

# MT6415DA2

640×512-15µm DI ROIC



## Features

- New DI ROIC for 640×512-15µm FPAs
- 2, 4, or 8 analog outputs with reference
- Programmable Biasing, Gain, and Windowing
- Snapshot Operation: ITR and IWR
- Low Power and High Frame Rates
- Cryogenic operation down to 65K

## Technical Specifications

|                          |                                                                       |                        |                       |                               |
|--------------------------|-----------------------------------------------------------------------|------------------------|-----------------------|-------------------------------|
| Array Format and Pitch   | 640×512                                                               |                        | 15μm×15μm             |                               |
| Pixel Polarity and Type  | p-on-n                                                                |                        | QWIP, MCT, InSb, T2SL |                               |
| Input Circuit Type       | Direct Injection (DI)                                                 |                        |                       |                               |
| Full Well Capacity       | Programmable (High, Mid, and Low-Gain) Settings                       |                        |                       |                               |
|                          | HG: 2 Me-                                                             | MG: 5 Me-              | LG: 10 Me-            |                               |
| Detector Biasing         | Programmable in steps of < 1mV (External Higher Bias Range available) |                        |                       |                               |
| Integration Time         | Programmable from 1μs to 1s in 100ns steps                            |                        |                       |                               |
| Number of Analog Outputs | Programmable 2, 4, or 8 outputs with reference                        |                        |                       |                               |
| Output Swing             | ≤ 2.0 V with adjustable gain and offset                               |                        |                       |                               |
| Readout Gain             | Programmable                                                          |                        |                       |                               |
| Readout Modes            | Snapshot Operation: ITR and IWR Modes                                 |                        |                       |                               |
| Windowing                | Programmable size and location                                        |                        |                       |                               |
| Frame Rate               | ≤ 200 Hz at full frame, upto 1000 Hz with windowing                   |                        |                       |                               |
| System Clock             | Nominal 10 MHz (upto 12MHz)                                           |                        |                       |                               |
| Supply Voltage           | 3.3 V and 1.8 V                                                       |                        |                       |                               |
| Power Dissipation        | ≤ 150 mW (100 Hz, 4 outputs)                                          |                        |                       |                               |
| Input Referred Noise     | ≤ 850 e- rms at 77K for 10 Me- FWC                                    |                        |                       |                               |
| Operating Temperature    | Cryogenic (T ≥ 65K)                                                   |                        |                       |                               |
| Temperature Sensor       | On-chip active sensor with 1mV/K sensitivity                          |                        |                       |                               |
| Wafer / Die Sizes, DPW   | Wafer: 200mm                                                          | Die: 12.20mm × 13.30mm | Total Dies: 133       | 100 Functional Dies (Typical) |