



November 11, 2024

Applications,

Market & Customers,

Design Wins

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elmos: CAPITAL MARKETS
DAY 2024

### More Efficient, More Comfortable & Safer





Comfort & Premium



### Autonomous Driving

- 360° sourround sensing
- Pointcloud generation
- Object recognition

### Safety Warning (ADAS)

- Blind spot detection
- Side distance
- Cross traffic
- Emergency brake
- Pre-crash

### Park Assistance

- Standard parking
- Automatic parking

### Front Lighting

- High & low beam
- Daytime running light
- Turn indicator light
- Grille light
- C2X car communication

#### **Ambient Lighting**

- Stripes
- Floor light
- Roof light
- Reading light
- Door panels light
- Cup-holders light
- Dashboard surfaces

Sensing

Pressure

Force

Torque

Position

Temperature

- Footwell light
- Entry light

#### **Touchless Control**

- Display gesture recognition
- Trunk opener
- Door opener

#### Airbag Exterieur Functions

Passenger

Pedestrian

- Aerodynamic flaps
- Wiper control
- Front light leveling

### Rear Lighting

- Dynamic rear light
- Brake light
- Turn indicator light
- Reverse light
- Fog light
- Daytime running light

#### Power

- eFuse
- USB-C supply
- Antenna supply

#### **Interfaces**

- LIN/CAN bus transceiver
- PSI5 sensor transceiver

### Thermal Management

#### Engine

- Cooling fan
- Active grill shutter
- Water pump
- Water valve
- Oil pump

- Cabin

  Air flap
- Air fan
- Air tan
- Air vent
- Expansion valve
- PTC heater

### Battery

- Cooling fan
- Water pump
- Water valve

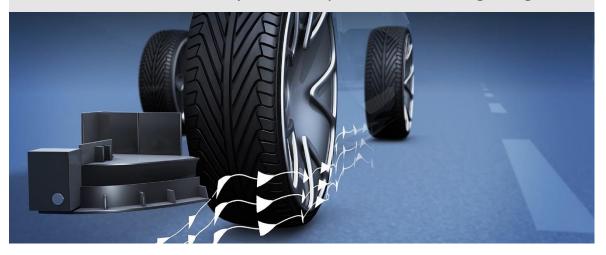
# Electrification & Efficiency – Application Examples



Electrical Fuse Control Enables Zonal Board Nets



Motor Control for Aerodynamic Flaps Extends Driving Ranges



In-Cylinder Pressure Sensing for Efficient Combustion



EV Thermal Management with Pump, Valve and Blower Control



# Comfort & Premium – Application Examples



Hand Gesture Detection to Control Charging Flaps



Well-being with Direct Flow Control for New Air Vents



Multi-Pixel Dynamic Front Lighting Applications



Ambient RGB LED Control for Surface Lighting



# Safety & ADAS – Application Examples



360° Environment Detection for Reliable Safety



Hands-On Steering Wheel Sensing for L2-L4 Autonomous Driving



Safe Airbag Firing Control for L1-L5 Autonomous Vehicles



Dashboard Ambient Light Control for Safety Warnings

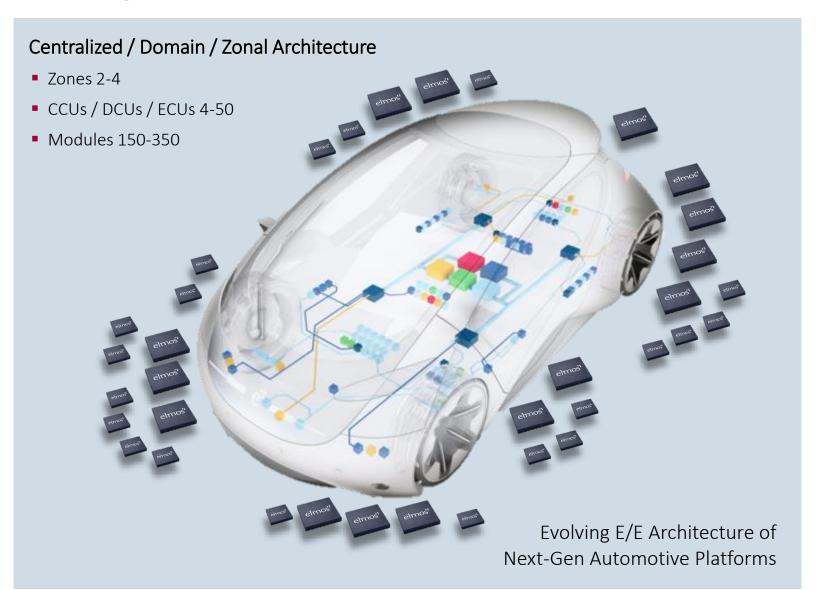


### At the Edge M/S ICs Do the Sensing & Control the Action



### Elmos Products: Mixed Signal ICs (M/S)

- Already supplied over 6 billion M/S ICs for the global automotive industry
- M/S ICs are edge devices, bridging the physical and the digital world
- Integrating analog, digital, memory and control functions in a single chip
- M/S ICs sense physical quantities, process digital data, run intelligent software, control electrical actuators and are connected to the vehicle network via high-speed interfaces
- The evolving E/E architectures of modern Software Defined Vehicle (SDV) platforms contain more and more M/S ICs for sensors, actuators, power supplies and interface devices

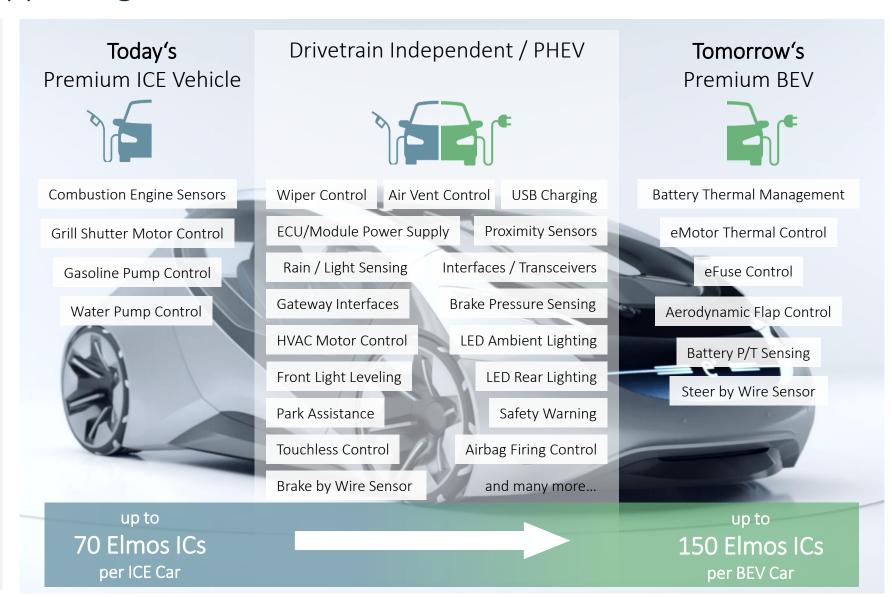


# BEV Car Platforms Supporting Further Demand Growth



# Internal Combustion Engine (ICE) vs. Battery Electric Vehicle (BEV)

- On average 8 Elmos ICs per every new car produced globally
- Vast majority of applications addressed by Elmos is independent of drivetrain type
- Additional applications and higher maximum content of Elmos ICs in pure EV platforms
- The automotive megatrends additionally increase the growing demand for Elmos products



### Elmos ICs on the Road Everywhere























# Elmos ICs Delivered to All Major TIER 1 Companies























































































...and many more

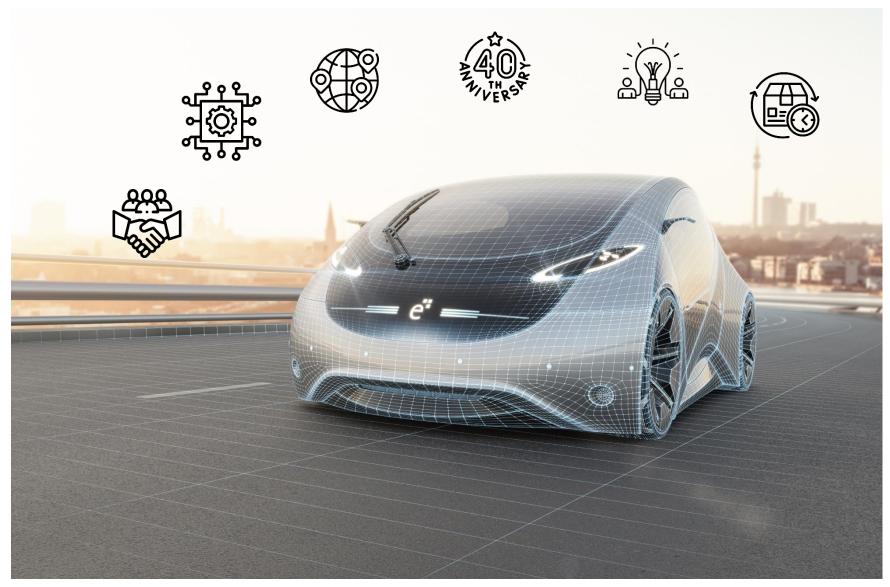


# Strong USPs for Sustainable Profitable Growth



### Elmos Key Strengths

- Close proximity to our customers and long-standing relationships with OEMs and Tier 1s
- Strong system understanding in our focus applications
- Access to the best technology for each Mixed Signal application through a leading global foundry portfolio and partner network
- 40 years of strong technical analog/mixed-signal expertise built up over the entire automotive product life cycle
- Strong innovation culture and high patent rate
- Highest supply security



### Automotive Semiconductor Market Positions



### Aiming to be the #1 Automotive IC Supplier in all of Elmos Focus Applications

Motor Control ICs for HVAC Actuators



ICs for LED Lighting Interior and Exterior



ICs for Ultrasonic Parking & 360° Ranging



Pressure Sensing ICs for Brake Systems



Airbag Firing ICs for Safety



#1 Elmos

#2 Melexis

#3 TDK Micronas

#1 Flmos

#2 Melexis

#3 TI

#4 Infineon

#1 Elmos

#2 Bosch

#3 OnSemi

#1 Melexis

#2 Elmos

#3 Renesas

#1 ST Micro

#2 Renesas

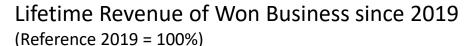
#3 Elmos

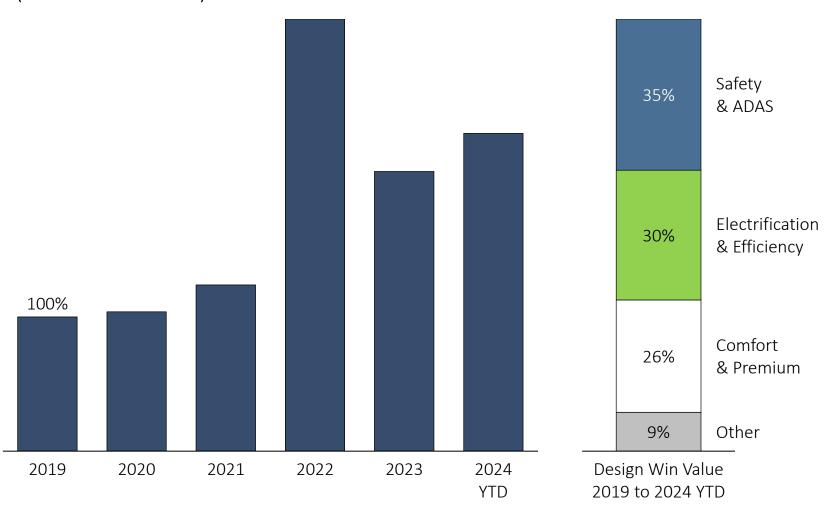
# Design Wins are Key to Sustainable Growth



### **Design Wins**

- Lifetime revenue of won business more than doubled since 2019
- Applications of new business quite evenly spread over the automotive megatrends
- Significant wins with major
   Tier1s/OEMs in all 3 application
   areas
- Reliably supplied to all customers during chip crisis + extraordinary win in 2022 due to additional project wins in allocation phase
- Strong design win results from the last years and further upcoming project wins will drive growth to around 1 billion Euro revenue in 2030









#### Disclaimer

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