C205 Broadband Plasma

Patterned Wafer Inspection System

The C205 broadband plasma optical defect inspection system enables systematic defect discovery and latent reliability defect detection for chip manufacturing for the automotive, IoT, 5G, consumer electronics and industrial (military, aerospace, medical) markets. The C205 leverages a tunable broadband illumination source, selectable optics, a low noise sensor, and advanced algorithms to capture yield-limiting defects, helping accelerate characterization and optimization of new processes, design nodes and devices from R&D early learning through high volume manufacturing.

The C205 is built with an array of optical modes giving fabs the flexibility to select the correct sensitivity most effective for a particular layer, design or process. The flexibility enabled by the many optical modes offers the capability to capture a wide range of defect types including the discovery of new, previously undetected types of defects that impact yield.

Selectable Illumination

A tunable wavelength, broadband illumination source covers DUV, UV and visible wavelength ranges, providing the flexibility needed to optimize defect capture across a broad range of process layers.

Selectable Optics

The C205's advanced, full spectrum optics include selectable optical apertures and pixel size choices to provide optimal defect contrast and superior nuisance suppression, maximizing sensitivity to critical defects across an extended range of layers, devices and design rules.

Advanced Algorithms

Custom defect detection algorithms enable capture of many defect types including latent reliability defects at low noise, reducing die overkill.

NanoPoint™

NanoPoint™ technology focuses inspection on micro pattern care areas at high risk for reliability failures, delivering actionable defect data that helps reduce die overkill. NanoPoint technology helps with rapid design qualification: quick identification of problematic patterns and defect data to help characterize hotspots.

Configurable and Extendible

The C205 broadband plasma patterned wafer inspection system is built on an industry-proven, extendible platform and is configurable to meet specific inspection requirements while protecting the fab's capital investment. The flexible platform enables seamless use from R&D through high-volume production integration and supports 200mm, 300mm or a combination of both.

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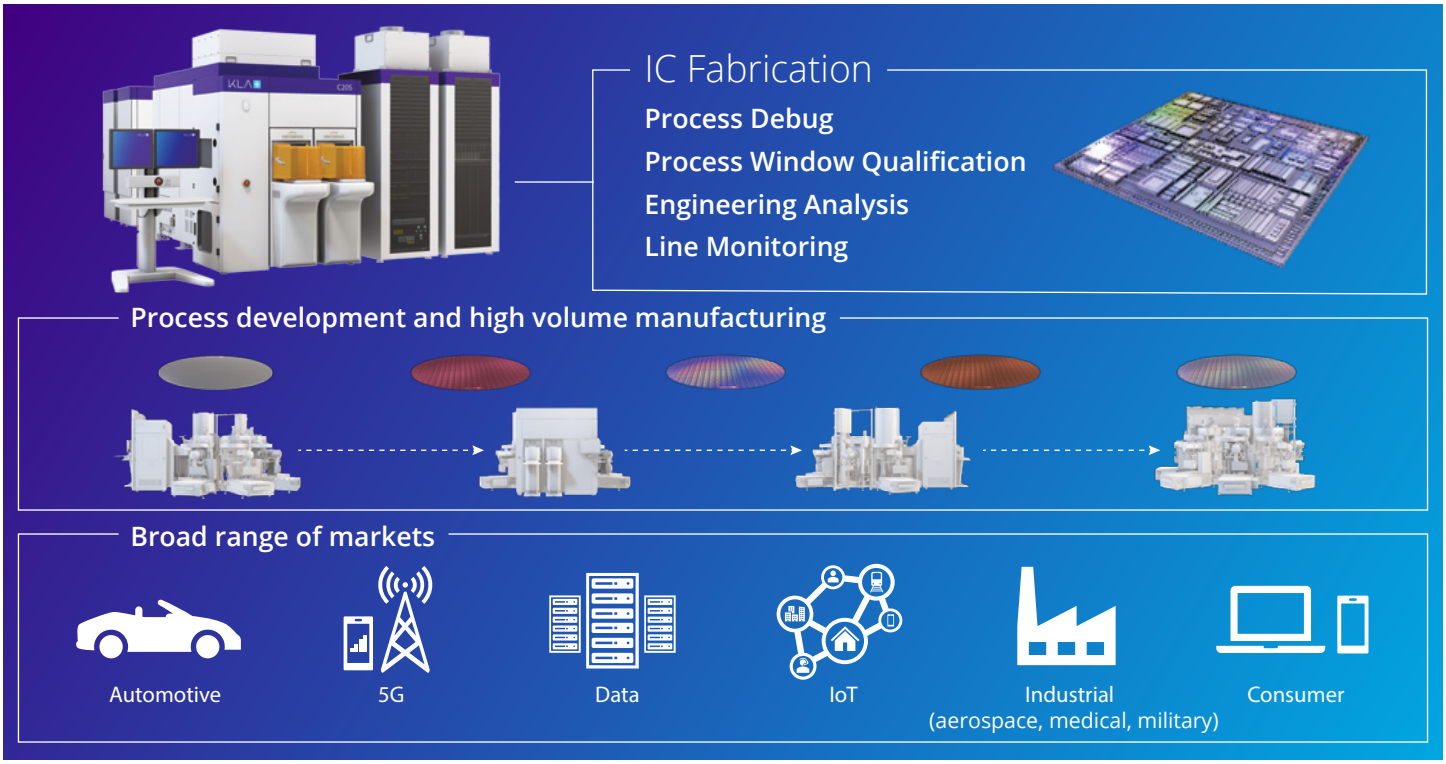

Applications

Process Window Qualification (PWQ)

Single scan PWQ application coupled with NanoPoint design aware capability uses intelligent wafer layout and sophisticated analysis software to identify process-induced defect errors providing a faster and more accurate identification of the process window. PWQ enables fab engineers to discover and qualify the process window for their designs prior to production ramp.

Engineering Analysis and Line Monitoring

The C205 seamlessly meets both engineering and production requirements in the fab. Systematic defect discovery provides fabs with comprehensive defect information during the R&D Engineering Analysis phase, helping speed characterization and optimization of new processes, design nodes and devices. Production implementation and adoption requires high capture rate, robust nuisance suppression and filtering to deliver a cleaner, more actionable defect pareto, for reduction of die overkill and effective line monitoring control.

Zero Defect Strategy

The defect types that impact product reliability are generally the same as those that impact yield. They are distinguished primarily by size and proximity to critical design features. Latent defect detection and binning support auto IC fabs' Zero Defect strategies to help meet automotive manufacturer's reliability requirements.

KLA SUPPORT

Maintaining system productivity is an integral part of KLA's yield optimization solution. Efforts in this area include system maintenance, global supply chain management, cost reduction and obsolescence mitigation, system relocation, performance and productivity enhancements, and certified tool resale.

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