



Keeping you  
ahead  
in Testing

**OMRON**

# Table of contents

**3**

---

Introduction

**4**

---

Automated test  
equipment

**6**

---

ATE product  
range

**10**

---

Semiconductor  
manufacturing  
equipment

**16**

---

Device testing

**21**

---


Other  
applications

**22**

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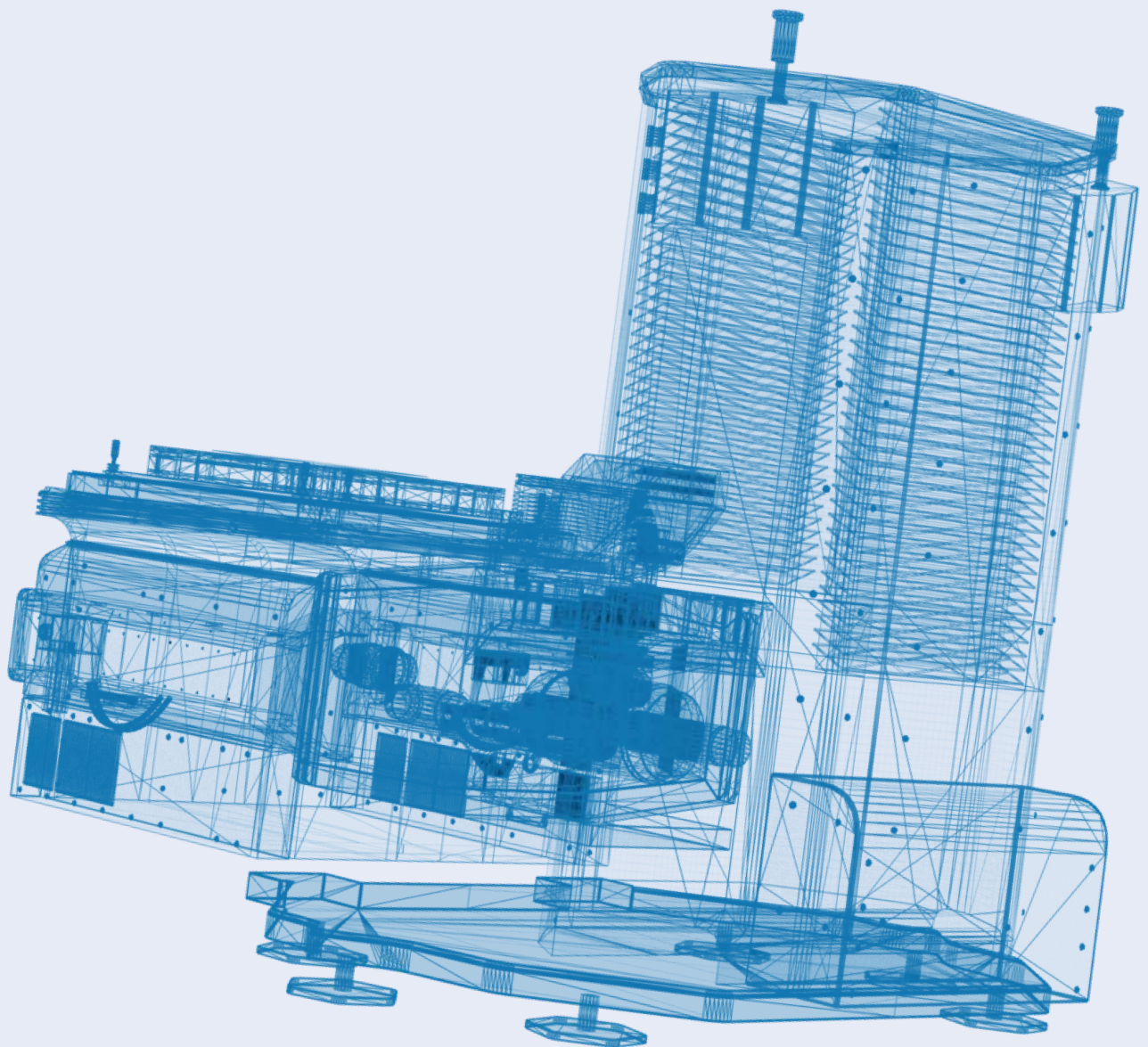
About OMRON





# Automated test equipment (ATE)

As semiconductor devices advance, test equipment requires greater stability, accuracy, and reliability. Manufacturers also need flexible, scalable, long-life components that support high throughput and compact test board designs. OMRON delivers versatile solutions, including G3VM MOSFET relays, signal and high-frequency relays, plus new EFC blade pins for IC testing. These components address challenges in high-frequency, high-power, and high-temperature conditions.



# Next-level components for your ATE

Our portfolio includes products that improve reliability and accuracy across every part of your automated testing equipment — from testers and handlers to probers — with components designed for use in all types of resource cards, interface cards, and probe cards.

## Automated Test Equipment



## 1 INSTRUMENT: TEST SIGNAL SWITCHING

### **MOSFET relay**

G3VM series

- Low CxR type
- High speed response type
- High temperature compatible type
- Ultra-compact type
- High load voltage type (including SiC types – coming soon)

### **Signal relay**

G6K

P6K (socket) for G6Krelay (coming soon)

G6J-Y

### **High frequency relay (up to 8GHz)**

G6K-RF (up to 3GHz)

G6K-RF-V (up to 8GHz)

## 4 INTERFACE BOARD/PROBE CARD: TEST SIGNAL SWITCHING

### **MOSFET relay**

G3VM series

- Low CxR type
- High speed response type
- High temperature compatible type
- Ultra-compact type
- High load voltage type (including SiC types – coming soon)

### **Signal relay**

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P6K (socket) for G6Krelay (coming soon)

G6J-Y

### **High frequency relay (up to 8GHz)**

G6K-RF (up to 3GHz)

G6K-RF-V (up to 8GHz)

## 2 DEVICE POWER SUPPLY CONNECTION

### **MIL connectors**

XG2/4/5

### **I/O connector**

XW4MN

### **Power relays**

G2RL

G6B

G7EB-E2

G9KA-E

## 3 TEST HEAD

Connection from Testing instrument to DUT by executing measurement

## 5 CONTROL PANEL

Settings

### **Tactile switches**

B3SL/B3W/B3FS/B3FS key top

## 6 HANDLING MECHANISM

Mechanism positioning

### **Miniature basic switches**

D3V/SS/D2

### **Photomicrosensor**

EE-SX / EE-SY

### **Light convergent reflective sensor**

B5W-LB

## 7 TEST SOCKET / DUT

Connecting board to DUT

### **EFC test pins/socket**

XP2A/XP2B/ XP2S series

### **IC Connector to interface**

XR2

## MOSFET relays



G3VM-UR (VSON)



G3VM-QR (S-VSON)



G3VM-QV, -UV (with  
internal resistor)



G3VM-YR (WSON)



G3VM-WR (PSON)

## More ways to search



Discover here our full range of recommended MOSFET relays for semiconductor testing equipment



You want to search for MOSFET relays by parameter? Visit this page to discover our full range for semiconductor testing equipment.

## High frequency relays



G6K-RF-S, -T



G6K-RF-V



G6K



G6J



G6S

## Signal relays

## Reflective sensor



B5W-LB

## MIL connectors



XG2/4/5

## I/O connectors



XW4M/N

## Basic switches



SS

## Tactile switches



B3SL

## DIP switches

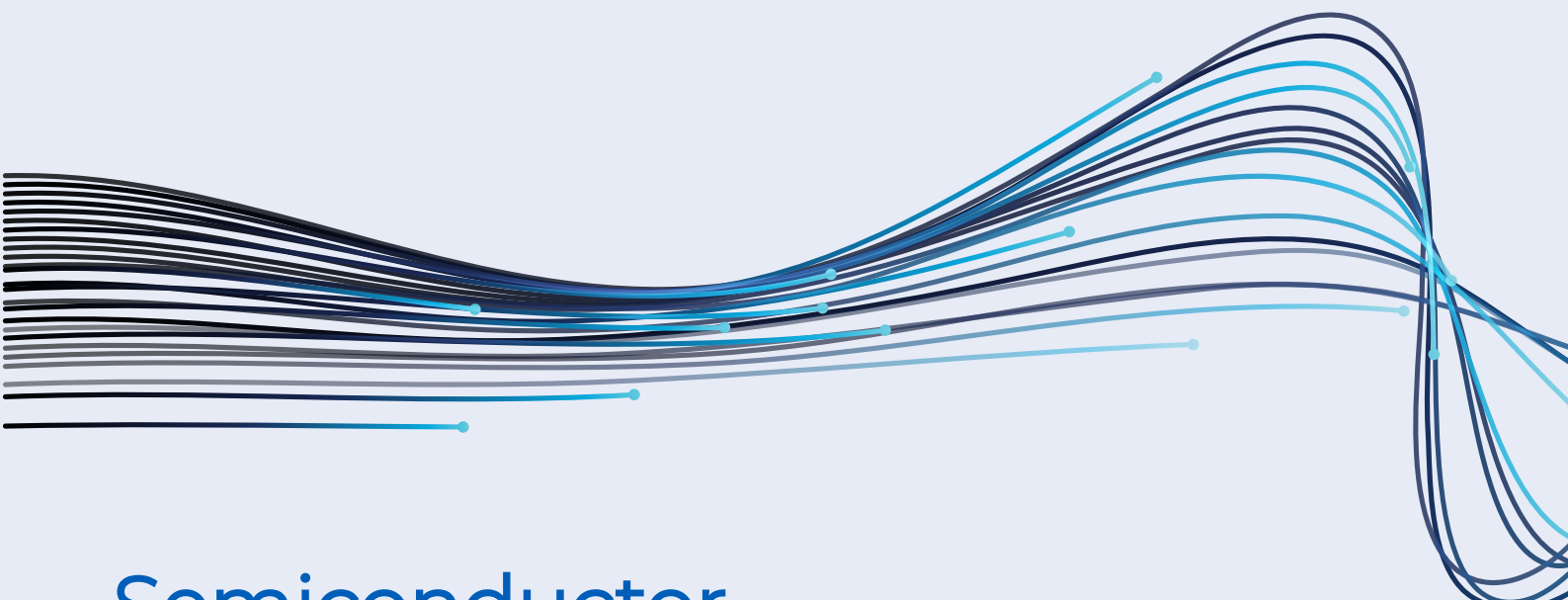


A6SN

## Pushbutton switches



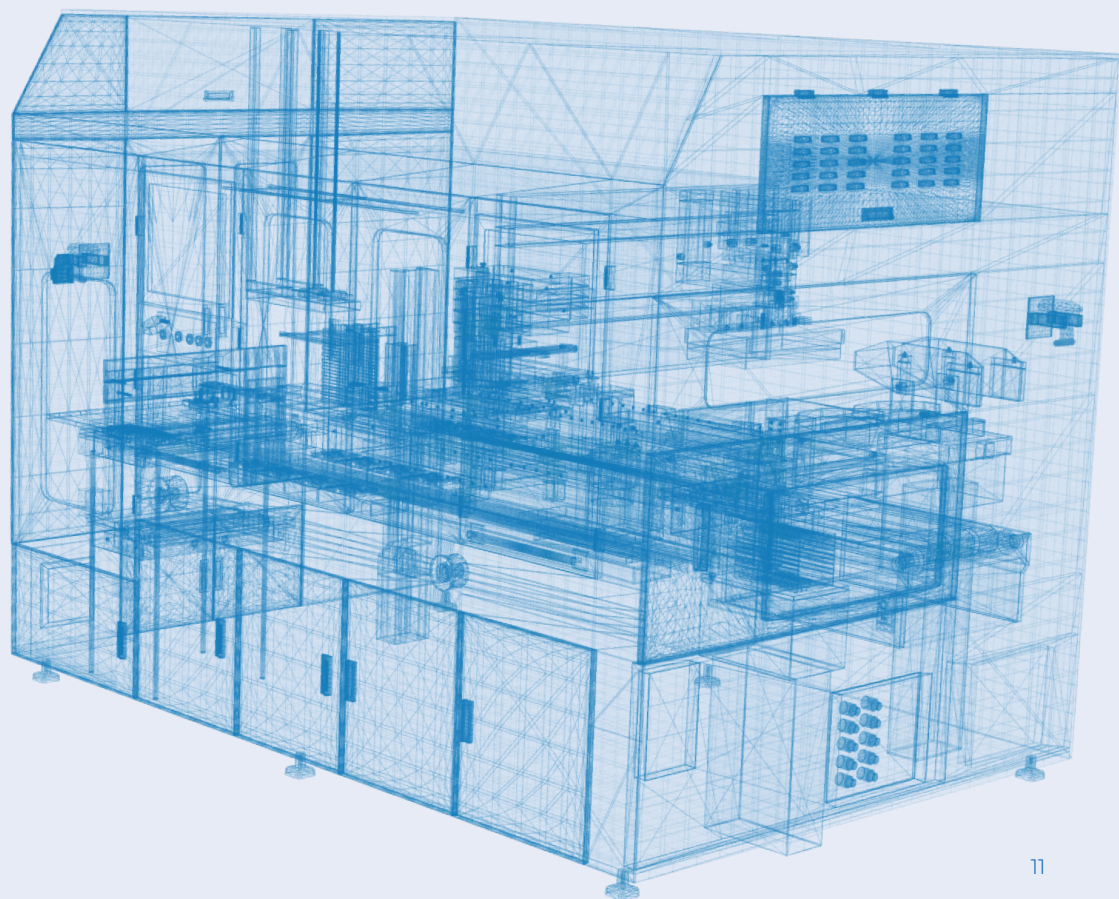
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# Semiconductor manufacturing equipment (SME)

Semiconductor manufacturing demands specialized tools and constant adaptation. OMRON supports this with relays, switches, connectors, and sensors for advanced equipment.

Our HVC-P2 image sensing module combines ten functions in a compact design, including personnel detection in cleanroom attire. The E8Y-L pressure sensor with digital display ensures precise pressure control, vacuum maintenance, and leak detection. For circuit boards, G6K, G6J, and G6S signal relays save space while delivering reliability.



# A tailored product range for advanced manufacturing equipment

Our products boost productivity and reliability across semiconductor manufacturing—from power supplies and interfaces to PCBs, control panels, and devices. We offer human presence detection, flow sensors for vacuum and gas monitoring, and both contact and contactless technologies for object detection. The product range includes both mechanical contact technology (microswitches) and optical technology (photomicrosensors) for object detection within equipment.

## Semiconductor Manufacturing Equipment



## 1 POWER SUPPLY, MEASUREMENT, MOTORS & SOLENOIDS

Device power on-off  
Controlling measurement circuits and drives

### **Power relays**

G2RL  
G6B  
G7EB-E2  
G9KA-E

## 2 CONTROL PCBs

Switch test signals, switch power circuit

### **Signal relays**

G6K  
G6J  
G6S

### **MOSFET relays**

G3VM

### **High-frequency relay**

G6K-RF

Settings, I/O signal switching

### **DIP switches**

A6TN/A6SN

## 3 INSIDE OF THE BOARD

Signal and power supply connection

### **Input/Output PCB connectors:**

XW4M  
XW4N

### **MIL connectors**

XG2/4/5

### **FPC/FFC connectors**

XF2M/XF3M

## 4 COVER

Open-close status detection

### **Basic switches**

D3V/SS/D2F

### **Sealed ultra Subminiature basic switches**

D2HW/D2EW/D2EW-R

Open-close status detection embedded in device  
Object position/direction detection

### **Photomicrosensors**

EE-SX

### **Light convergent/diffuse reflective sensor**

B5W-LB/DB

## 5 CONTROL PANEL

Interface for device control

### **Tactile switches**

B3SL/B3W/B3FS/B3FS key tops

### **Push-button switches**

A16/A22/A30

## 6 HUMAN PRESENCE DETECTION

### **Human Vision Components:**

B5T HVC Top View for Human Body Detection, including OKAO software

B5T HVC Human Body Detection wearing clean suit, including OKAO software

## 7 INTERNAL DEVICES

### **Micro Pressure Sensor**

E8Y-L (NEW!)

Nitrogen gas flow control

### **MEMS flow sensors**

D6F-A

D6F-P

Filter vicinity

Clogged filter detection

### **MEMS flow sensors**

D6F-V

D6F-W

D6F-P

D6F-PL

Vacuum maintenance in process chamber

Abnormalities in exhaust gas detection

## Power relays

## MOSFET relays



G2RL

G6B

G7EB -E2

G9KA-E

G3VM-UR (VSON)

## High frequency relays



G3VM-QR (S-VSON)

G3VM-QV, -UV (with  
internal resistor)

G3VM-YR (WSON)

G3VM-WR (PSON)

G6K-RF-S, -T

## Signal relays

## Photomicro sensors



G6K-RF-V

G6K

G6J

G6S

EE-SX

## Reflective sensor



B5W-LB

## Flow sensors



D6F

## Pressure sensor



E8Y-L **(NEW!)**

## MIL connectors



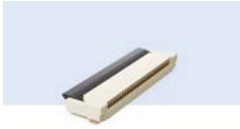
XG2/4/5

## I/O connectors



XW4M/N

## FPC connectors



XF2M/XF3M

## Basic switches



SS

## Tactile switches



B3SL

## DIP switches



A6SN

## Pushbutton switches

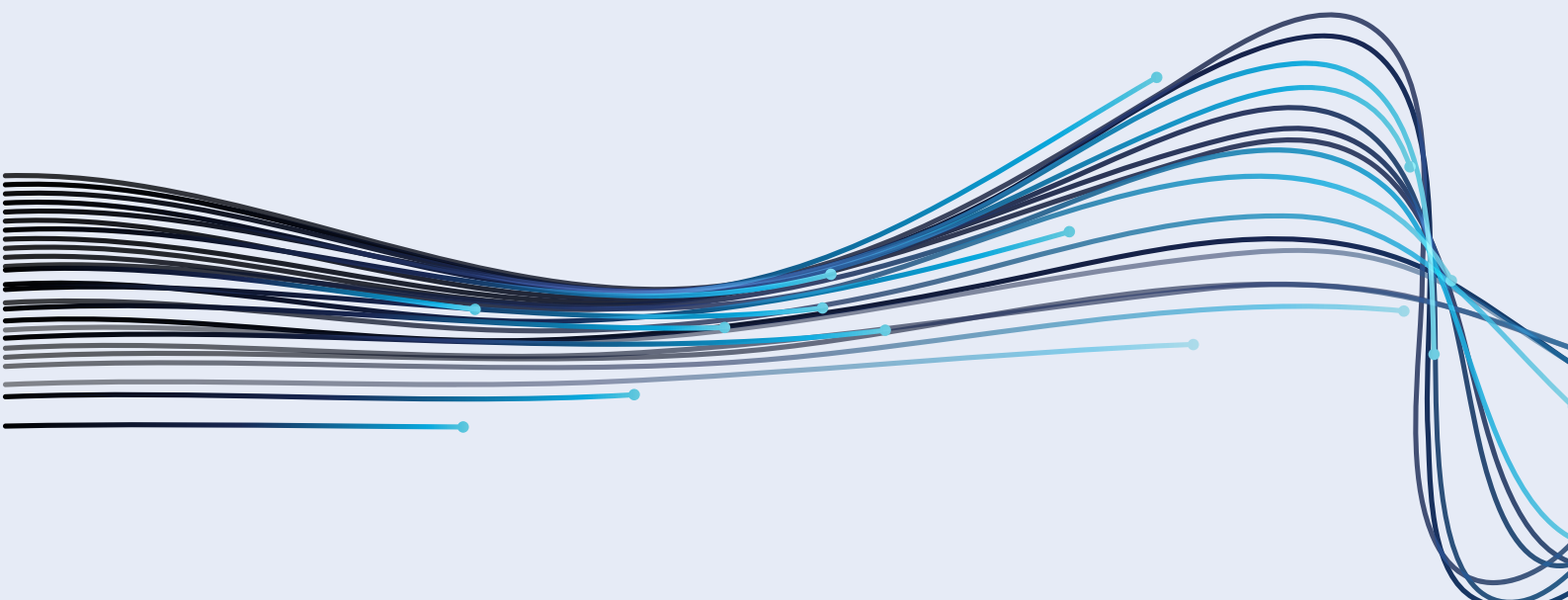


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## More ways to search



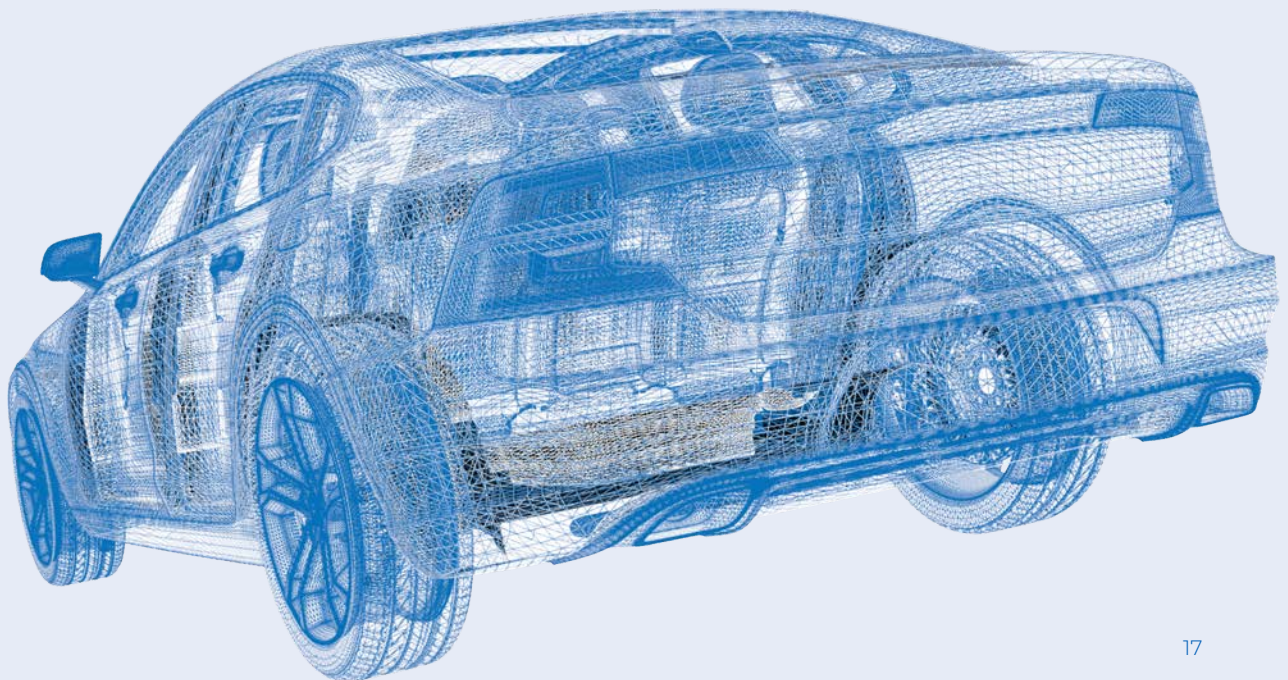
You want to search for MOSFET relays by parameter? Visit this page to discover our full range for semiconductor testing equipment.



# Device testing

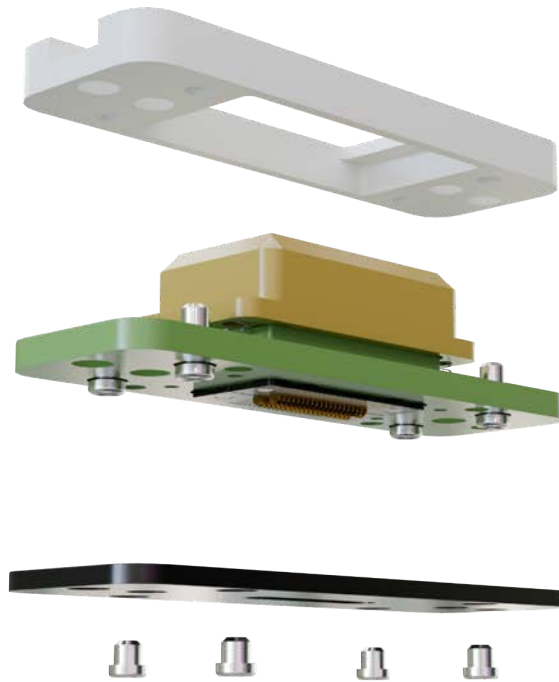
Many devices using high-frequency signals have rapid release cycles, demanding inspection equipment that adapts quickly to new, complex designs. Applications, like for instance vehicle ECUs, require technical complexity and meantime durable inspection. This determines a need for multiple terminals, narrow pitches and high-frequency features.

OMRON supports this with advanced electroformed (EFC) blade pins for reliable testing.

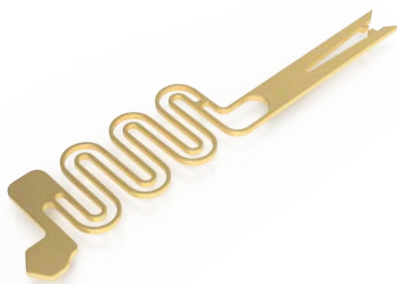


# Customised sockets for efficiency and peace of mind

OMRON's customised socket designs enhance testing efficiency and reliability to support innovation in various applications like vehicle ECUs, advanced driver assistance systems (ADAS), camera/display modules and other high-end electronic components. Offering a long operating life and high precision, our testing sockets significantly reduce operational downtime and maintenance.



With a fully customised pin tip, connection to the tested object is much more reliable



## Blade pin

Achieves mechanically and electrically stable contact with virtually no failures, thanks to custom design, proprietary materials, and optimized pin structure.





## Pogo pin

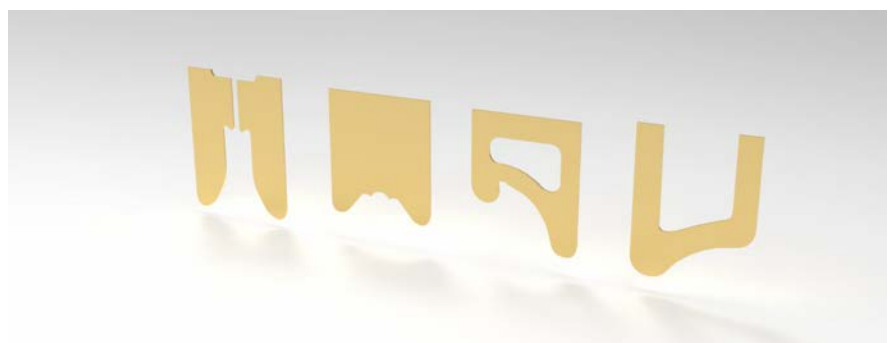
Difficult to conduct mechanically and electrically stable inspections due to single point contact between the pogo pin and the connector conductive part. Prone to contact failure.

## Cutting-edge electroforming technology

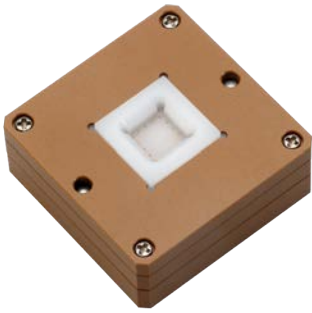
The probe pins packed into advanced testing sockets are manufactured using our proprietary electroformed components (EFC) process technology. This produces highly durable pins with complex shapes and excellent spring properties, while can be manufactured with precision on the order of microns.

	Blade pin	Pogo pin
		
<b>High durability</b>	500,000 cycles	< 100,000 cycles
<b>High precision measurement</b>	30mΩ High inspection accuracy even for devices under test that require low contact resistance	70mΩ Difficult to use for devices under test that require low contact resistance
<b>High inspection pass rate</b>	99.8% at module inspection	80%
<b>Narrow pitch</b>	≤ 0.175mm	≥ 0.35mm

The shape of the blade pin can be customized to meet customer needs



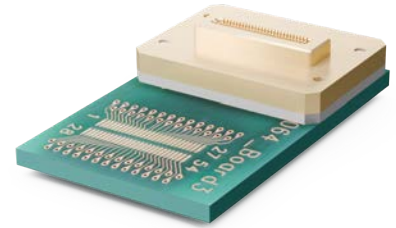
EFC pins/sockets are suitable for inspection in the automotive, consumer, and industrial sectors.



**High Frequency test**  
**Up to 50GHz**  
Wi-fi/LAN, GPS, etc.



**High Power test**  
**Up to 10A**  
Power IC, etc.



**Narrow Pitch test**  
**min 0.175mm**  
Camera/Display module, etc.



**Automotive ECU**  
**B2B Connector test**



**Automotive BMS**  
**FPC Connector test**



**XP2U**  
**USB-C type test**



# Other high frequency applications

As high frequency technologies evolve, improving infrastructure and living standards around the world, new applications for our high frequency components are emerging all the time. They are already widely used in testing & measurement, in numerous electronic devices with communication functions, or in infrastructure equipment like telecommunications base stations.



Testing & measurement equipment



Communication devices



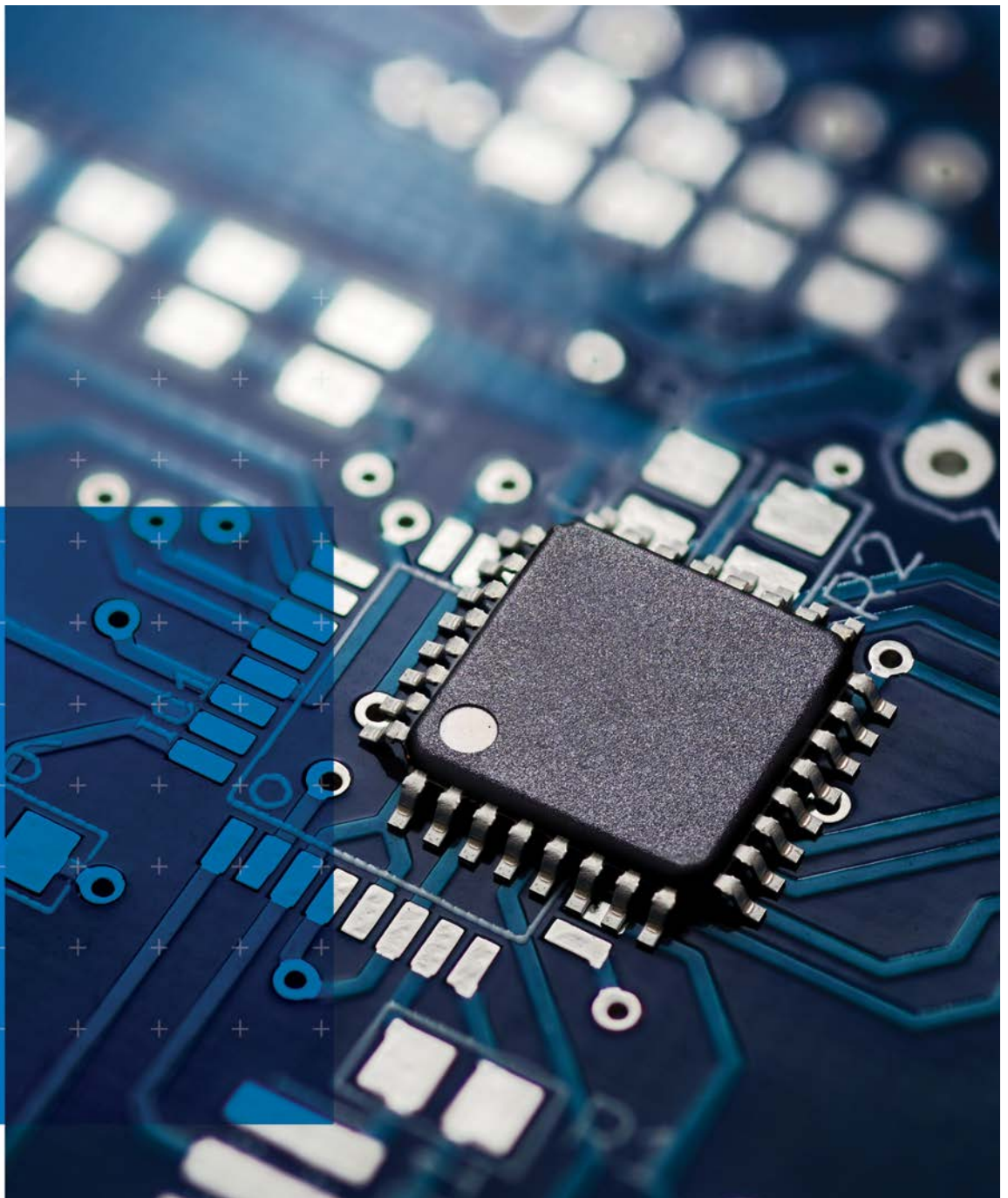
Base stations

# About OMRON

OMRON Corporation is a global leader in the field of automation. It provides a variety of products and services in the fields of industrial automation, electronic component industries and healthcare.

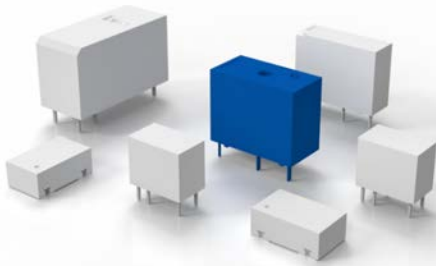
Based in Kyoto, Japan, OMRON has head offices in Kyoto, Singapore, Hong Kong, Amsterdam and Chicago. It employs more than 37,000 people in 36 countries. The European division has its own development and manufacturing facilities. Local customer support is provided in all European countries.

OMRON seeks to anticipate the needs of future generations. This is the inspiration for all our products and services. We engage with customers to advance not just products, but also the way they are created and used. From the birth of an idea to the production line and right through R&D, shipping and aftersales, we are continually exploring new possibilities. Our aim is to create maximum value for you.



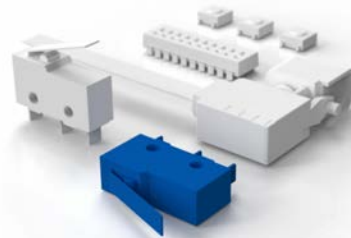
## Our full line-up

### Relays



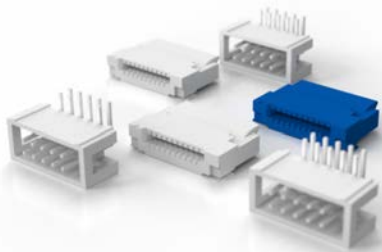
Scan for more information.

### Switches



Scan for more information.

### Connectors



Scan for more information.

### Sensors



Scan for more information.

## EUROPEAN HEAD OFFICE

### OMRON ELECTRONIC COMPONENTS EUROPE B.V.

Wegalaan 57  
2132 JD Hoofddorp  
The Netherlands  
Tel: +31 23 568 1200  
Fax: +31 23 568 1222  
Email: [info-components-eu@omron.com](mailto:info-components-eu@omron.com)

## EUROPEAN SALES OFFICES CENTRAL & EASTERN EUROPE

Karadzicova 14  
82108 Bratislava  
Slovakia  
Tel: +421 2 5824 0900  
Fax: +421 2582 40999

## UK, IRELAND, BENELUX & NORDIC

OMRON Electronic  
Components Europe  
Seebeck House, 1 Seebeck Place,  
Knowlhill, Milton Keynes, Bucks,  
MK5 8FR  
United Kingdom  
Tel: +44 1908 258 221

## FRANCE & IBERIA

OMRON Electronic  
Components Europe  
3 parvis de la Garde  
94130 Nogent-sur-  
Marne  
France  
Tel: +33 1 41817230

## ITALY

Viale Certosa 49  
20149 Milano  
Italy  
Tel: +39 02 3268 850  
Fax: +39 02 3268 851