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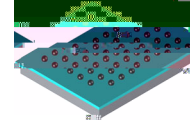
This survey is intended to collect your feedback, capture any issues you may encounter, and to provide improvements you would like to suggest.

We look forward to your feedback.

To learn more about **onsemi**, please visit our website at www.onsemi.com

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1/4.3-inch 1 MP CMOS Digital Image Sensor with Global Shutter AR0145CS



See detailed ordering and shipping information on page 2 of this data sheet.

The AR0145CS is a 1/4.3 inch CMOS digital image sensor with an active pixel array of 1280 (H) x 800 (V). It incorporates a new innovative global shutter pixel design optimized for accurate and fast capture of moving scenes. The sensor produces clear, low noise images in both low light and bright scenes. It includes sophisticated camera functions such as auto exposure control, windowing, row skip mode, column skip mode, pixel binning and both video and single frame modes. It is programmable through a simple two wire serial interface. The AR0145CS produces extraordinarily clear, sharp digital pictures, and its ability to capture both continuous video and single frames makes it the perfect choice for a wide range of applications, including scanning and industrial inspection.

If you would like more detailed information, please request the full version of our data sheet.

Optical Format	1/4.3-inch (4.23 mm)
Active Pixels	1280 (H) x 800 (V) not including 8 border pixels on each side
Pixel Size	2.8 μm
Color Filter Array	Monochrome
Chief Ray Angle	0 or 28
Shutter Type	Global Shutter
Input Clock Range	10–48 MHz
Output Interface	8/10-bit MIPI, 1/2-lane
Output Data Rate	Maximum Serial Output Data Rate 800 Mbps/lane
Frame Rate Full Resolution	120 fps (10-bit)
Responsivity Monochrome	41.9 ke-/lux*s
SNR _{MAX}	37 dB
Dynamic Range	65.3 dB
Supply Voltage I/O Digital Analog	1.8 V 1.2 V 2.8 V
Power Consumption	150 mW (Full Resolution, 120 fps)
Operating Temperature	(-30 C < T _J < +85 C)
Optimal Performance Temperature Range	(0 C < T _J < +60 C)
Package Options	5.73 x 4.41 mm 47-ball CSP θ_{JA} : 31.6 C/W (Note 1) θ_{JB} : 9.5 C/W Bare Die

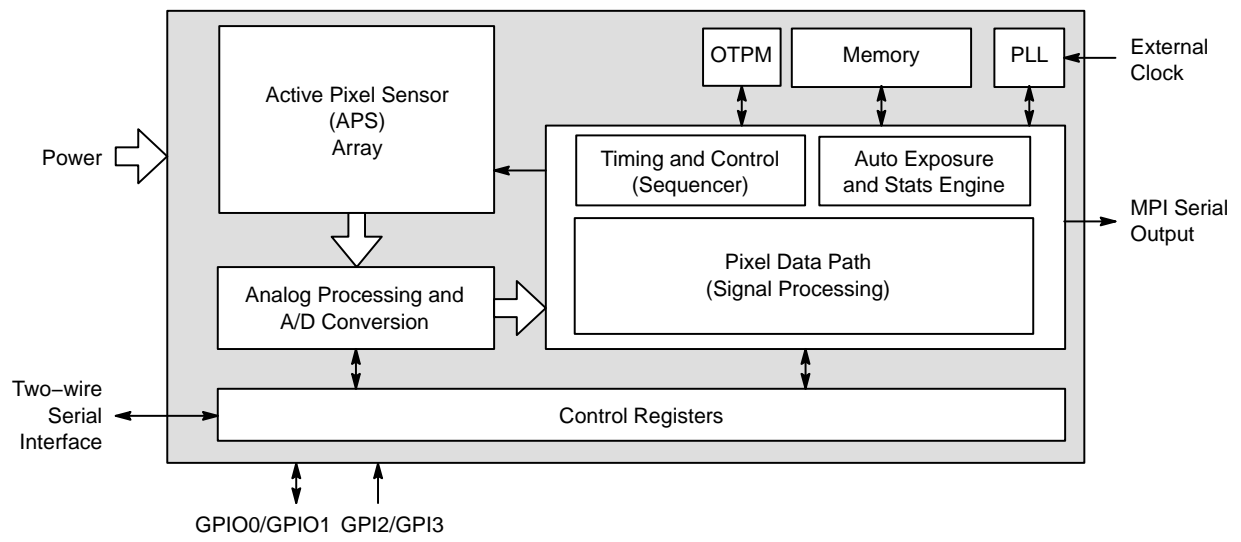
1. θ_{JA} is dependent on the customer module design and should not be used for calculating junction temperature.

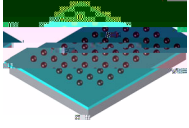
Superior Low light and IR Performance
1/2 lane 8/10 bit MIPI
Automatic Black Level Calibration (ABLC)
Horizontal and Vertical Mirroring,
Windowing and Pixel Binning
5 x 5 Statistics Engine for On chip Auto
Exposure Control for Any Programmable
Region of Interest (ROI)
Flexible Control for Row and Column Skip
Mode
On chip Trigger Mode for Synchronization
Built in Flash Control
Two On Chip Phase Lock Loop (PLL)
Context Switching
960 bytes One time Programmable Memory
(OTPM)
Simple Two wire Fast mode + Serial
Interface

Bar Code Scanner
Gesture Recognition
3D Scanning
Positional Tracking
Iris Scanning
Augmented Reality
Virtual Reality
Biometrics
Machine Vision

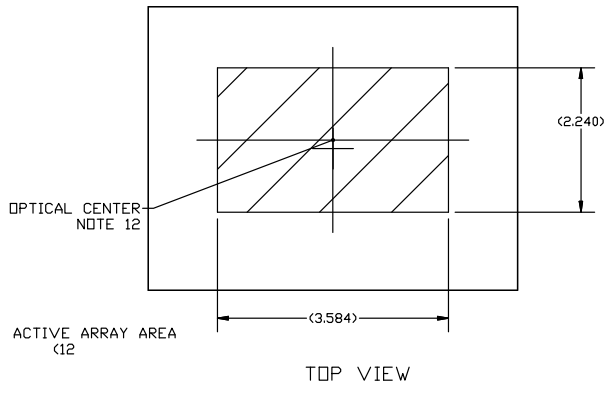
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