | 변 경 자 REVISED | 승 인 APPROVED |
|------------|------------------------------------|-------------|------------------|-----------------|

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DIMENSIONS: MM
TOLERANCE: +/-0.1 (UNLESS OTHER SPECIFIED)

| PIN NO. | Signal Number |
|---------|---------------|
| 1 | GND |
| 2 | PCLK |
| 3 | Driver_EN |
| 4 | MCLK |
| 5 | STANDBY |
| 6 | RESET |
| 7 | VDDC(+1.8V) |
| 8 | SDA |
| 9 | SCL |
| 10 | VDDQ(+2.8V) |
| 11 | VSYNC |
| 12 | VAAS(+2.8V) |
| 13 | GND |
| 14 | HSYNC |
| 15 | DATA0 |
| 16 | DATA1 |
| 17 | DATA2 |
| 18 | DATA3 |
| 19 | DATA4 |
| 20 | DATA5 |
| 21 | DATA6 |
| 22 | DATA7 |
| 23 | Driver_OUT |
| 24 | Driver_IN |



| ITEM NO. | PART NAME | DESCRIPTION |
|----------|-----------------|---------------------|
| 1 | SENSOR | MT9D111 |
| 2 | ACTUATOR | AM7M_ACTUATOR |
| 3 | LENS | Kolen (KL46T428M7B) |
| 4 | FPCB | FPCB 10X18.5 |
| 5 | COVER GLASS | IR CUT FILTER |
| 6 | BRACKET | HCM_M7M1_BK05 |
| 7 | HPCB | HPCB 10x10 |
| 8 | CONNECTOR (JAE) | AA03-P024VA1 |

| NO | 품 번 PART NO. | 품 명 TITLE | 수 량 QUANTITY | 비 고 REMARK |
|----|-----------------|--------------|-----------------|--------------------|
| | | DRAWN BY | CHECKED BY | APPROVED BY |
| | | Jimmy | | JGKim |
| | | 07/06/19 | 07/06/19 | DATE 07/06/19 |
| | | MATERIAL | REF. | TITLE |
| | | NONE | UNIT mm | NFMS2-K01-AM7M-003 |
| | | FINISH | SCALE 3 / 1 | DWG NO. |
| | | | 3RD PRJ | NCM-M7M1-MD03-E0 |