

OSANTS ELECTRONICS 2026 CATALOG

for **PRINTED
CIRCUIT BOARDS**



INNOVATIVE
DESIGN



PRECISE
MANUFACTURING



QUALITY
ASSURANCE



SUSTAINABLE
SOLUTIONS

STRONG. SMART. CONNECTED.



www.OSANTS.com



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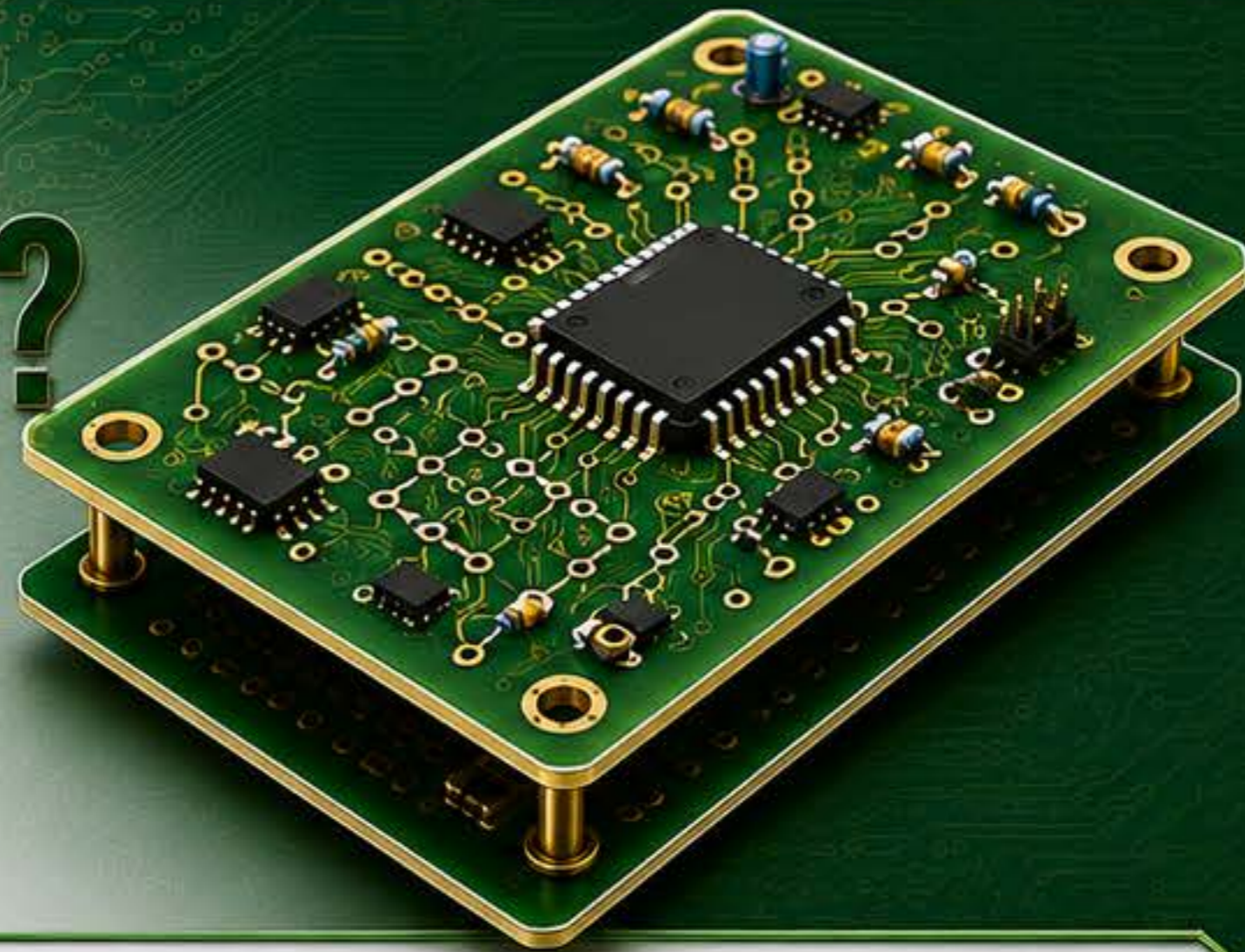


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OSANTS

HOW IS A PCB MADE?

PRECISION. TECHNOLOGY. RELIABILITY.



THE PCB MANUFACTURING PROCESS

A Printed Circuit Board (PCB) is built through a series of carefully controlled steps that transform a blank substrate into a high-performance, reliable foundation for modern electronics.

KEY MATERIALS



Copper Clad Laminate (FR-4)
The base material that provides structure and insulation.



Copper Foil
Forms the conductive paths that connect components.



Solder Mask
Protects the copper and prevents solder bridges.



Silkscreen
Adds labels, symbols, and reference designators.

THE PCB MANUFACTURING STEPS

1 DESIGN & LAYOUT



Engineers create the PCB layout using specialized software, defining component placement and copper traces.

2 MATERIAL PREPARATION



Copper-clad laminate is cut to size and cleaned to ensure optimal adhesion for the next steps.

3 PHOTOIMAGING



A light-sensitive dry film is applied, then exposed to UV light through a photomask to transfer the circuit pattern.

4 ETCHING



Unwanted copper is removed using a chemical etchant, leaving behind the desired copper traces.

5 DRILLING



Precision drills create holes for component leads, vias, and mounting points.

6 PLATING



Holes are plated with copper to create electrical connections between layers (for multi-layer PCBs) and to pad the holes.

7 SOLDER MASK



A liquid solder mask is applied and cured, protecting the copper traces and preventing solder bridging.

8 SILKSCREEN



Component outlines, labels, and logos are printed on the board using durable silkscreen ink.

9 SURFACE FINISH



The exposed copper pads are finished with a protective layer (e.g., HASL, ENIG) to prevent oxidation and improve solderability.

10 TESTING & INSPECTION

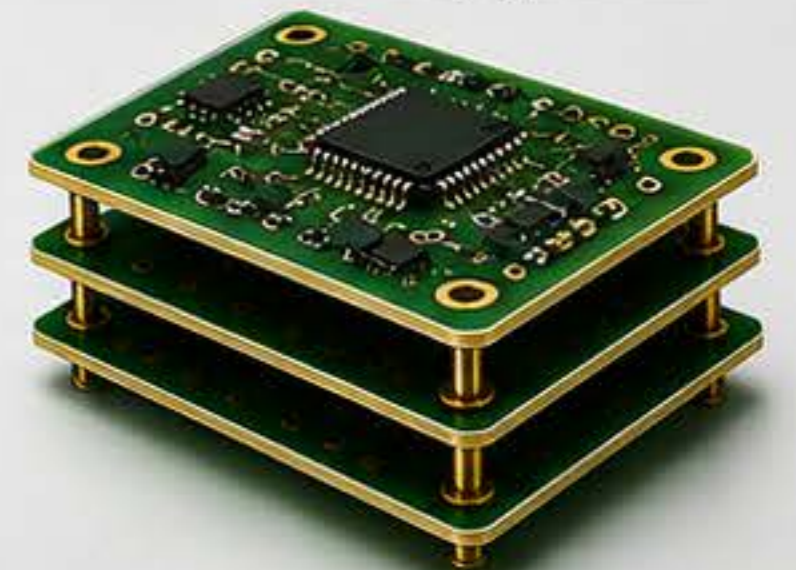


Electrical testing and visual inspection ensure the PCB meets quality and performance standards.

BUILT FOR PERFORMANCE



From advanced design to precision manufacturing and rigorous testing, every PCB is engineered for reliability, durability, and optimal performance in demanding applications.

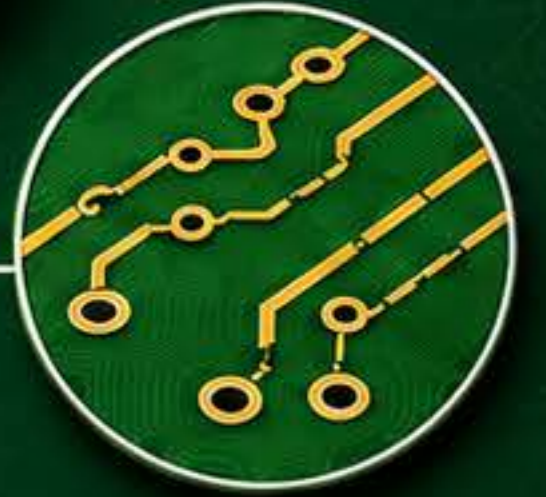
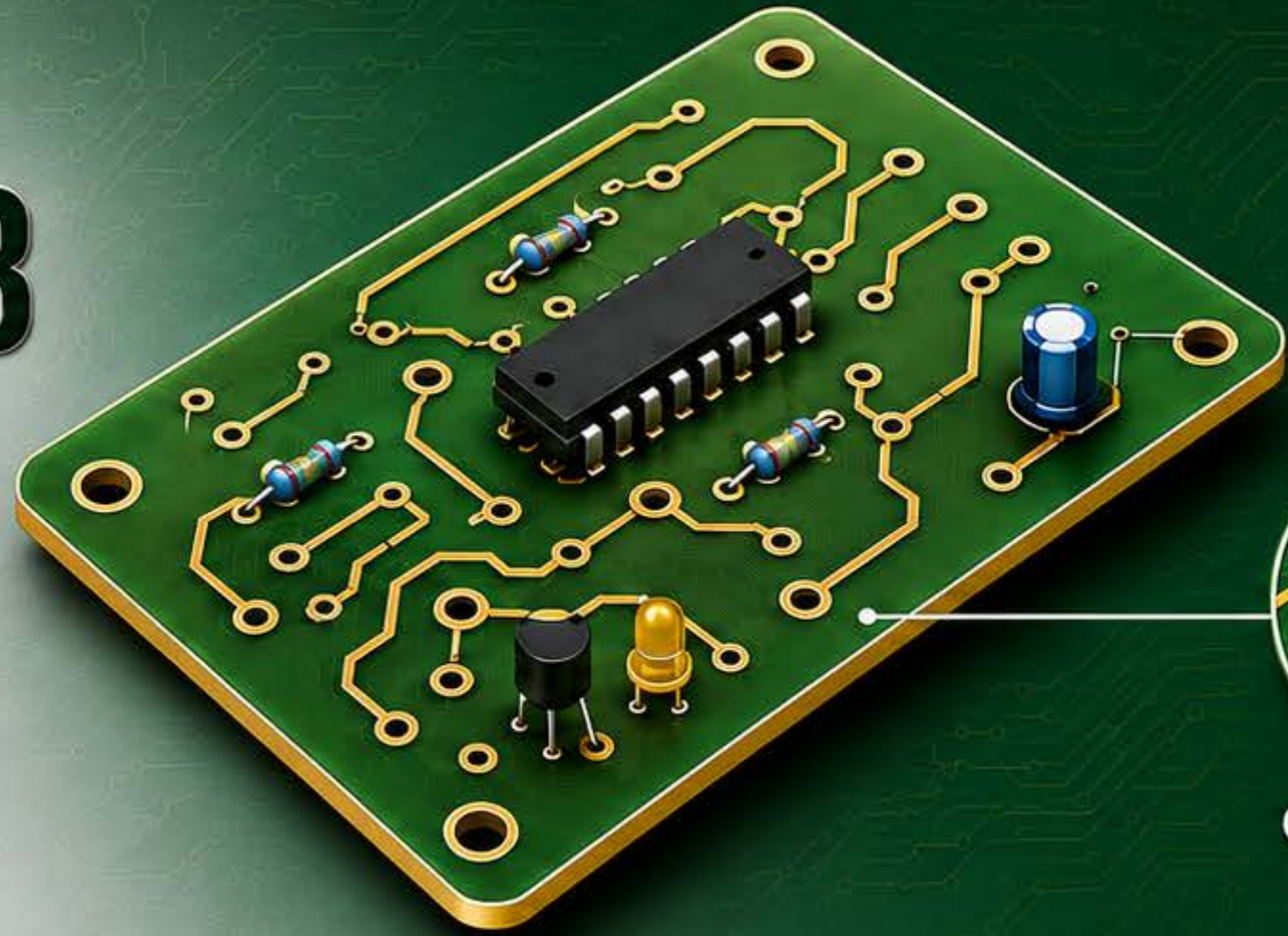


STRONG. SMART. CONNECTED.

OSANTS®

SINGLE-SIDED PCB

SIMPLE. RELIABLE. COST-EFFECTIVE.



Copper Traces on One Side



WHAT IS A SINGLE-SIDED PCB?

A Single-Sided PCB has conductive copper traces on only one side of an insulating board. Components are mounted on the same side as the traces, making it a simple, economical, and easy-to-manufacture solution for many electronic applications.

KEY FEATURES



Simple & Easy to Design

Straightforward layout and manufacturing process.



Cost-Effective

Lower manufacturing cost makes it ideal for budget-friendly projects.



Reliable Performance

Fewer layers mean less complexity and high reliability for basic circuits.



Compact & Lightweight

Provides essential functionality in a simple, space-saving form.

COMMON USES



Remote Controls

Widely used in IR remotes for TVs, fans, and other home appliances.



Calculators

Perfect for basic calculators and simple electronic devices.



LED Indicators

Ideal for LED circuits, status indicators, and signal displays.



Power Supplies

Used in simple power supply units and adapters.



DIY & Education

Great choice for beginners, prototyping, and learning projects.

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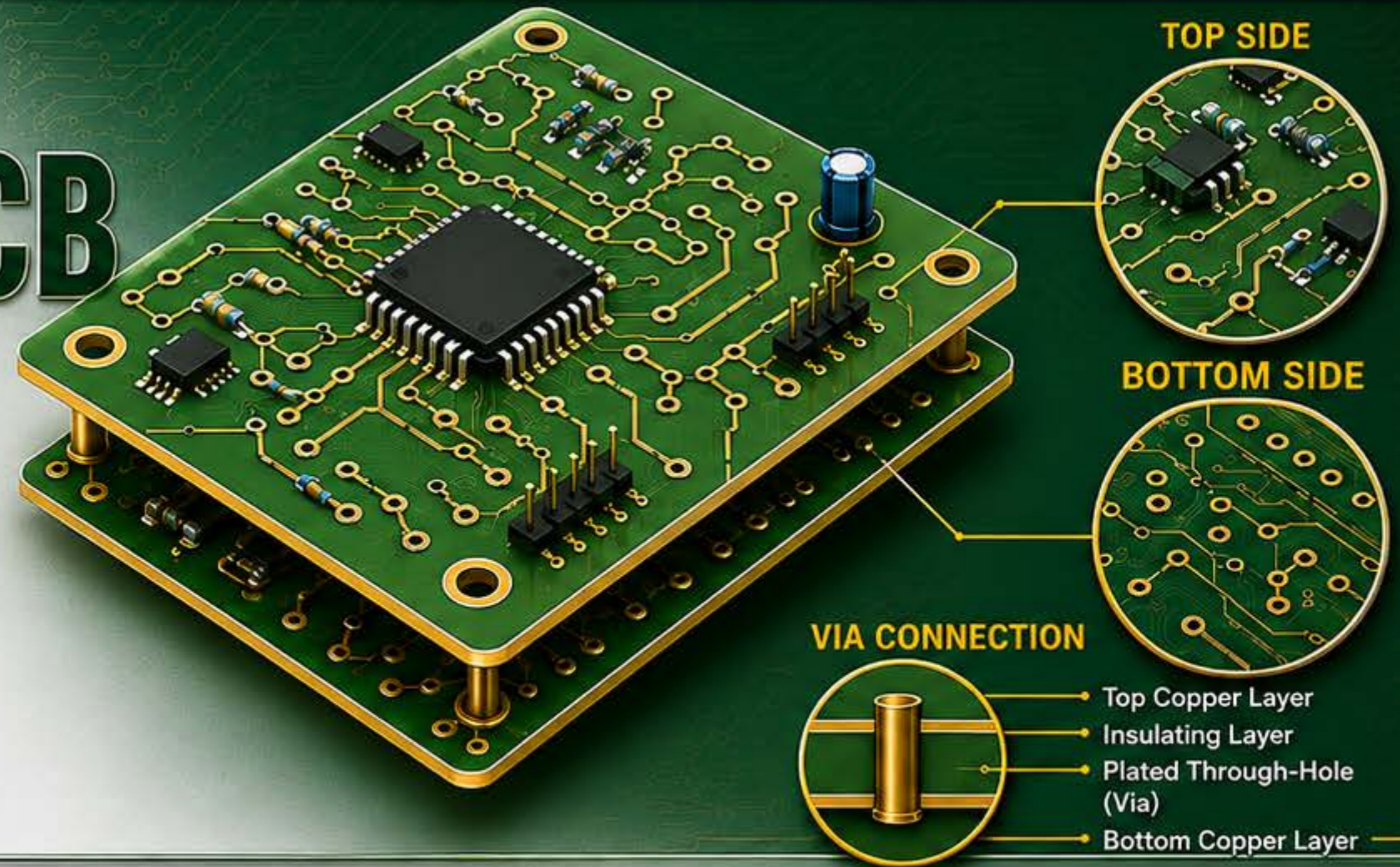
OSANTS DOUBLE-SIDED PCB

**MORE CONNECTIONS. MORE POWER.
MORE POSSIBILITIES.**



WHAT IS A DOUBLE-SIDED PCB?

A Double-Sided PCB has conductive copper traces on both sides of an insulating board. Components are mounted on either side, and the traces are connected through plated through-holes (vias). This design allows for greater circuit density, improved performance, and more advanced functionality.



KEY FEATURES



Higher Circuit Density

Use both sides for routing to accommodate more components and complex designs.



Enhanced Performance

Shorter trace lengths and better grounding improve signal integrity and reduce noise.



Design Flexibility

Ideal for advanced circuits requiring more connections and functionality.



Durable & Reliable

Built to withstand stress, vibration, temperature changes, and daily use.



Cost-Effective for Complex Designs

Offers more capability without the need for multi-layer boards in many applications.

COMMON USES



MICROCONTROLLER DEVELOPMENT BOARDS

Supports more I/O pins, sensors, and peripherals in compact designs.



POWER SUPPLY CIRCUITS

Efficient routing for high-current paths and voltage regulation.



AUDIO AMPLIFIERS

Better layout for low-noise performance and improved signal quality.



COMMUNICATION DEVICES

Ideal for RF modules, GPS, Wi-Fi, Bluetooth, and IoT devices.



INDUSTRIAL & AUTOMATION

Reliable performance in controllers, sensors, and monitoring systems.



MEDICAL DEVICES

Used in diagnostic tools, monitoring equipment, and portable devices.

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OSANTS

MULTI-LAYER PCB

ADVANCED DESIGN. MAXIMUM PERFORMANCE.
BUILT FOR COMPLEXITY.



WHAT IS A MULTI-LAYER PCB?

A Multi-Layer PCB consists of three or more conductive layers stacked together with insulating materials in between. Layers are interconnected using plated through-holes (vias), enabling complex circuits, high density, superior signal integrity, and efficient power distribution in a compact form factor.



TOP LAYER
Components &
Signal Routing

INNER LAYER 1
Signal Routing

INNER LAYER 2
Power Plane

INNER LAYER 3
Ground Plane

BOTTOM LAYER
Signal Routing

KEY FEATURES



High Density Interconnects

More layers allow higher component density and complex routing in smaller spaces.



Superior Signal Integrity

Dedicated power and ground planes reduce noise, crosstalk, and signal loss.



Efficient Power Distribution

Power and ground planes deliver stable voltage and current across the board.



Design Flexibility

Supports advanced circuits, high-speed signals, and mixed-signal designs.



Reliable & Durable

Built to withstand thermal stress, vibration, and demanding environments.



Optimized Performance

Ideal for high-speed, high-frequency, and high-power applications.

COMMON USES



SMARTPHONES & MOBILE DEVICES

Compact, high-density boards for powerful performance and advanced features.



NETWORKING EQUIPMENT

High-speed data transmission, complex routing, and reliable power delivery.



AUTOMOTIVE ELECTRONICS

Engine control units, safety systems, and infotainment with high reliability.



MEDICAL DEVICES

Precision instruments requiring accuracy, miniaturization, and reliability.



AEROSPACE & DEFENSE

Mission-critical systems that demand high performance and extreme reliability.



INDUSTRIAL SYSTEMS

Automation, control systems, and sensors built for rugged environments.

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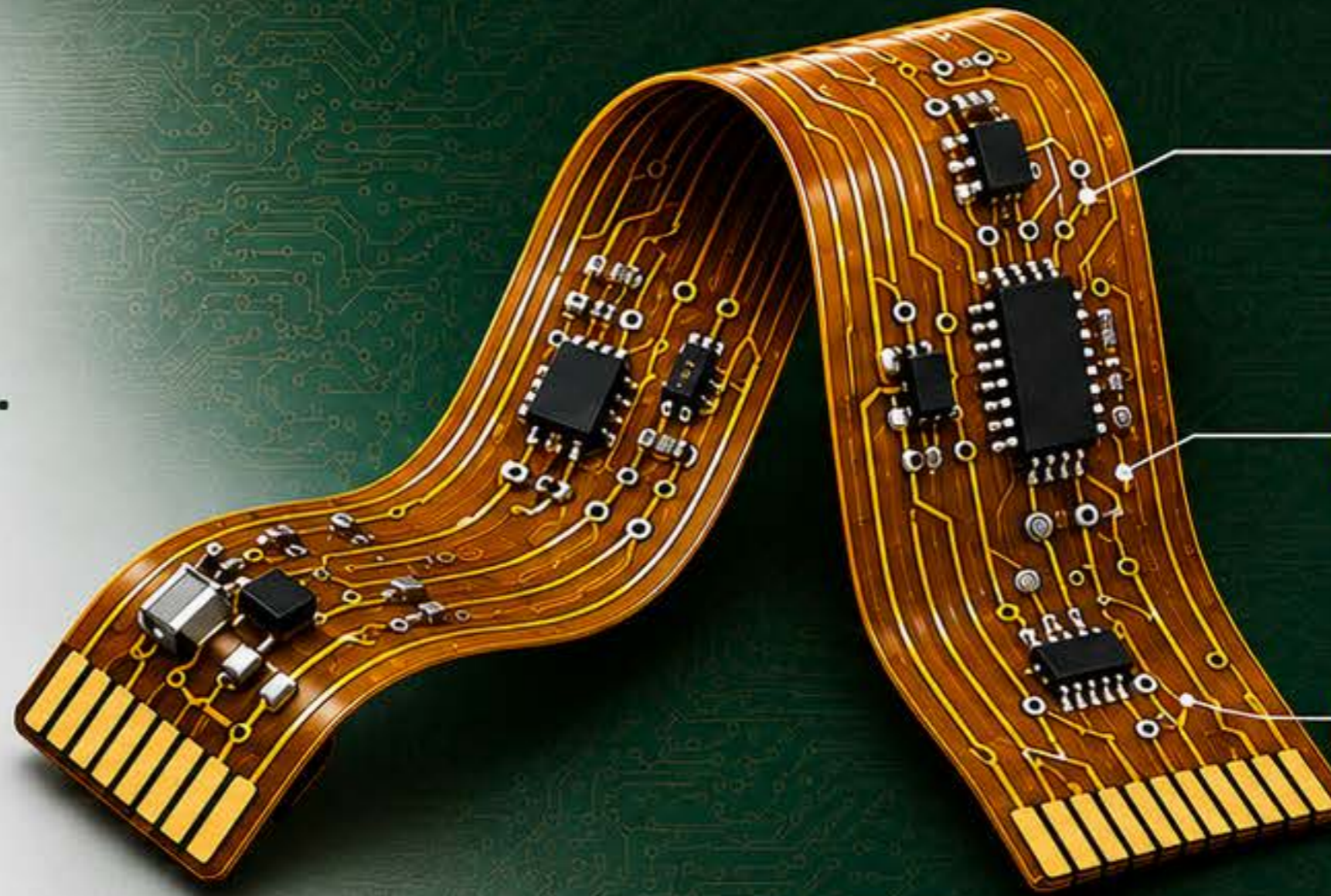
FLEXIBLE PCB

FLEXIBLE BY DESIGN. POWERFUL BY PERFORMANCE.



WHAT IS A FLEXIBLE PCB?

A Flexible PCB is made from bendable, lightweight materials that allow the circuit to flex, twist, and fold without breaking. They are ideal for dynamic applications where space is limited and durability is essential. Flexible PCBs maintain reliable electrical performance even in continuous motion or extreme conditions.



LIGHTWEIGHT
Reduces size and weight of the final product.




FLEXIBLE & DURABLE
Withstands bending, twisting, and vibration without damage.



SPACE-SAVING
Enables complex designs in tight or compact spaces.

KEY FEATURES

-  **High Flexibility**
Bends and folds easily to fit dynamic or compact designs.
-  **Lightweight**
Uses thin, flexible materials to reduce overall weight.
-  **High Reliability**
Designed to endure millions of flex cycles and harsh conditions.
-  **Space Efficiency**
Ideal for 3D and constrained environments.
-  **Wide Temperature Range**
Performs reliably in extreme heat or cold.
-  **Customizable Designs**
Supports various shapes, sizes, and configurations.

COMMON USES



WEARABLE DEVICES

Perfect for smartwatches, fitness trackers, and other wearable electronics.



FOLDABLE DEVICES

Enables seamless connections in foldable phones, tablets, and display modules.



MEDICAL DEVICES

Used in endoscopes, hearing aids, and other compact medical equipment.



CAMERA MODULES

Ideal for compact cameras and imaging systems with tight space limits.



AUTOMOTIVE

Used in sensors, lighting, and safety systems that require high durability.



AEROSPACE & DEFENSE

Reliable performance in high-vibration and extreme environment applications.

STRONG. SMART. CONNECTED.

ENGINEERED FOR PERFORMANCE.

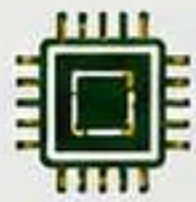
BUILT FOR RELIABILITY.

Advanced PCB solutions designed for precision, performance, and long-term reliability. From prototype to production, we deliver quality you can count on.



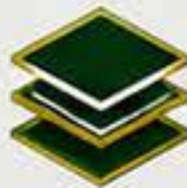
PRECISION ENGINEERED

High-precision design and manufacturing for optimal performance.



HIGH RELIABILITY

Rigorous testing ensures durability and consistent performance.



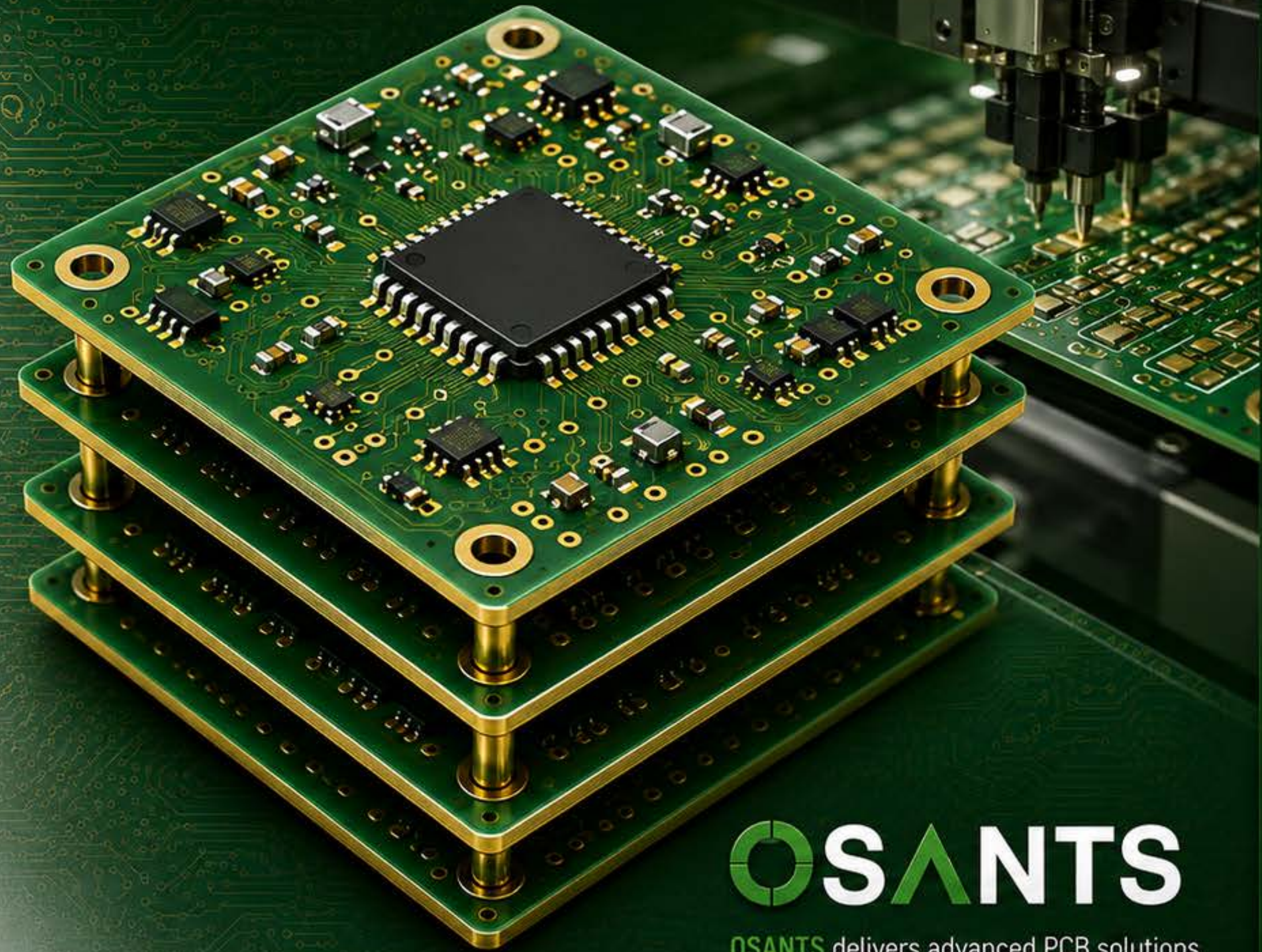
ADVANCED TECHNOLOGY

State-of-the-art equipment and processes for superior quality PCBs.



LEAD-FREE & ROHS COMPLIANT

Environmentally responsible manufacturing for a sustainable future.



OSANTS

OSANTS delivers advanced PCB solutions designed for performance, reliability, and innovation—powering your ideas from concept to completion.



LET'S BUILD
WHAT'S NEXT. TOGETHER.



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