Adanced LED Driver Solutions

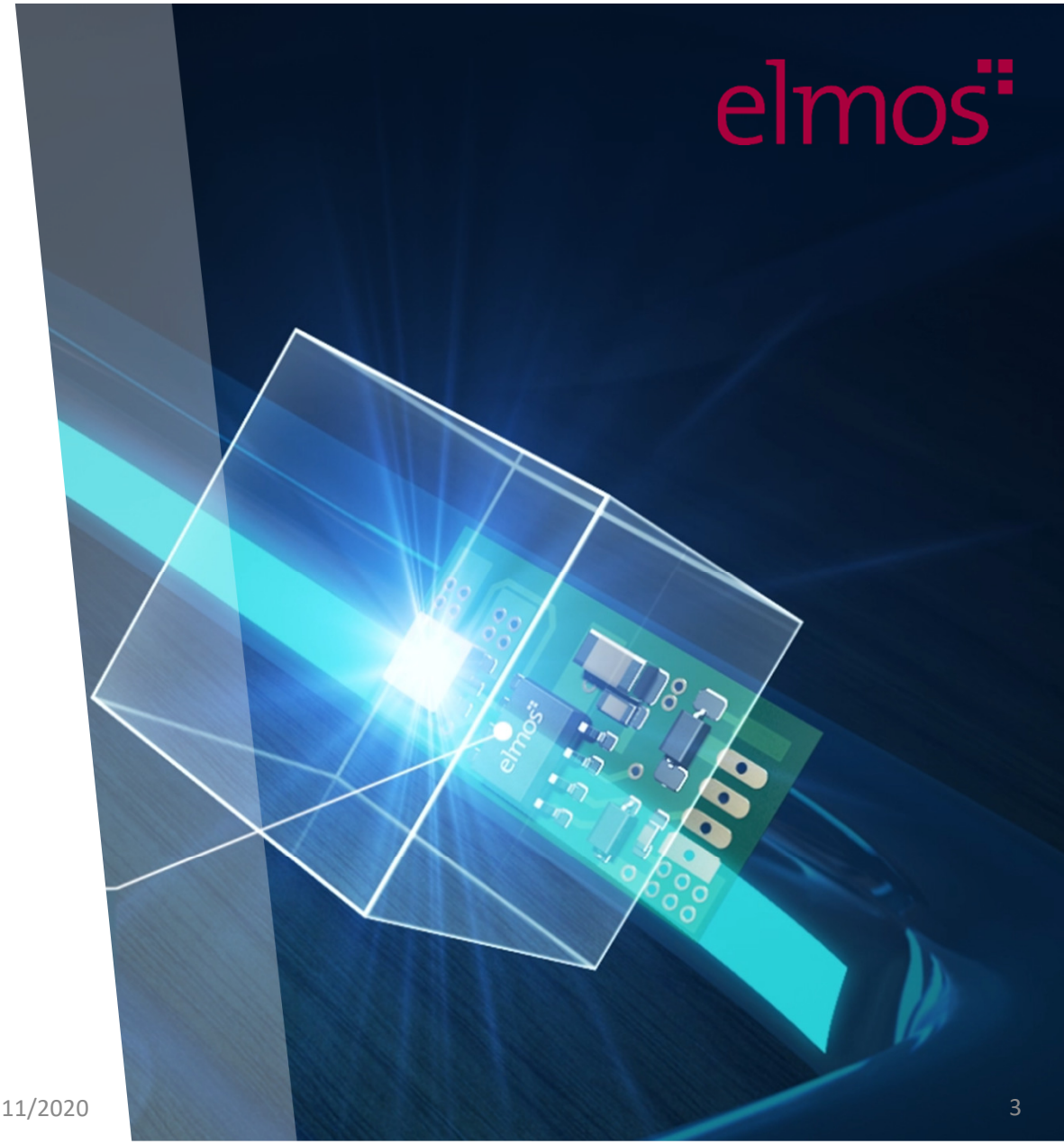
November 24th 2020 | Rutronik Automotive Digital Forum | Jatin Thaker

LIGHTING

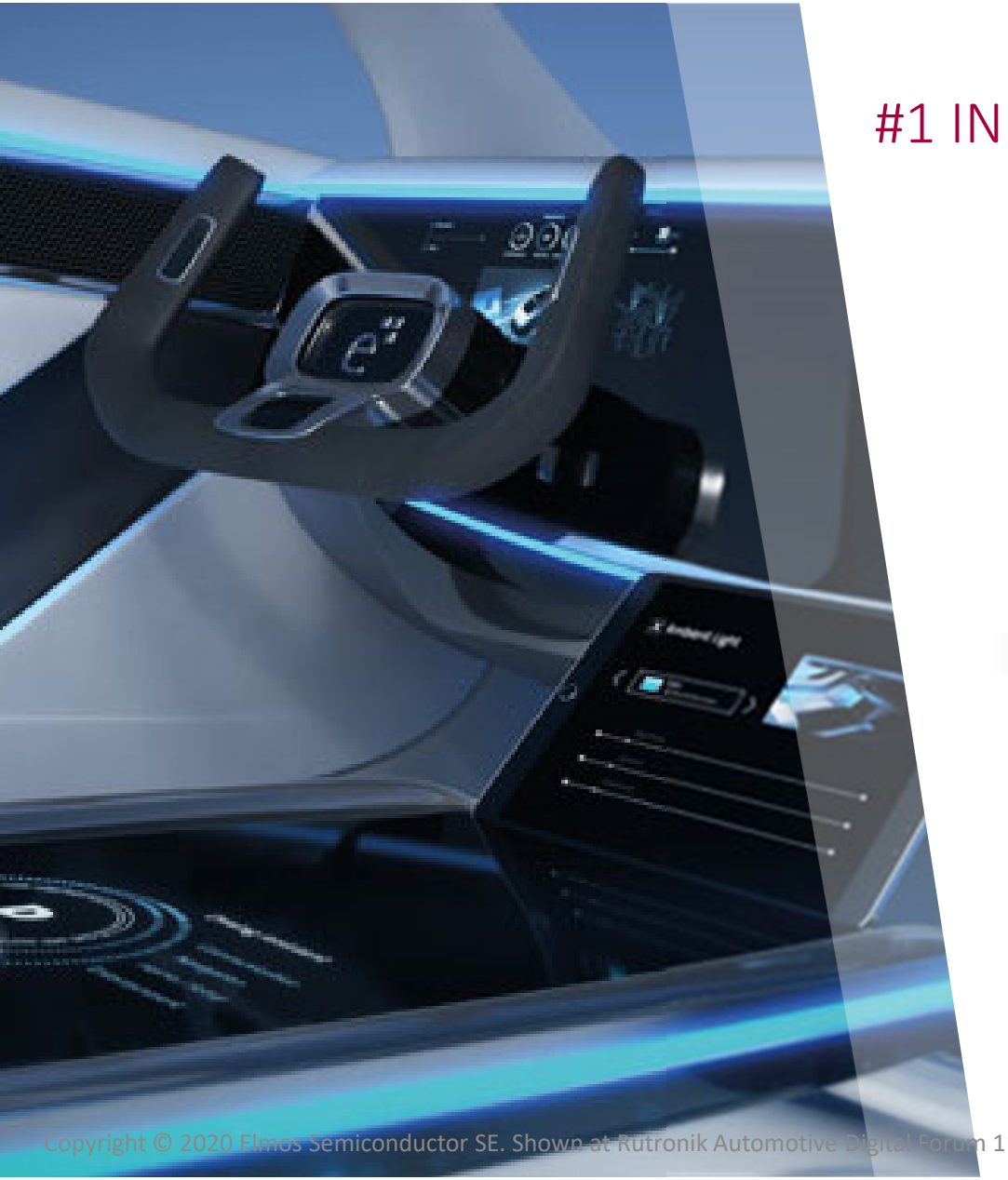
Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020

AGENDA

- Dynamic Ambient Light
  – Bus programmable 12-ch LED Driver
- Simplified technology
  – Multichannel Standalone LED Driver
- Elmos
  – Innovation matters



Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020



#1 IN AMBIENT LIGHT CONTROL

elmos

E521.31 LIN RGB 1st Generation

- Integrated16 bit microcontroller
- LIN Auto Addressing
- 32kByte Flash
- Four LED highside driver (5V)
- Package QFN32L5

E521.36 LIN RGB 2nd Generation

+ Integrated current sources
+ Package SO8-EP
+ 32kByte OTP

E521.39 LIN RGB 3rd Generation (2022)

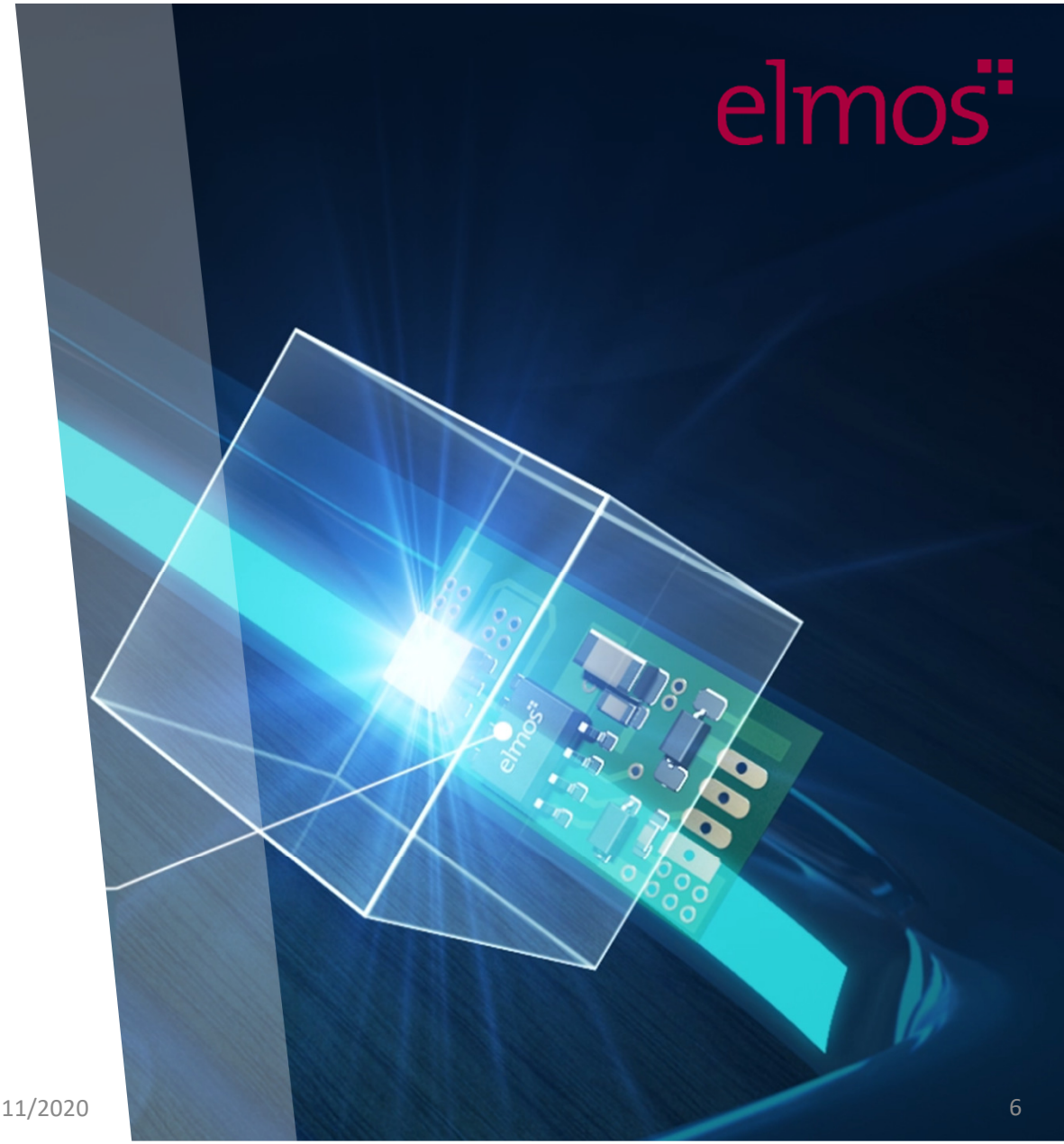
+ 32kByte eFlash
+ 2nd Generation of Auto Addressing

Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020

THE NEW TREND – DYNAMIC AMBIENT LIGHT

AGENDA

- Dynamic Ambient Light
  – Bus programmable 12-ch LED Driver
- Simplified technology
  – Multichannel Standalone LED Driver
- Elmos
  – Innovation matters



Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020

STARTING POSITION…

Highlights

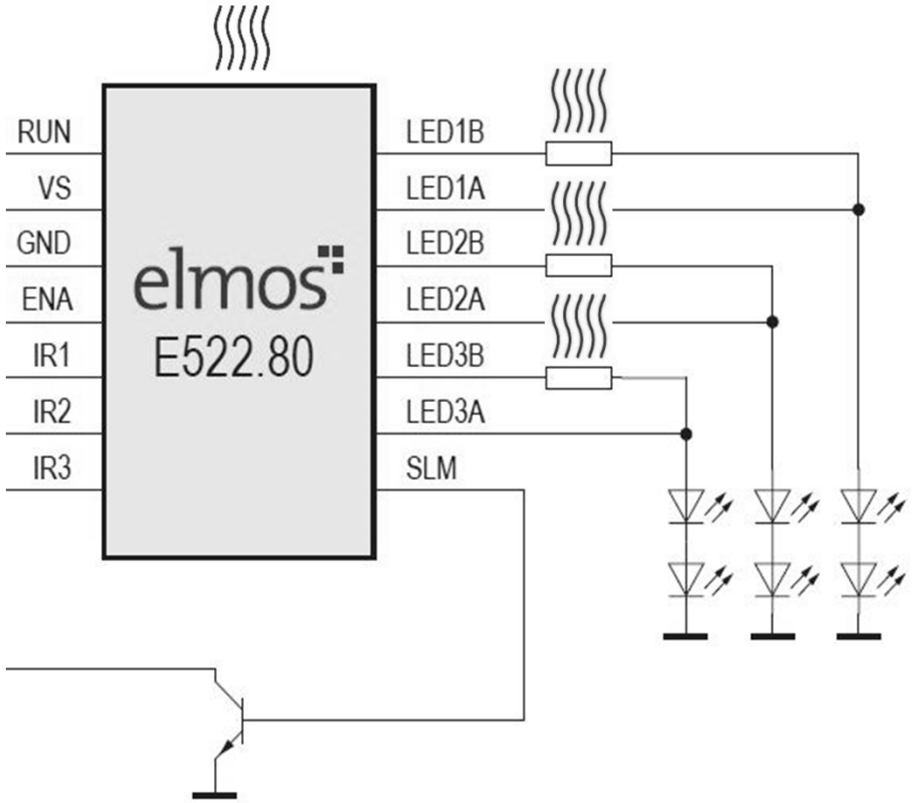
- Three independent Linear Current Drivers
- Advanced Thermal Management: Power Zeroing
- Supply and Temperature Derating supported

LED DRIVER FOR STATIC LIGHT

E522.8X & E522.9X

Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020

E522.8X/9X TRIPLE LINEAR LED CONTROLLER



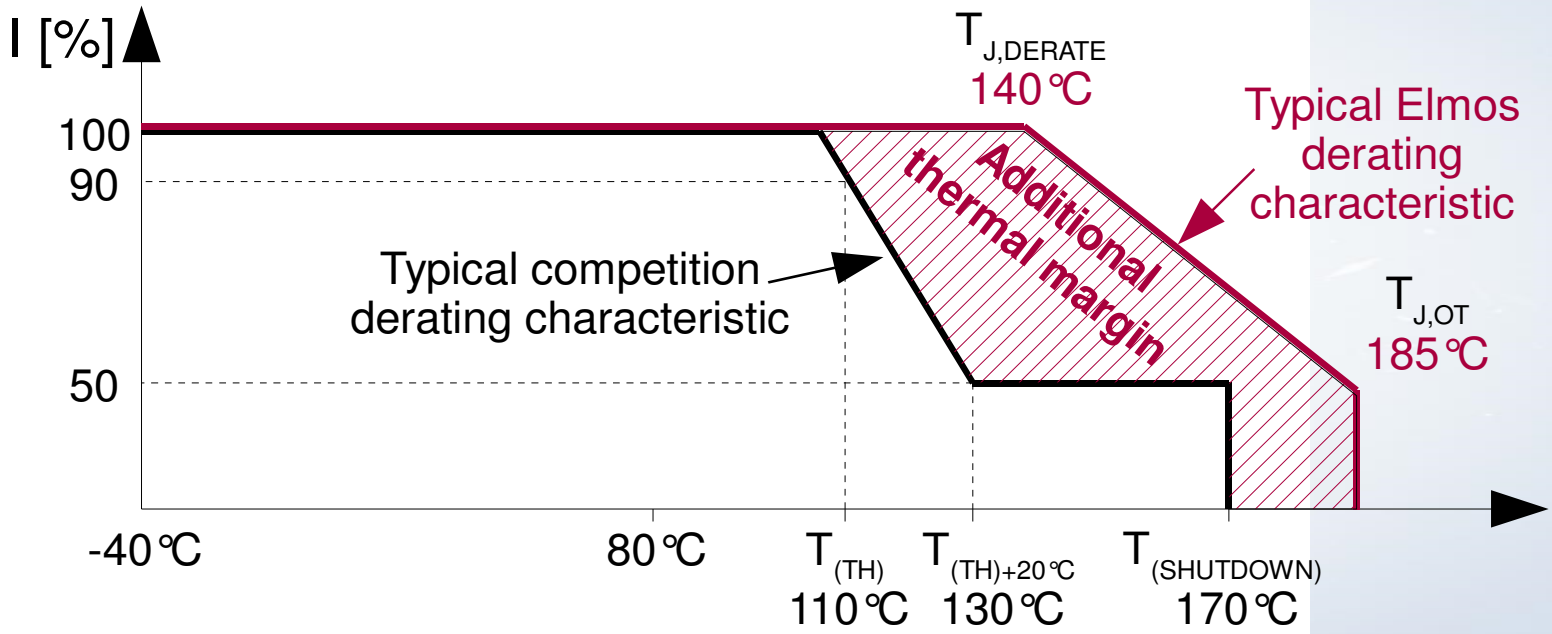
With Thermal Shunt

- External heat distribution
- Avoiding thermal derating
- Bypass for low input voltage

➢ Guarantees configured output current even in low input voltage range

Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020

THERMAL DERATING BEHAVIOR



Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020

NEXT STEP…

- More channels
- Different BUS Interfaces
- PWM included
- Failsafe concept
- Higher current
- ISO26262

LED DRIVER FOR STATIC LIGHT

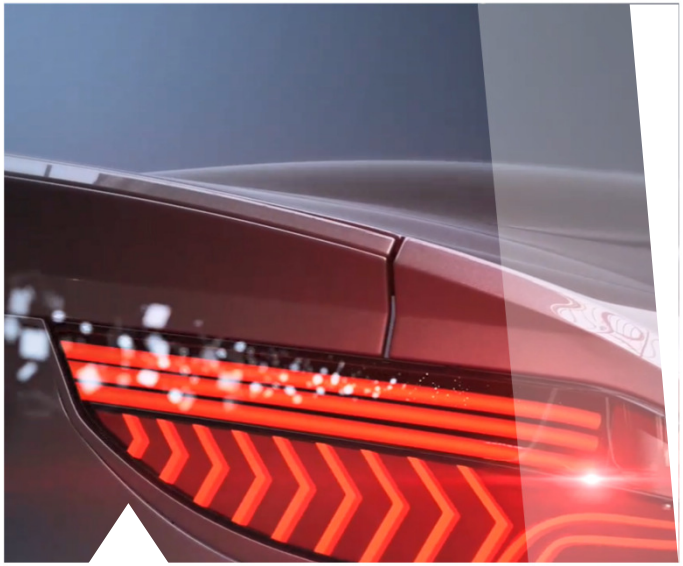
E522.8X & E522.9X

LED DRIVER FOR DYNAMIC LIGHT

E522.48/49 & E522.95

Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020

ELMOS LIGHTING PORTFOLIO



LED DRIVER FOR STATIC LIGHT

E522.8X & E522.9X

LED DRIVER FOR DYNAMIC LIGHT

E522.48/49 & E522.95

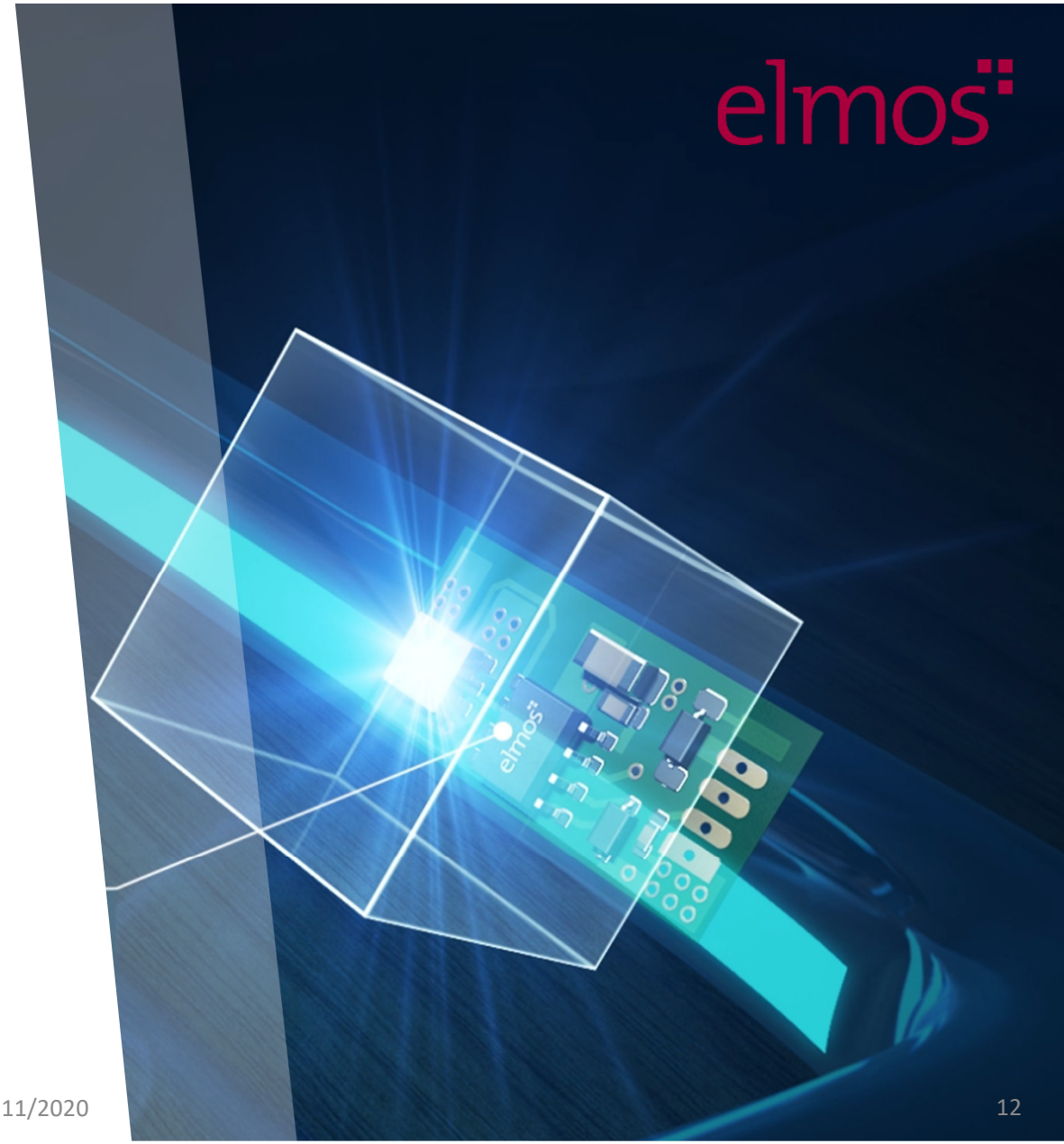
STANDALONE LED DRIVER FOR DYNAMIC LIGHT

E522.88

Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020

AGENDA

- Dynamic Ambient Light
  – Bus programmable 12-ch LED Driver
- Simplified technology
  – Multichannel Standalone LED Driver
- Elmos
  – Innovation matters



Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020

ELMOS KEY FIGURES

~5 **Elmos ICs**
on average in every new car

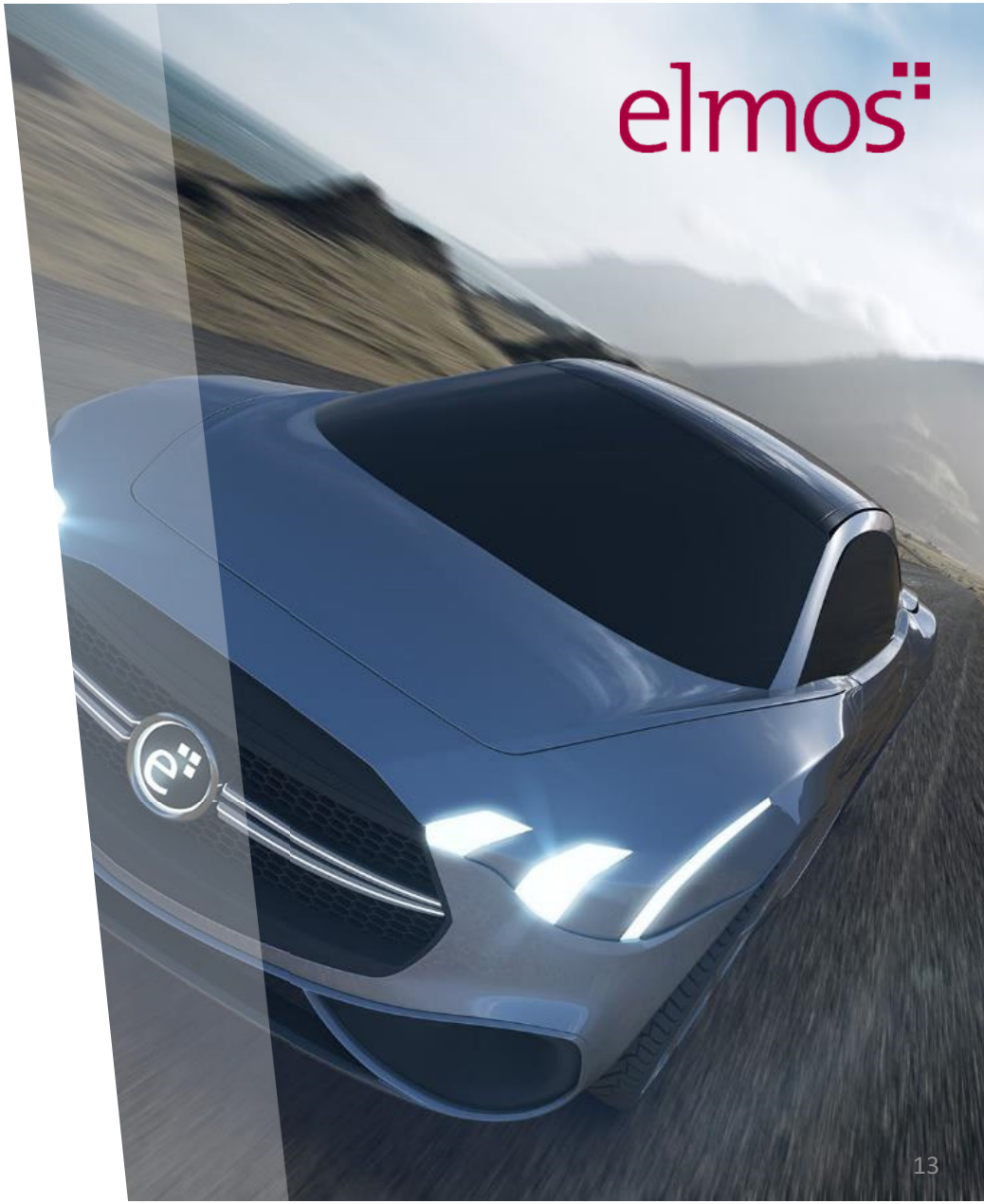
6 **product segments:** Ranging, Optical, Sensor ICs, Motor Control, Lighting, Safety & Power ICs

16 **locations worldwide,**
German roots with HQ located in Dortmund

295 **million EUR revenue**
in 2019

1984 **year of foundation;** long-term experience in analog mixed-signal semiconductor solutions

1,300 **employees**
thereof >350 product developers & engineers



Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020

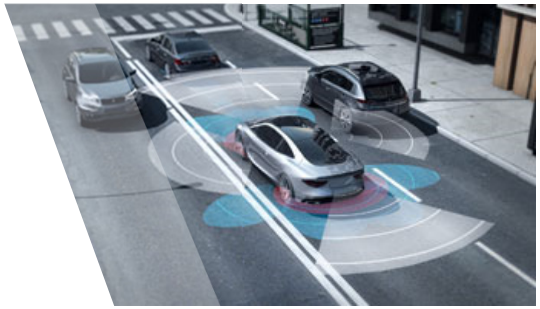
Elmos creates innovative IC products
to enable customer system functions to make mobility worldwide
safer, more sustainable and more enjoyable.

elmos

Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020

SETTING STANDARDS IN INNOVATIONS

SENSORS

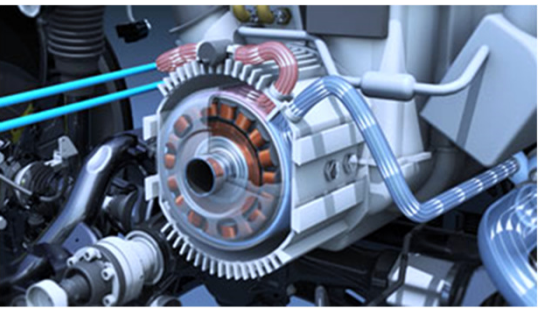


RANGING

SENSOR ICs

OPTICAL

SYSTEMS



MOTOR CONTROL

LIGHTING

SAFETY, POWER & CUSTOM ICs

Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020

OUR LEADING ICs – 2020

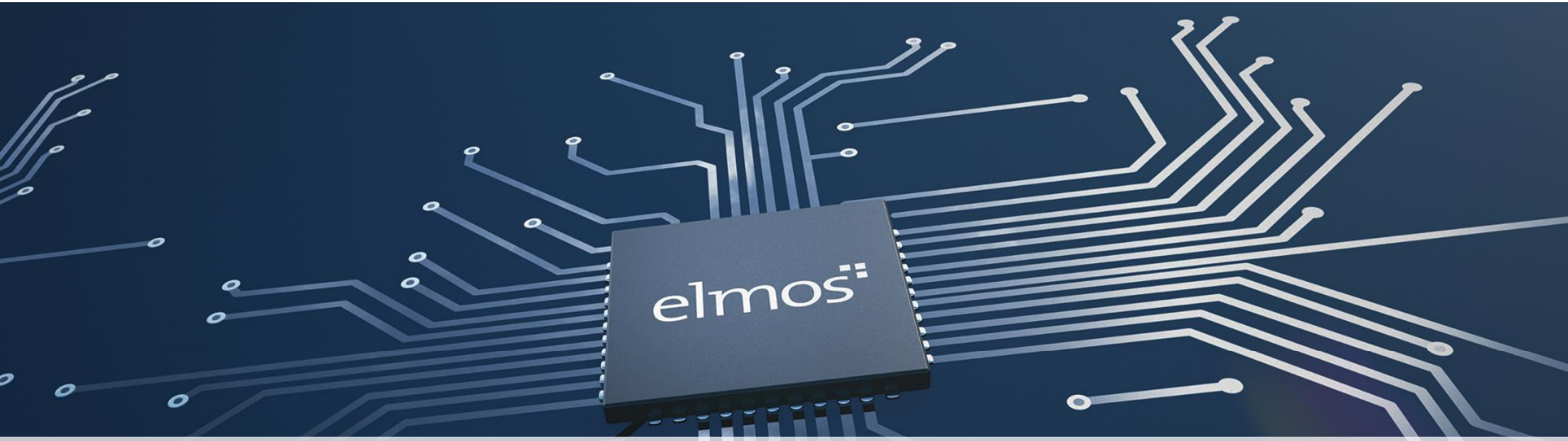
#1
WORLDWIDE

- Ultrasonic ranging
- Gesture recognition
- HVAC flaps
- Ambient Light
- *And soon* – Rear Light

Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020

THANK YOU

Copyright © 2020 Elmos Semiconductor SE. Shown at Rutronik Automotive Digital Forum 11/2020



DISCLAIMER

This presentation contains forward-looking statements based on beliefs of Elmos‘ management. Such statements reflect the company‘s current views with respect to future events and are subject to risks and uncertainties. Many factors could cause the actual results to be materially different, including, among others, changes in general economic and business conditions, changes in currency exchange rates and interest rates, introduction of competing products, lack of acceptance of new products or services and changes in business strategy. Actual results may vary materially from those projected here. Elmos does not intend or assume any obligation to update these forward-looking statements.

Elmos Semiconductor SE

Heinrich-Hertz-Str. 1 | 44227 Dortmund | Germany | Telephone: + 49 231 75 49 0 | info@elmos.com | www.elmos.com