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

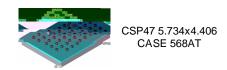
Description

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.

Table 1. KEY PERFORMANCE PARAMETERS

Parameter	Typical Value
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.



ORDERING INFORMATION

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

Non-NDA Data Sheet

Interested in what you see? If you would like more detailed information, please request the full version of our data sheet.

Request Full Data Sheet

Features

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

Applications

Bar Code Scanner

Gesture Recognition

3D Scanning

Positional Tracking

Iris Scanning

Augmented Reality

Virtual Reality

Biometrics

Machine Vision

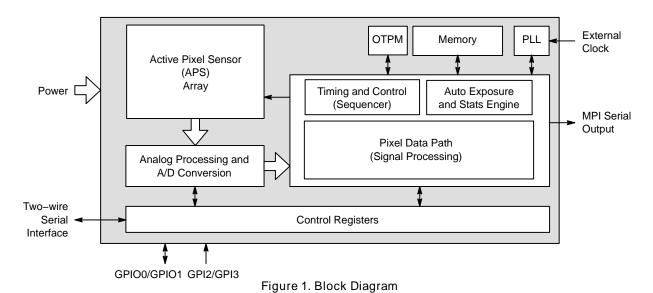
AR0145CS

ORDERING INFORMATION

Table 2. AVAILABLE PART NUMBERS

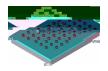
Part Number	Product Description	Product Attribute Description
AR0145CSSM00SMKA0-CP	Mono, 0 CRA	

AR0145CS



AR0145CS

PACKAGE DIMENSIONS



CSP47 5.734x4.406 CASE 568AT ISSUE O

