

# In-vehicle Network (IVN) ESD protection

Nexperia's new PESDxIVN series uses the latest generation of automotive qualified protection technology - the ideal and future-proof choice to safe-guard network transceivers.

## High-performance ESD protection

- › High ESD robustness up to 30 kV and high surge currents up to 3.5 A (8/20 $\mu$ s)
- › Excellent ESD clamping behavior
- › Low device capacitance
- › AEC-Q101 qualified

## Ready to meet a growing demand

- › As electronic content in cars grows, more and increasingly complex networking solutions are required
- › The PESDxIVN series is produced using Nexperia's high-capacity in-house manufacturing infrastructure



## Efficient & future-proof design

- › Easy drop-in replacements of legacy devices in SOT23, SOT323 and SOD323
- › The new silicon of PESDxIVN is ready for the next generation of automotive qualified leadless (DFN) packages

## Target applications

- ESD protection for In-vehicle networking lines in automotive environments
- › CAN, LIN, FlexRay, SENT



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EFFICIENCY WINS.

## LIN (Local Interconnected Network)

- › LIN controls systems such as driver assistance, automatic door locking or windows-lifters, is used for communication with miscellaneous smart sensors, for instance to detect rain.

Our devices feature an asymmetrical internal diode configuration, ensuring optimized electromagnetic immunity for the protected LIN ECU.

Part	Comment	Package	No. of channels	ESD robustness (IEC61000-4-2)	C <sub>D</sub> max	I <sub>PPM</sub> at tp = 8/20µs	V <sub>RWM</sub>	V <sub>CL</sub> (typ)
<b>PESD1IVN27-A</b>	New generation IVN ESD protection single line	SOD323	1 x bi	30 kV	17 pF	3A	27 V	36 V @ 3 A
<b>PESD1IVN27-U</b>	New generation IVN ESD protection single line	SOT323	1 x bi	30 kV	17 pF	3A	27 V	36 V @ 3 A
<b>PESD1IVN24-A</b>	New generation IVN ESD protection single line	SOD323	1 x bi	30 kV	17 pF	3.5A	24 V	33 V @ 3.5 A
PESD1LIN	Legacy type / Asymmetrical breakdown voltages	SOD323	1 x bi	23 kV	17 pF	3A	15/24 V	40 V @ 1 A

## CAN (Controller Area Network)

- › CAN bus systems are also used for driver assistance, along with body control modules like antilock braking system (ABS), engine management system or power control.

Our devices protect two automotive CAN bus lines, and they can be used with highspeed and fault-tolerant CAN buses.

Part	Comment	Package	No. of channels	ESD robustness (IEC61000-4-2)	C <sub>D</sub> max	I <sub>PPM</sub> at tp = 8/20µs	V <sub>RWM</sub>	V <sub>CL</sub> (typ)
<b>PESD2IVN24-T</b>	New generation IVN ESD protection dual line	SOT23	2 x bi	30 kV	17 pF	3.5A	24 V	33 V @ 3.5 A
<b>PESD2IVN24-U</b>	New generation IVN ESD protection dual line	SOT323	2 x bi	30 kV	17 pF	3.5A	24 V	33 V @ 3.5 A
<b>PESD2IVN27-U</b>	New generation IVN ESD protection dual line / Higher V <sub>RWM</sub>	SOT323	2 x bi	30 kV	17 pF	3A	27 V	36 V @ 3 A
PESD1CAN	Legacy type	SOT23	2 x bi	23 kV	17 pF	3A	24 V	70 V @ 3 A
PESD2CAN	Legacy type	SOT23	2 x bi	30 kV	30 pF	5A	24 V	41 V @ 5 A

## FlexRay

- › FlexRay can be applied in electronic systems where safety is paramount, for instance Drive-by-Wire.

Our devices support the FlexRay data rate of 10 Mbit/s. In addition they provide a surge capability of up to 200 W per line for an 8/20 µs pulse.

Part	Comment	Package	No. of channels	ESD robustness (IEC61000-4-2)	C <sub>D</sub> max	I <sub>PPM</sub> at tp = 8/20µs	V <sub>RWM</sub>	V <sub>CL</sub> (typ)
<b>PESD2IVN24-T</b>	New generation IVN ESD protection dual line	SOT23	2 x bi	30 kV	17 pF	3.5A	24 V	33 V @ 3.5 A
<b>PESD2IVN24-U</b>	New generation IVN ESD protection dual line	SOT323	2 x bi	30 kV	17 pF	3.5A	24 V	33 V @ 3.5 A
<b>PESD2IVN27-U</b>	New generation IVN ESD protection dual line / Higher V <sub>RWM</sub>	SOT323	2 x bi	30 kV	17 pF	3A	27 V	36 V @ 3 A
PESD1FLEX	Legacy type	SOT23	2 x bi	23 kV	17 pF	3A	24 V	40 V @ 1 A

\*new types are bold; recommended for new design-in

Find out more at [www.nexperia.com](http://www.nexperia.com)

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