Helvellyn 2.1.0

Helvellyn, a FlexIC Foundry® technology

Overview

Pragmatic is revolutionising semiconductor fabrication with ultra-low-cost, flexible integrated circuit (FlexIC) technology that makes it quick and easy to embed intelligence almost anywhere.

Using thin-film transistor (TFT) technology in combination with conventional semiconductor processing equipment, our FlexIC Foundry® service takes FlexICs from tape-out to delivery in around four weeks, at a fraction of the cost of silicon.

Particularly suited to applications where form factor and cost outweigh speed and performance criteria, FlexICs excel in areas such as radio-frequency identification (RFID), multiplexing, driver and readout circuitry, and basic computation.

The second-generation Helvellyn 2.1.0 technology node offers four metal layers over a 600nm minimum channel dimension n-type FET process. The process also includes a dedicated resistor layer and capacitors. With an operating voltage of 3 V_{DC}, total thickness of 30 μm, and minimum bending radius of 5 mm, Helvellyn technology is ideal for applications such as IoT, wearables, AR/VR and sensing.

Key Benefits

– Ultra-short tape-out to customer delivery (approx. 4 weeks)

– Flexible form factor enables novel use cases

– Low non-recurring engineering (NRE) cost for volume production

Key Features

– Flexible ICs with ~30 μm thickness

– Process Design Kit (PDK) compatible with industry standard EDA tools

– Device library including transistors, resistors and capacitors

– Four metal layer stack for efficient interconnects

Specifications

Transistors	Metal oxide thin film transistor	n-type FET
	Minimum channel dimension	600 nm
Resistors	Dedicated resistor layer	200 kΩ/sq.
Interconnects	Independent metal routing	4 layers (2 dedicated)
Physical	Total thickness	~30 µm
	Minimum bend radius	5 mm
	Redistribution layer	Aluminium
Turnaround	Tape-out to delivery	Approx. 4 weeks

Delivery Formats

Pragmatic FlexICs are available in the following formats:

Samples	Singulated FlexICs in Gel-Box™
Production	Wafer on glass carrier

To find out more about Pragmatic's unique flexible semiconductor technology, visit www.pragmaticsemi.com

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