PHOENIX

TECHNICAL MARKETING

ADAS Automotive Catalog

nexperia 5 YEARS

Main Office Tel +52 (33) 31 23 91 99
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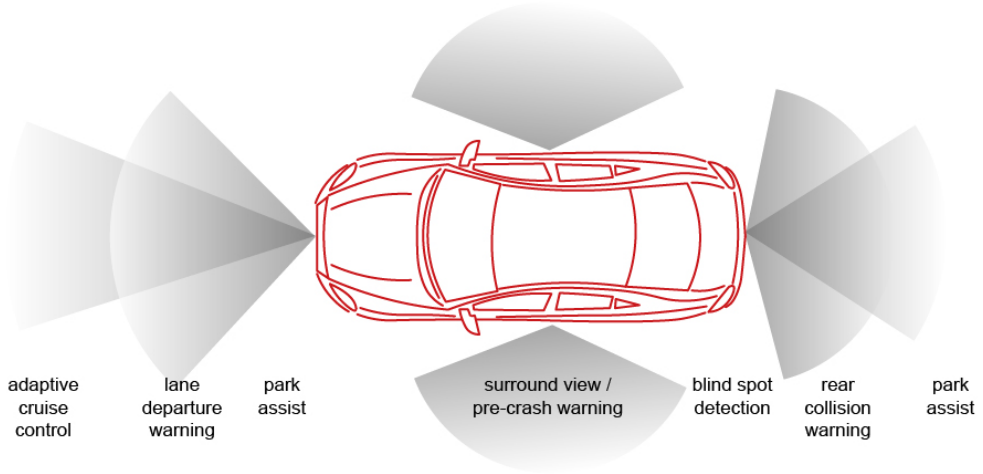
Advanced Driver Assistance Systems (ADAS)

Advanced Driver-Assistance Systems, also known as ADAS, are electronic systems that help with monitoring, warning, braking, and steering tasks in a vehicle. Existing at various levels, they can simply empower the driver by providing crucial information at the right time or effectively take full control of a vehicle system. Naturally for systems where automated control is required, such as steering or braking, these systems also need to be fully electronically controllable.



Advanced Driver Assistance Systems Applications

- **ADAS radar sensor module**
- In the last few years the innovation in Advanced Driver Assistance System (ADAS) radar sensor modules has been massive. ...
- Read more
- **In-Vehicle Network (CAN FD / LIN / FlexRay / Ethernet) protection**
- The car is an extremely interconnected system, with over 100 ECUs all attempting to communicate with other systems in the...
- Read more

Advanced Driver Assistance Systems Focus Products

- Automotive MOSFETs
- Automotive Transient Voltage Suppressors (TVS)
- LIN/CAN(FD)/FlexRay

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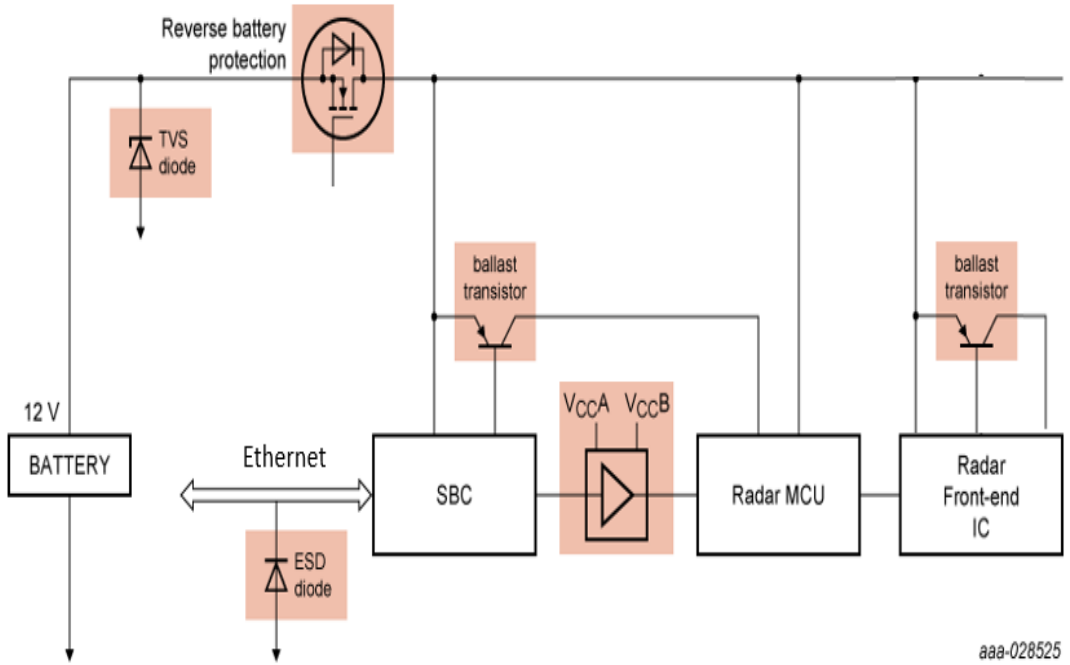
ADAS radar sensor module

In the last few years the innovation in Advanced Driver Assistance System (ADAS) radar sensor modules has been massive. We now have options for long, medium, short and ultra-short range sensing along with different radar frequencies and LIDAR. For full and advanced system warnings all these solutions are needed, with multiple sensors for each option multiplexed together for complete 360 degree coverage.



Products

- Reverse battery: LFPAK56(E) / LFPAK88, 40 V, > 100 A
- Ballast transistor: Low VCEsat transistors, ≤ 100 V
- ESD: Ethernet (100Mb / 1Gb) bus protection
- ESD: TVS, 400 W / 600 W
- Dual supply voltage translation: AVC, LVC
- MUX input: single-pole switches

Design considerations

- With various radar options and multiple sensors needed for full 360 degree sensing space is extremely limited
- Move to ‘postage stamp’ radar sensor modules to save overall system space
- Move to CFP and LFPAK packages for space saving, thermal efficiency and system robustness

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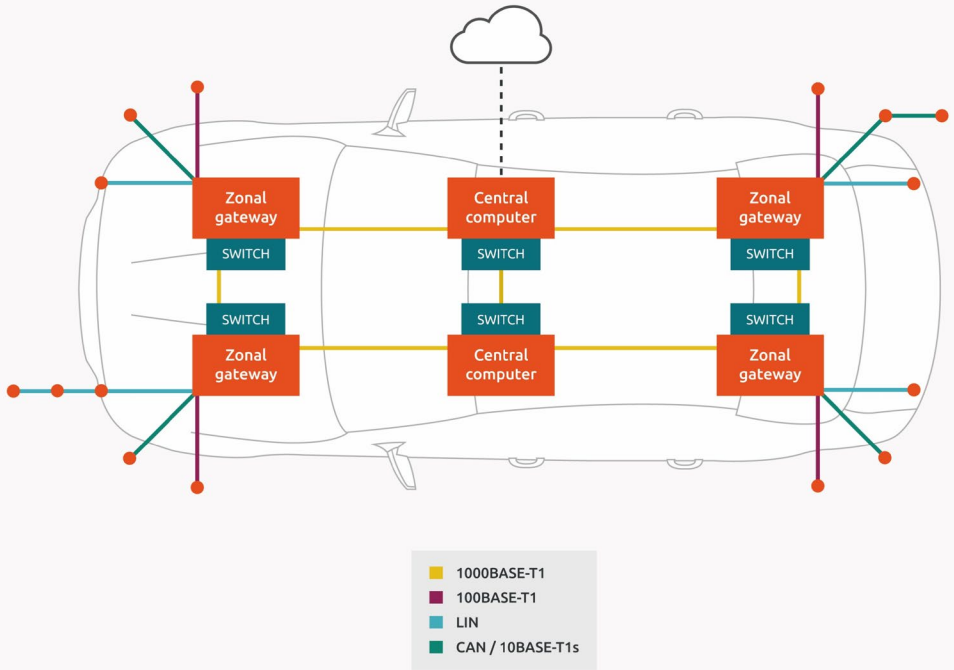
In-Vehicle Network (CAN FD / LIN / FlexRay / Ethernet) protection

The car is an extremely interconnected system, with over 100 ECUs all attempting to communicate with other systems in the car. To manage increased complexity and higher data rates as new versions of existing protocols find their way into vehicle networks (CAN FD, Ethernet), the classic flat wiring harness architecture is changing to a domain and zonal architecture with Automotive Ethernet as the backbone. Offering increased system robustness, our IVN bus line protection solutions are well suited to automotive bus protection without impeding signal integrity in this electrically noisy environment.



Products

- LIN / CAN(FD) / FlexRay
- Automotive ESD Ethernet

Design considerations

- High ESD robustness up to 30 kV and high surge currents up to 3.5 A (8/20µs)
- Excellent ESD clamping behavior
- Operate at a low capacitance avoiding any unwanted circuit disturbances
- Asymmetrical internal diode configuration, ensures optimized electromagnetic immunity