



Elmos Company profile

Section: Product matrix and product contribution

Coverage: Elmos Group

Supported UN SDGs:



Addressed GRI Standards: 2-1, 2-6

Product matrix

Elmos products make a major contribution to greater environmental protection and efficiency, health and safety, as well as comfort and well-being. Applications in the areas of motor control & thermal management and smart home, in particular, contribute to greater environmental protection and efficiency. Applications in the areas of airbags, exterior lighting and ultrasonic environment detection make a particular contribution to greater safety and health. Ambient lighting, optical ICs, ultrasonic environment detection and smart home applications are the main contributors to greater comfort and well-being.

An analysis of our product applications shows that more than 63%¹ of Group sales make a substantial contribution to increased **environmental protection and higher efficiency**. More than 81%¹ enhance **safety and health** in road traffic, at home, or in industrial processes. In addition, more than 64%¹ of sales increase the **comfort and well-being** of end consumers. For the purposes of this sales analysis, all applications with a high or medium impact are considered to make a significant contribution, while applications with a low or no impact are not considered.

		Contribution to increased		
		environmental protection and efficiency	safety and health	comfort and well-being
Automotive				
Application	Airbags	low	high	low
	Ambient lighting	medium	low	high
	Exterior lighting	medium	high	low
	Motor control and thermal management	high	medium	medium
	Optical ICs (incl. Rain/Light/Tunnel)	-	medium	high
	Power management (including eFuses)	medium	low	low
	Sensor ICs (including battery management)	medium	medium	low
	Ultrasonic sensors for environment detection	low	high	high
Non-automotive				
	Industrial automation	medium	medium	-
	Smart home	high	medium	high

In other words, Elmos semiconductor solutions are already making our world greener, safer, and more comfortable. However, as the majority of our products can serve several purposes at the same time (environmental protection, safety and comfort), it is difficult to define specific targets here. Nevertheless, the topics of sustainability and climate change mitigation regarding our product portfolio and the development of new semiconductor applications will continue to play an important role in the future, in order to be able to offer further innovative solutions for the significant reduction of greenhouse gas emissions in our product segments. However, this depends to a large extent on the implementation of the relevant applications by customers and end customers in the end market, which Elmos cannot influence.

¹ In relation to Group sales in 2025.

Product contribution: Environmental protection, safety, comfort

In its more than 40-year history, Elmos has established itself as one of the world's most experienced companies for analog mixed-signal semiconductors in the automotive sector. Elmos accompanies the structural change in the automotive industry with unique solutions and thus plays a decisive role in shaping the mobility of tomorrow. Our pioneering products form the interface between the analog and digital worlds and ensure greater safety, efficiency, comfort and environmental protection, primarily in the automotive sector, but also in related future technologies such as smart homes, industrial automation, robotics, and cybersecurity. We are a global leader in many of our application areas and continuously develop intelligent innovations that offer added value for our customers and end users.

Automotive applications (share of sales in FY 2025: 94%)

As a specialist in advanced automotive applications, our ICs (integrated circuits) provide pioneering solutions for the challenges of global automotive megatrends and enable the use of intelligent electronics in modern vehicle architecture. The innovative product portfolio from Elmos supports autonomous driving; it is an important component of modern Advanced Driver Assistance Systems (ADAS), it improves environmental protection through consumption-optimized or emission-free drives, it increases the efficiency of systems throughout the vehicle, it enables the development of modern on-board networks and software functions and maximizes the safety, convenience and well-being of drivers and passengers.

Ultrasonic sensors for environment detection

Elmos is focused on applications in the area of safety for vehicle occupants and other road users. Elmos ICs for ultrasonic sensors are indispensable for maximum safety in Advanced Driver Assistance Systems (ADAS) and in autonomous or semi-autonomous driving, as they enable highly precise detection of the area around the vehicle.



Measuring distances and detecting the environment using ultrasonic sensor ICs is a long-time proven, reliable, and highly efficient key technology. As a market leader, Elmos has already delivered more than 2 billion ultrasonic ICs to customers worldwide since the start of series production in 1998.

Elmos ultrasonic ICs support modern driver assistance systems by providing precise 360-degree detection of the surrounding area at low speeds, for example, in the city or in slow-moving traffic on the highway, at ranges of up to six meters. Ultrasonic systems are exceptionally reliable and work in any light or weather conditions. They are also highly versatile thanks to their compact design, as well as cost-effective. The environment sensor technology with Elmos ultrasonic ICs detects obstacles, pedestrians, cyclists or animals extremely quickly and very accurately. In emergency situations, automated systems often react far more rapidly than humans and can, therefore, prevent accidents or at least reduce the impact, for example, with emergency brake assistants. The latest generation of Elmos ultrasonic ICs with AI-based sensor technology enables even more precise environment detection around the vehicle in near real time, while at the same time detecting interference signals, e.g. from cobblestones, and distinguishing them from real dangers around the car. This means that obstacles can be detected even earlier and more accurately than before. Objects can be reliably detected at a distance of just a few centimeters, and AI-supported grid map technology can even differentiate between heights. This further increases driving safety. Our IC solutions also enable fully automated parking or autonomous driving at slow speeds. The latest generation of Elmos ultrasonic ICs also requires only around a quarter of the energy of previous ICs, despite significantly higher performance. This pioneering development will primarily be used for autonomous driving at levels L2 to L5 and in electric vehicles.

In addition to increased safety, ultrasonic ICs in park assist systems ensure stress-free parking without the need for instruction in almost any parking space, thus preventing damage to vehicles and infrastructure.

Advanced systems featuring ultrasonic technology detect parking spaces and take over parking and exiting operations fully automatically, even in the smallest of parking spaces, regardless of whether the space is perpendicular or parallel. This allows parking spaces to be used efficiently and significantly reduces urban parking traffic.

Interior lighting

Lighting is an important topic for the appealing aesthetics of modern vehicles and for the well-being of the occupants. There are new applications in the interior and exterior of vehicles in which entire areas can be efficiently illuminated with LEDs and individually designed. Nowadays, attractive and harmonious interior lighting with modern interior lighting concepts is standard in almost all vehicle segments. New dynamic ambient lighting concepts with the help of Elmos ICs develop the lighting experience further, create emotions, increase the comfort and well-being of the occupants, and warn in time of potentially dangerous situations.



Ambient lighting concepts with Elmos LED controllers make it possible to illuminate the interior, dashboard, center console, doors, or headliner in almost any shape, color, and color temperature completely individually. Using LEDs can significantly increase energy- and cost-efficiency. LEDs save up to 80% in energy compared to traditional light bulbs and have a significantly longer life. LEDs contain no harmful or toxic chemicals, can be recycled and are, therefore, considered very environmentally friendly.

Exterior lighting

Elmos semiconductors for automotive rear lights have been setting new standards for very bright and constant light intensity with low energy consumption and individual design options for many years now. Since the start of production of LED controller ICs for use in and around the car, Elmos has delivered a total of more than 1 billion of these microchips.



Compared to conventional light bulbs, LED rear lights reach maximum brightness far more quickly, which can reduce the reaction time for the following traffic, especially when braking, which, in turn, reduces the braking distance. In addition to the higher safety standards, Elmos LED rear light drivers offer vehicle manufacturers a wealth of new design options for a striking and dynamic vehicle rear, combining great design freedom with high functionality, safety and energy efficiency.

We are also developing new drivers for OLED applications in rear lights and for front grille designs. Illuminated front grilles are increasingly becoming an important new feature in modern vehicles, as the “illuminated grille” creates strong and unique brand effects. In addition, lighting concepts in the front grille support the vehicle’s communication with other road users or pedestrians – an important function in driverless autonomous driving.

Airbags

In addition to active assistance and safety systems, passive safety systems, such as airbags, contribute significantly to the safety of vehicle occupants and prevent or even reduce serious or fatal accidents. Elmos airbag ICs enable the airbag control unit to deploy the relevant airbags – or several airbags simultaneously if necessary – in fractions of a second in the event of a front, rear or side crash, or to activate restraint systems such as the belt tensioner.



Some modern vehicles are fitted with up to 30 different airbags to provide occupants with the best possible protection in the event of an accident.

In fully autonomous driving, the possible applications and number of airbags will continue to grow in the future because the different postures and adjustable seat angles in a self-driving car would mean that conventional restraint systems such as the three-point safety belt would only provide insufficient occupant protection in the event of an accident. To do this, the system must precisely detect the position of the occupants in the vehicle so that the correct airbags are deployed in the event of an accident.

Elmos ICs do more than provide better protection for vehicle occupants. Special pedestrian airbags soften the impact that a pedestrian or cyclist has on a vehicle and significantly reduce the effects of an accident.

And from an environmental point of view, airbags also contribute positively in a way that should not be underestimated. Installing airbag systems means that lightweight materials can be used, thus considerably reducing the weight of the vehicle chassis without compromising the safety of its occupants.

Motor control

As the electrification of vehicles progresses, the demand for intelligent electromechanical components such as actuators, fans and pumps is rising sharply. In modern vehicles, several dozen of these little assistants enable the electronic and automatic control of a variety of systems and functions in the interior and exterior of the vehicle. The increasing use of motor control ICs is mainly driven by comfort functions and the thermal management system, which is essential for all electric vehicles to increase efficiency and range.



Elmos is already a leading global specialist for reliable IC solutions for DC, BLDC and stepper motors. Since the market launch of the first motor control solutions over two decades ago, Elmos has delivered a total of more than 1 billion motor control ICs. We launched our latest generation of products last year,, including a new optimized controller for high-performance brushless motors and a range of fully integrated motor drivers for different power ranges. These new products enable highly efficient and low-noise drive solutions for a variety of motor types in a power range from under 5 watts to over 1 kilowatt. This means that applications such as valves, pumps, active radiator grille shutters, fans, air conditioning flaps and all types of actuators can be operated very efficiently and almost silently. In addition to the innovative hardware, Elmos also provides a modern, qualified software platform for the motor control ICs, which enables complete system solutions and significantly reduces development times for new applications.

Thermal management

In the field of electromobility, thermal management plays a crucial role in optimizing efficiency, charging times, and ranges of hybrid and electric vehicles. Our portfolio in this area is constantly growing. Elmos' thermal management products cover the three core elements – engine, battery, and interior – and enable intelligent cooling and thermal management in modern vehicles.



To ensure perfect interaction between the coolant and refrigerant circuits, Elmos motor control ICs regulate a large number of pumps, valves, and flaps throughout the vehicle, thus maintaining an optimal operating temperature for all mechanical and electronic components. This increases the efficiency of the drive system and reduces energy and fuel consumption.

Unlike in vehicles with internal combustion engines, the heat for heating the interior of battery-powered vehicles must be generated by the battery alone. Optimum and highly efficient temperature control is therefore very important, especially in winter, in order to use as little energy as possible from the battery.

Elmos motor control ICs also help here. Smart air-conditioning shutters and vents allow the airflow in the interior to be regulated with great precision. Individual climate zones allow each occupant to enjoy a personal feel-good temperature without having to heat or cool the entire vehicle cabin and consume unnecessary energy.

Elmos' innovative applications in the area of thermal management support the expansion of electromobility, enable a reduction in vehicle emissions, and thus make a significant contribution to protecting the environment.

Sensor ICs (including battery management)

Elmos sensor ICs are the important interface between the analog and digital world. With new zonal E/E architectures and software-defined vehicles, the importance of intelligent sensor technology at the edge of the vehicle is increasing. Controlled by Elmos Sensor Signal ICs, sensors detect and monitor many different real, physical variables and convert them into digital signals. Sensors are, so to speak, the sensory organs of the vehicle, perceiving the real environment so that the central computers can control the vehicle safely and efficiently. Elmos offers a variety of innovative ICs for different sensors, including in battery management, rain and light sensors, and high-precision brake pressure measurement, which significantly increases the reaction speed when braking and thus improves driving safety.



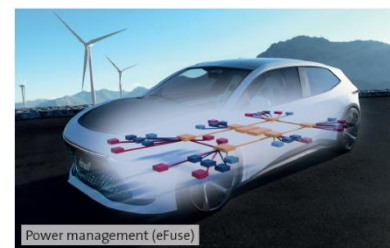
Elmos sensor ICs have been setting standards for more than 25 years, for example, for measuring pressure and temperature in vehicles. In electric vehicles, Elmos semiconductors for Battery Management Systems (BMS) monitor the operating and charging status of the battery system, regulate the charging and discharging cycle as well as power output to the various loads, and maintain the voltage and operating temperature of the battery within an optimal range. This increases the safety, performance, and service life of the battery.

Brake-by-wire systems supported by Elmos brake pressure sensor ICs are gradually replacing conventional braking technologies in vehicles. Compared to classic mechanical braking systems, they offer optimum control and a significantly faster response time. They also allow the braking behavior to be tailored to the driver's individual requirements.

Based on proven technology, we have developed new fully integrated rain sensors for the windshield, which raise the detection quality of water and dirt to a new level. A perfectly functioning rain sensor has an important task in the age of automated driving, namely to ensure a clear view of the centrally mounted front camera, and of course functional safety is also a must here.

Power management (including eFuses)

The switch to E/E zone architectures, which are essential for autonomous driving, the change to a 48-volt electrical system and increasing digitalization and software-defined vehicles, are increasing the demand for innovative and intelligent solutions for electronic fuses. Modern vehicle designs require a high and reliable supply of energy, especially in the case of electric and hybrid vehicles. With the new eFuse product family, classic fuses can already be replaced today. Unlike conventional fuses, electronic fuses respond extremely quickly and reliably. In addition, eFuses are more sustainable because, unlike fuses, they do not have to be replaced after triggering. Electronic safety systems also enable the creation of flexible and software-defined vehicle system architectures and help to reduce weight by reducing the number of wiring harnesses in the vehicle.



Cybersecurity

As cybersecurity threats increase due to the rapid rise of AI and quantum computing, the need for secure and robust encryption is growing rapidly. Increasing connectivity, digitalization and software updates in modern vehicles are also increasing the requirements being placed on data protection and cybersecurity. Elmos is developing the world’s smallest quantum random number generator IC (QRNG) for this purpose. Based on quantum mechanical principles, the QRNG IC enables true random number generation and thus provides more effective protection against cyberattacks of all kinds. To achieve this, the innovative QRNG single-chip solution uses quantum principles based on in-chip photoemission to generate random numbers of the highest quality, ensuring unparalleled cryptographic security. Elmos integration is inherently stable against any kind of cyberattack (e.g., fluctuations in temperature, supply voltage, light, physical pressure, or EMC). The Elmos QRNG IC can be easily integrated into various applications such as IoT, automotive and car-to-X communication, which underlines the versatility of the QRNG IC’s application possibilities.



Non-automotive applications (share of sales in FY 2025: 6%)

Elmos ICs contribute to greater environmental protection, safety, and comfort beyond the automotive sector, too, particularly in related future technologies.

Smart home

With its semiconductor applications for smart installation and building technology, Elmos makes homes safer and more energy-efficient. Advanced semiconductor technology makes it possible to connect a wide variety of functions in homes or buildings and control them centrally and easily using a smartphone or tablet.



Advanced motion and presence detection using the Elmos PIR (passive infrared) smart sensor helps reduce electricity consumption in buildings or sends alerts about unwelcome intruders. Elmos semiconductors are used in HVAC systems in buildings to regulate room temperatures in the most efficient and energy-saving way possible, for example.

Industrial automation

Elmos semiconductors facilitate the transformation of industrial automation into Industry 4.0. Digital solutions and the connectivity of machines have made industrial processes increasingly efficient and flexible, while also enhancing productivity and quality. Costs, energy consumption, and emissions can be reduced simultaneously. Elmos semiconductors are used in a number of different areas of application, such as in temperature and pressure monitoring, power supply, or the connection of machinery with industrial processes.



Robotics

Modern robot systems such as humanoid service robots, collaborative industrial robots, and autonomous delivery robots place high demands on sensor technology, actuators, energy efficiency, and functional safety. Analog mixed-signal ICs form the central interface between the real, physical world and the digital intelligence of the robot controller.

Elmos is now achieving some initial – albeit still quite small – series sales in the field of humanoid robots. This is a very exciting and dynamic market that could potentially become greatly important in the future. Humanoid robots have a variety of electric drives to control joints, grippers, and head and body movements. Elmos motor control ICs enable precise, energy-efficient, and low-noise control of these actuators.



Elmos ICs are also used for delivery robots, which autonomously deliver parcels or food. Our ultrasonic sensor ICs enable precise obstacle detection at close range. Reliable environment detection is essential for the autonomous operation of robots.

Other conceivable fields of application for Elmos semiconductor solutions in the field of robotics include intelligent power management that ensure stable and secure energy supply for all subsystems, as well as the high requirements in data protection and cybersecurity.

With our many years of experience in safety-critical, highly reliable analog mixed-signal applications, Elmos is ideally positioned to participate in the potential growth market of robotics in the long term and to contribute to greater efficiency, safety, and convenience.

Additional documents	Company profile Materiality analysis & ESG/Sustainability strategy & ESG targets ESG policies ESG KPIs Sustainability and non-financial report Certificates Accompanying documents
-----------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
