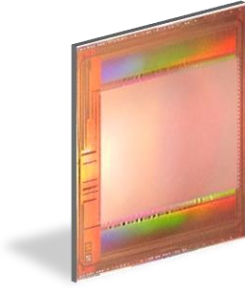


MT6417BA

640×480-17µm VGA Microbolometer ROIC



Features

- Advanced VGA Microbolometer ROIC
- 640×480-17 µm Array format
- 1, 2, or 4 analog outputs with optional reference
- Programmable Biasing, Timing, and Windowing
- High Speed, Low Power, and Low Noise
- Tested ROIC parts on 200mm CMOS wafers

Technical Specifications

Array Format	640×480				
Pixel Size	17 μm×17 μm				
ROIC Operating Mode	Rolling Line				
Biasing and Timing	On-Chip Programmable				
Detector Resistance (R _{det})	60 kΩ ±50%	200 kΩ ±50%	400 kΩ ±25%	750 kΩ ±25%	1 MΩ ±20%
	Gain 1x	Gain 2x	Gain 4x	Gain 8x	Gain 16x
Integration Time	Programmable from 1 μs to 1 ms in steps of 1 period of system clock				
Number of Analog Outputs	Programmable 1, 2, or 4 analog video, Programmable 1 or 2 analog reference				
Analog Outputs	Swing ≥ 2.0 V		Load Capacitance ≤ 15 pF		Load Resistance ≥ 10 MΩ
Gain and Offset	On-Chip Programmable gain and offset				
Readout Modes	Rolling Line				
Windowing	Programmable size and location				
Frame Rate	≤ 60 fps for full window (640×480)				
Supply Voltage	Analog : 3.3 V Core and I/O			Digital: 1.8 V Core, 3.3 V I/O	
System / Pixel Clock	System: ≤ 25 MHz (Nominal 20 MHz)			Pixel: ≤ 12.5 MHz (Nominal 10 MHz)	
Programming Interface	Serial Programming Interface (SPI) For ROIC Command/Control and Non-Uniformity Correction (NUC) Operations				
Power Dissipation	≤ 150 mW @ 60 fps with 2 outputs				
Output Noise Level	≤ 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: 200mm	Die: 14.1mm × 15.4 mm		Total: 100 Die	85 A+ Grade Die(Typical)
Pads	Dual pad structure: 1 for probing and 1 for wirebonding				
Package Pin Count	≤ 32				
Synchronization	Master Mode: self-triggered Slave Mode: Frame synchronization via frame sync input				
TEC-LESS Operation	Supported using dynamically updated NUC tables based on ROIC operation temperature				