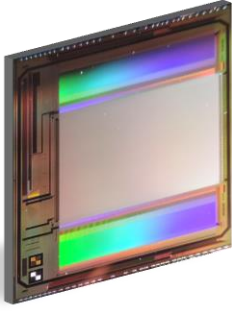


MT3817BA

384×288-17µm Q-VGA Microbolometer ROIC



Features

- Small form factor Q-VGA Microbolometer ROIC
- 384×288-17 µm Array format
- 1, 2, or 4 analog outputs with optional references
- Programmable Biasing, Timing, and Windowing
- High Speed, Low Power, and Low Noise
- ROIC parts on 200mm CMOS wafers

Array Format	384 × 288 Microbolometer Arrays		
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 $\leq 2.0 \text{ V}$	Load Capacitance $\leq 15 \text{ pF}$	Load Resistance $\geq 10 \text{ M}\Omega$
Gain and Offset	On-Chip Programmable gain and offset		
Windowing	Programmable size and location		
Frame Rate	$\leq 150 \text{ fps}$		
Supply Voltage	Analog : 3.3 V Core and I/O		Digital: 1.8V Core, 3.3V I/O
System Clock	Nominal: 12 MHz		Maximum: 48 MHz
Pixel Clock	Nominal: 3 MHz		Maximum: 12 MHz
Programming Interface	6-Wire Serial Programming Interface (SPI) Address based control and NUC		4-bit Input (for NUC Operations) 1-bit Serial Output, and 1-bit Enable
Power Dissipation	$\leq 100 \text{ mW}$ @ 50 fps with 2 outputs		
Output Noise Level	$\leq 0.5 \text{ mV rms}$ at 300K		
Temperature	Operated with TEC: $25^\circ\text{C} \leq T_{\text{op}} \leq 30^\circ\text{C}$ Operated w/o TEC: $-35^\circ\text{C} \leq T_{\text{op}} \leq 60^\circ\text{C}$		
Temperature Sensor	On-chip sensor with 1mV/K sensitivity		
Wafer / Die Sizes, DPW	Wafer: 200mm	Die: 9.8 mm×12.2 mm	Total: 196 Dice 165 Functional Dice (Typical)
Pads	Dual pad structure: 1 for probing and 1 for wirebonding		
Package Pin Count	≤ 22 (when used with a fan-out ceramic board in the package)		
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		