

SUMCO Products that Support Our Lives


SUMCO manufactures silicon wafers, a key material in semiconductor devices. Semiconductor devices that use SUMCO's silicon wafers support our lives in a variety of ways, from electronic devices around us such as mobile phones, computers, smartphones and digital appliances to automobiles, medical equipment, industrial machinery control units, as well as the control of public transportation and infrastructure.

Automobiles




Numerous semiconductor devices are at work inside motor vehicles. An extremely high level of quality and reliability is required for silicon wafers to be used for motor control in electric vehicles (EV) and hybrid vehicles (HV/PHV) and for driver assistance systems such as self-driving, automatic braking and lane-keeping functions.

Data Centers (Server Rooms)



With smartphones and computers becoming increasingly sophisticated, vast quantities of data in the form of high-quality photographs and videos are being processed in the cloud and stored in data centers. SUMCO's high-precision leading-edge silicon wafers are used for the memory and logic chips that store and process enormous volumes of data.

Smartphones, Tablets, Computers




Large numbers of cutting-edge semiconductors are used in telecommunications equipment including logic chips to run various applications such as email and internet browsing, image sensors and memory to store data. Every year, the functions of these semiconductors become more sophisticated, and they are made using SUMCO silicon wafers.

IoT/Digital Appliances



IoT devices, including wearable devices and digital appliances that can be operated via smartphone, are connected to the internet. SUMCO's silicon wafers are used in the data communication semiconductors and sensors equipped in these devices.

Cameras



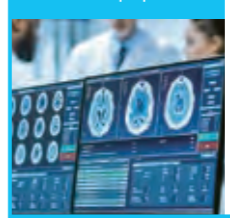
Digital cameras record precious memories while security cameras protect public safety. As the "eye" of these cameras in taking videos and images, semiconductor devices called image sensors are used. The high quality and reliability of these image sensors are also supported by SUMCO's silicon wafers.

Trains, Bullet Trains



Devices called power semiconductors are used to control electric power. These devices are technically complex and require reliable control of large amounts of power and power saving performance, making this a specialized field. Power supply control for heavy electric machinery, in particular, such as electric trains that use power of over 1000V, requires special know-how for the silicon wafers, as well.

Medical Equipments


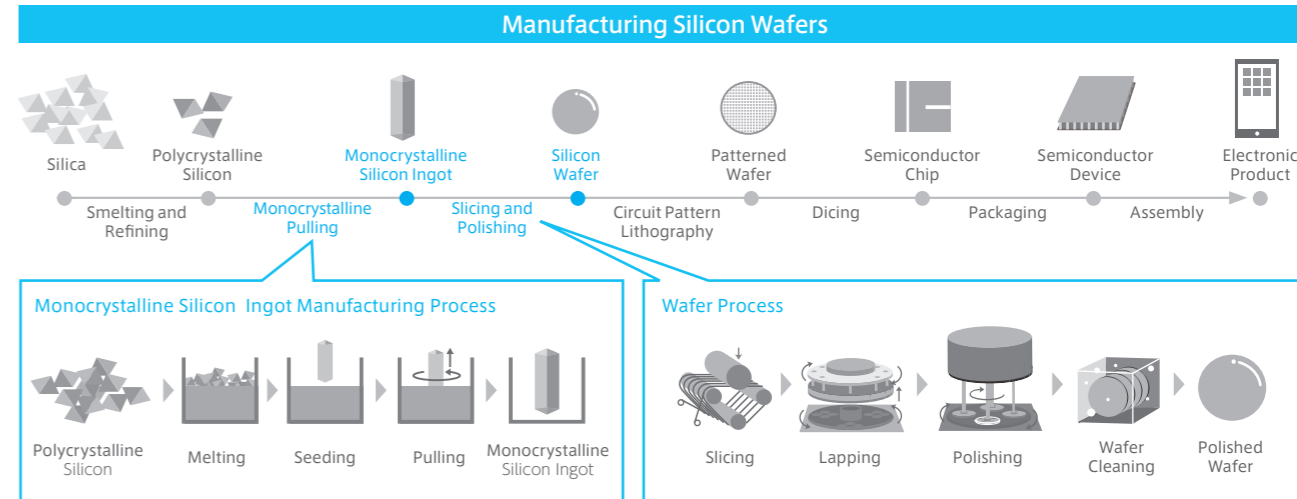


In the medical field, medical equipment has continued to evolve, with the advent of high-precision diagnostic imaging equipment and surgery robots capable of precise control. A large number of silicon wafers are used in these medical devices, and the silicon wafers that serve as their substrates require high reliability, especially as human lives are involved. SUMCO's silicon wafers contribute to the advance of medicine.

Power Generation Facilities and Public Infrastructure



Smart Card Devices

The production of silicon wafers is generally divided into two processes: the monocrystalline silicon process and the wafer process. In the monocrystalline silicon process, polycrystalline silicon is melted to produce monocrystalline silicon ingots. In the wafer process, these monocrystalline silicon ingots are sliced into wafers, which are then polished and cleaned to create a flat, mirror-like surface.