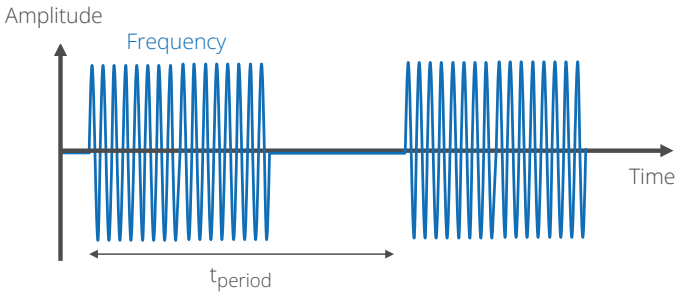
Instant plasma generator

Microsecond-level waveform control for advanced plasma etch and deposition

The Instant Plasma Generator expands control over plasma conditions for advanced etch and deposition processes. With microsecond-level waveform control and no need for traditional matchboxes or frequency tuning, it helps reduce system complexity, improve process stability and support accurate power delivery.

ON/OFF PULSING



Why it matters

Traditional matching networks introduce latency and instability, restricting advanced node scaling. By bypasing mechanical matching and frequency tuning, this generator removes matching delays. Process engineers achieve instantaneous power delivery and absolute plasma stability, drastically minimizing wafer defects and maximizing yield in critical etching and deposition steps.

What it enables

Microsecond-level dynamic control unlocks the next generation of semiconductor fabrication. It empowers precise, high-aspect-ratio etching and advanced atomic layer processes previously hindered by power delivery bottlenecks. OEMs can now deploy customized, ultra-fast pulsed plasma recipes essential for driving sub-nanometer geometries and innovative device architectures without considering matching constraints.

PRODUCT FEATURES

- Microsecond-level control
- Dynamic multi-level pulsing
- No matchbox required
- Reduced system complexity

Application	Plasma etching (ALE, conductor or dielectric), Plasma deposition (PVD, PECVD, PEALD) and Chamber Clean
Frequency	13.56MHz±10% or others
t_{period}	10us - 1s (1-100kHz)
Multi-level pulse levels	Infinite (fully arbitrary)
t_{rise} / t_{fall}	<2us
$t_{settling}$	<4us
Power	1-5kW Delivered power
Control modes	Power, Voltage, Current
AC input	208 to 480VAC 3ph VAC
Cooling	Air cooled or water cooled
Communication interfaces	Synchronization (CEX), EtherCAT, DeviceNet, Interlock
Configuration / Monitoring	Ethernet (GUI), EtherCAT, DeviceNet
Advanced features	Integrated IV sensor, High speed oscilloscope, Arc management, integrated DC blocking and DC bias measurement
Customization	Customization is fully possible. Please contact us for further discussion.

Looking to improve plasma control or simplify RF system design?
Talk to our experts. Contact us for more information.

Information subject to change, contact us for more details:

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