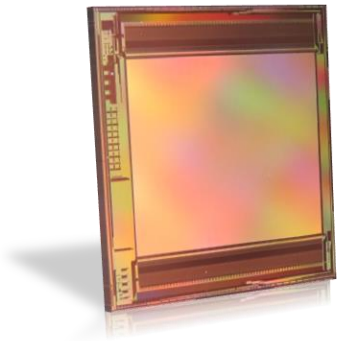
MT6420DA1

640×512-20µm Direct Injection ROIC



Features

- Direct Injection ROIC for 640×512-20µm FPAs
- 2, 4, or 8 analog outputs with reference
- Programmable polarity, gain, and biasing
- Snapshot operation: ITR and IWR
- Low-power and high frame rates
- Cryogenic operation down to 65K

Technical Specifications

Array Format and Pitch	640 × 512		20µm × 20µm		
Pixel Polarity and Type	p-on-n		for InSb, MCT, and T2SL		
Input Circuit Type	Direct Injection (DI)				
Full Well Capacity / Gain	FWC	1.5 Me-	3.0 Me-	6.0 Me-	10.0 Me-
	2-bit Cnt.	Gain-1	Gain-2	Gain-3	Gain-4
Detector Biasing	Programmable in 1mV steps (-1.0V < Bias < 1.0V)				
Integration Time	Programmable from 10µs to 100ms in 1µs steps				
Analog Outputs	Programmable 2, 4, or 8 with reference				
Output Swing	≥ 2.0V with adjustable gain and offset				
Readout Modes	Snapshot Operation: ITR and IWR Modes				
Windowing	Programmable Size and Location (64-pixel step size in XY)				
Frame Rate	≤ 200 Hz at full frame, upto 1000 Hz with windowing				
System Clock	Minimum 1MHz	Nominal 10 MHz	Maximum 12MHz		
Supply Voltage	Analog Core and I/O: 3.3V ± 5%, Digital I/O: 3.3V ± 5% Digital Core: 1.8V ± 5%				
Power Dissipation	≤ 150 mW at 100 fps with 4-outputs at 10 MHz system clock				
Input Referred Noise	≤ 650e- at 77K, 6Me- FWC (Gain-3)				
Operating Temperature	Cryogenic (T ≥ 65K) and room-temperature operation				
Temperature Sensor	On-chip active sensor with 1mV/K sensitivity				
Wafer / Die Sizes , DPW	Wafer: 200mm	Die:15.5mm × 15.5mm	Total Dice: 89	65 Funcitonal Dice (Typical)	