



FLEXIBLE ICs FROM PRAGMATIC SEMICONDUCTOR MPW PROTOTYPING & FULL-WAFER RUNS

Picture Source: Pragmatic

Europractice Multi-Project Wafer (MPW) services offer flexible integrated circuit (FlexIC) fabrication from Pragmatic Semiconductor.

Why Europractice?

- ▶ Affordable and easy access to Prototyping, Design Tools, and Training for universities, research institutes, and their spinouts.
- ▶ MPW runs for multiple technologies, including ASICs, Photonics, TFT, and more.
- ▶ Advanced packaging and system integration support.

Why Pragmatic?

- ▶ FlexIC Foundry, headquartered in the UK, offers cost-effective flexible integrated circuit technology.
- ▶ Rapid cycle time: From tape-out to delivery in around six weeks.
- ▶ Flexible form factor enables novel use cases.
- ▶ Low non-recurring engineering (NRE) cost for volume production.

Technology Highlights

Pragmatic Semiconductor is pioneering flexible semiconductor technology to sustainably bridge digital and physical worlds. Driven by optimised, purpose-led design, FlexICs – ultra-thin, flexible chips – empower innovators with connect, sense and compute capabilities to deliver edge and item-level intelligence at scale.

Using thin-film transistor (TFT) technology in combination with conventional semiconductor processing equipment, Pragmatic's FlexIC Foundry service takes designs from tape-out to delivery in just weeks, enabling agile iterations, early end-user testing, and an accelerated time to market – at a fraction of the cost of silicon.

Platform Gen 3 offers a 600 nm minimum channel dimension n-type FET, a dedicated 200 k Ω /sq resistor layer and 4.5 fF/ μm^2 metal-insulator-metal capacitors. Four metal layers provide efficient routing and interconnects, with a 4 μm routing pitch. The technology is packaged with passivation for protection and isolation, and a redistribution layer (RDL) with aluminium metallisation for compatible attachment methods.

Key features

- ▶ 10x power and 3x area improvement over previous generation
- ▶ Process Design Kit (PDK) compatible with industry-standard EDA tools
- ▶ Standard cell library to accelerate design success
- ▶ Rapid fabrication on 300mm wafers, reducing time to market
- ▶ Sustainable, low-carbon manufacturing
- ▶ Full-wafer runs on demand

Pragmatic's FlexIC

Transistors	Metal oxide thin-film transistor	n-type FET
	Minimum channel dimension	L=0.6 μ m, W= 1 μ m
	Maximum channel dimension	L=1.2 μ m, W= 20 μ m
Resistors	Dedicated resistor layer	200 k Ω /sq.
	Minimum line width/space	0.6 μ m/1.0 μ m
MIMCaps	Unit capacitance	4.5 fF/ μ m ²
Interconnects	Independent metal routing	4 layers (2 dedicated)
	Routing pitch	4 μ m
Packaging	Aluminium RDL	1.5 μ m
Physical	Total thickness	~37 μ m
	Minimum bend radius	5 mm
	Wafer size	300mm
Deliverable	Dies in gel-box	50
Full-wafer run	On demand. Please contact flexicmpw@imec-int.com.	

Europractice Webinar Series



Explore our webinar series on Pragmatic Semiconductor's FlexIC technology, available on the official Europractice Services YouTube channel.

The first session offers a broad introduction to Pragmatic's flexible integrated circuits and their potential applications—an ideal starting point for anyone new to the technology.

If you're interested in a deeper dive into the Pragmatic FlexIC Platform Gen 3 and the latest PDK, we recommend watching Webinar 3 for a comprehensive overview.

