

Crystal Image through
Imaging Innovation

PIXELPLUS



*Preliminary
Brief Spec*

**1/4 inch VGA Single Chip
CMOS Image Sensor with NTSC/PAL Transmitter**

PC7080D

Rev 0.4

Last update : 11. Jun. 2019

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*1/4 inch VGA Single Chip
CMOS Image Sensor with NTSC/PAL Transmitter*

Features

- 648 x 488 effective pixel array with RGB bayer color filters and micro-lens
- Interface
 - Composite Output
 - CVBS(NTSC/PAL)
 - Digital Output
 - YCbCr422 / RGB565 / RGB444 / Bayer
 - Analog / Digital Output
 - ITU-R. BT6565 / CVBS
- Image processing on chip : lens shading compensation, gamma correction, defect correction, color correction, NR(2D noise reduction), color interpolation, edge enhancement, brightness, contrast, de-color, auto black level compensation, auto white balance, auto exposure control, back light compensation
- Programmable frame size, window size and position
- Free scaling (scale down)
- Horizontal/Vertical mirroring
- Automatic flicker cancellation
- I2C master included
- Chip address selection PAD
- Software reset
- On chip regulator for core
- Crystal input support

General Description

The PC7080D is a 1/4-inch CMOS image sensor with NTSC/PAL Transmitter. It's a single chip with effective pixel array of 648 (width) x 488 (height). The PC7080D can generate analog/digital/composite outputs at maximum frame rate of 60. On-chip sensor functions are controllable through I2C interface.

Table 1 Key Performance Parameter

Parameter	Typical value
Pixel size	5.6 [um] x 5.6 [um]
Effective pixel array	648 (H) x 488 (V)
Effective image area	3.63 [mm] x 2.73 [mm]
Optical format	1/4 [inch]

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Parameter	Typical value
Input clock frequency	27 [MHz]
Output interface	10/8-bit parallel with ITU-R. BT656 (CSP Package Only) CVBS (NTSC/PAL)
Max. frame rate	60 fps : ITU-R. BT656 @ 27[MHz] (for NTSC) 50 fps : ITU-R. BT656 @ 27[MHz] (for PAL) 60fields/sec NTSC(CVBS) @ 27[MHz] 50fields/sec PAL(CVBS) @ 27[MHz] 60 fps : YCbCr422/RGB565/RGB444 @ 54[MHz] 60 fps : Bayer @ 27[MHz]
Dark signal	14.5 [mV/sec] @ 60 [°C]
Sensitivity	13.2 [V/Lux.sec]
Power supply	AVDD : 3.3 [V] HVDD : 3.3 [V] CVDD : 3.3 [V] DVDD : 1.5 [V]
Power consumption	254.1 [mW]@dynamic @ NTSC 252.1 [mW] @dynamic @ PAL 157.1 [uW] @standby
Operating Temp. (Fully Functional Temp.)	-30~85 [°C] (Ambient)
Dynamic range	65.8 [dB]
SNR	48.6 [dB]