

## ITM-M-21 (PAL) ITM-M-22 (NTSC) B/W Camera Module



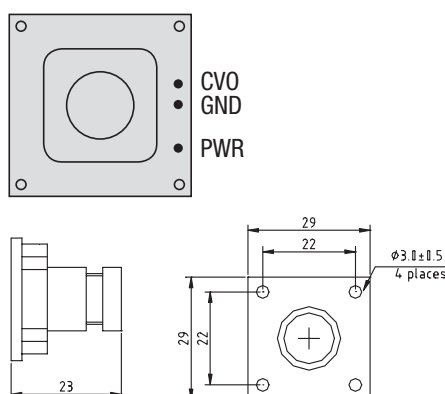
### General Description

This is a family of products based on the most advance CMOS mixed signal technology. It integrates image array, signal processing, timing and control circuitry, all on a single chip, enabling all aspects of B/W video camera applications. It is ideal for applications requiring a small footprint, low power and low cost.

### Features

- Small size ..... (29 × 29 mm )
- Full resolution ..... 365,000 pixel
- Wide operation voltage..... (8 – 15V)
- Minimum external component
- Low power consumption..... <200mW
- Direct connect to standard video monitor
- On-chip auto exposure control
- Back light compensation
- Gamma correction ..... 0.45/1.0
- Auto gain control ..... 18dB
- Auto black level calibration

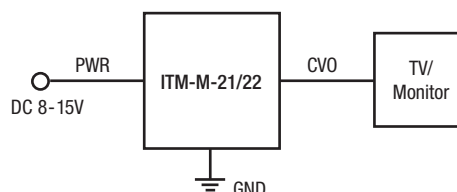
### Layout and Dimensions [in mm]



### Application Example

Visual door phone · Video conferencing  
Security and surveillance · Portable security device  
Industrial machine monitoring · Process control  
Video Phone · Toys

### Application Circuit



### Specification

| Item                 | ITM-M-21 (CCIR)                        | ITM-M-22 (EIA)         |
|----------------------|----------------------------------------|------------------------|
| Imager               | CMOS image sensor OV7410               |                        |
| Scanning             | 2:1 Interlace                          | 2:1 Interlace          |
| Shutter              | 1/60 to 1/15,000 sec                   | 1/60 to 1/15,000 sec   |
| Video Output         | 1V p-p composite video (75Ω)           |                        |
| Picture Element      | (H)628 × (V)582                        | (H)510 × (V)492        |
|                      | 365,000 pixel                          | 250,000 pixel          |
| Effective image area | 5.78 × 4.19mm                          | 4.69 × 3.54mm          |
| S/N Ratio            | >48dB (AGC on)                         | >48dB (AGC on)         |
| Min Illumination     | 0.5 Lux at f1.2                        | 0.5 Lux at f1.2        |
| Resolution           | 400 TV line                            | 400 TV line            |
| Iris Control         | Electronic                             | Electronic             |
| Supply Voltage       | 8 – 15VDC                              | 8 – 15VDC              |
| Connectors           | Video output, Video GND, DC power, GND |                        |
| Operating Temp       | -10°C to 55°C                          | -10°C to 55°C          |
| Humidity Limits      | 0 – 95%                                | 0 – 95%                |
| Lens (optional)      | f3.7mm, F2.0, FOV 70° × 63°            |                        |
| PCB Size             | 29 × 29 mm                             | 29 × 29 mm             |
| Fixed Pattern Noise  | <0.03% Vp-p                            | <0.03% Vp-p            |
| Dark Current         | <0.2nA/cm <sup>2</sup>                 | <0.2nA/cm <sup>2</sup> |
| Dynamic Range        | >72dB                                  | >72dB                  |