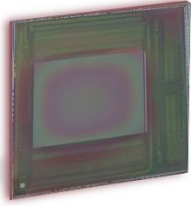


MT10212BD

1024×768-12µm Microbolometer ROIC



Features

- Advanced Microbolometer ROIC
- 1024 × 768 - 12 µm Array format
- 1, 2, or 4 channel digital outputs
- Programmable Biasing, Timing, and Windowing
- High Speed, Low Power, and Low Noise
- Tested ROIC parts on 200mm CMOS wafers

Technical Specifications

Array Format	1024 × 768			
Pixel Size	12 μm × 12 μm			
ROIC Operating Mode	Rolling Line			
Biasing and Timing	On-Chip Programmable			
Detector Resistance	30 kΩ ≤ R _{det} ≤ 90 kΩ			
Integration Time	Programmable from 1 μs to 1 ms in steps of 1 period of system clock			
Number of Outputs	Programmable 1, 2, or 4 channel digital video, 1,2 or 4 analog video output is optional			
Digital Outputs	14 bit parallel digital output - Data Rate: ≤ 40 MS/s - ≤560 Mbit/s			
Gain and Offset	On-Chip Programmable gain and offset			
Readout Modes	Rolling Line			
Windowing	Programmable size and location			
Frame Rate	≤ 40 fps for full window (1024×768)			
Supply Voltage	Analog : 3.3V Core and I/O		Digital: 1.8V Core, 3.3V I/O	
System / Data Clock	System: ≤ 20 MHz (Nominal 12 MHz)		Data: ≤ 40 MHz (Nominal 24 MHz)	
Programming Interface	Serial Programming Interface (SPI) For ROIC Command/Control and Non-Uniformity Correction (NUC) operations			
Power Dissipation	≤ 600 mW @ 30 fps with 4 outputs			
Output Noise Level	≤ 4 Count@14bit (≤ 0.5 mV rms at 300 K)			
Temperature	Operated with TEC: 25°C ≤ T _{op} ≤ 30°C Operated w/o TEC: -35°C ≤ T _{op} ≤ 60°C		Storage: -40°C ≤ T _{st} ≤ 80°C	
Temperature Sensor	On-chip sensor with 1mV/K sensitivity			
Wafer / Die Sizes, DPW	Wafer: 200 mm	Die: 20mm × 20mm	Total: 52 Dice	36 Functional Dice (Typical)
Pads	Dual pad structure: 1 for probing and 1 for wirebonding			
Package Pin Count	≤ 110			
Synchronization	Master Mode: self-triggered Slave Mode: Frame synchronization via frame sync input			