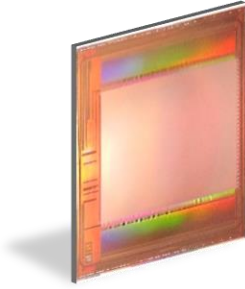


MT6417BA

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	$30\text{ k}\Omega \leq R_{\text{det}} \leq 90\text{ k}\Omega$		
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 $\geq 2.0\text{ V}$	Load Capacitance $\leq 15\text{ pF}$	Load Resistance $\geq 10\text{ M}\Omega$
Gain and Offset	On-Chip Programmable gain and offset		
Readout Modes	Rolling Line		
Windowing	Programmable size and location		
Frame Rate	$\leq 60\text{ fps}$ 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: $\leq 25\text{ MHz}$ (Nominal 20 MHz)		Pixel: $\leq 12.5\text{ MHz}$ (Nominal 10 MHz)
Programming Interface	Serial Programming Interface (SPI) For ROIC Command/Control and Non-Uniformity Correction (NUC) Operations		
Power Dissipation	$\leq 150\text{ mW}$ @ 60 fps with 2 outputs		
Output Noise Level	$\leq 0.5\text{ mV rms}$ at 300 K		
Temperature	Operated with TEC: $25\text{ }^{\circ}\text{C} \leq T_{\text{op}} \leq 30\text{ }^{\circ}\text{C}$ Operated w/o TEC: $-35\text{ }^{\circ}\text{C} \leq T_{\text{op}} \leq 60\text{ }^{\circ}\text{C}$		Storage: $-40\text{ }^{\circ}\text{C} \leq T_{\text{st}} \leq 80\text{ }^{\circ}\text{C}$
Temperature Sensor	On-chip sensor with 1mV/K sensitivity		
Wafer / Die Sizes, DPW	Wafer: 200mm	Die: 14.1mm × 15.4 mm	Total: 100 Dice 85 Functional Dice (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		