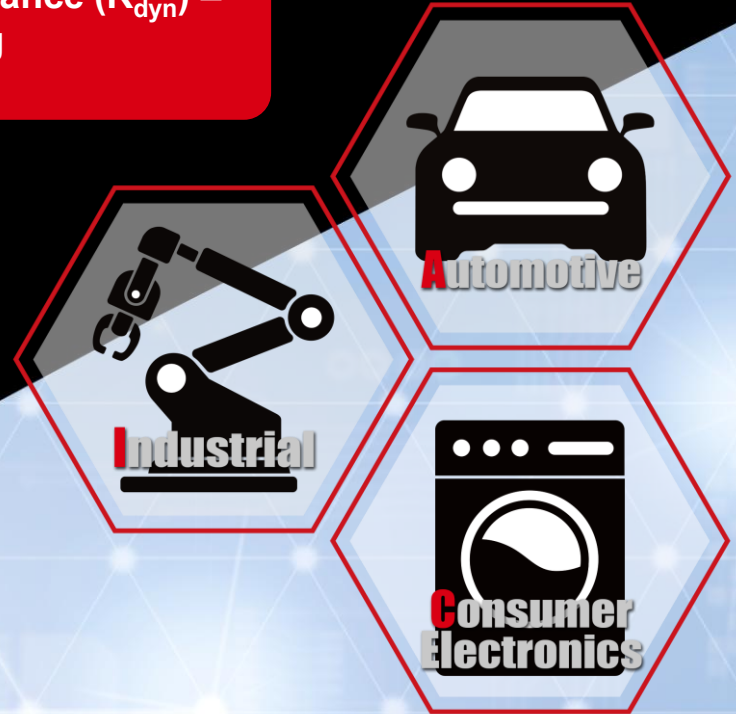


Combines ultra-low capacitance with low dynamic resistance (R_{dyn}) – maximizing IC protection performance while maintaining communication signal integrity

ESD Protection Diodes for High-Speed Interfaces

RESDxVx series



The RESDxVx series of ESD protection diodes for high-speed communication applications combines ultra-low capacitance with low dynamic resistance. This provides high IC protection performance while minimizing signal interference, even in Gbps-class high-speed interfaces used in consumer, automotive, and industrial equipment applications.

Features

- **Ultra-low capacitance minimizes signal degradation, enabling high-speed signal transmission along with robust IC protection**
Achieves ultra-low capacitance in the 0.2pF range required by high-speed interface standards
- **Low dynamic resistance (R_{dyn}) ensures superior clamping performance, delivering industry-leading protection**
Improves clamping performance by reducing R_{dyn} (0.3 Ω or less), which typically trades off with low capacitance
- **Ideal for a wide range of markets, from automotive equipment to consumer and industrial devices**
Available in two package types for broad applicability

*ROHM March 2026 study

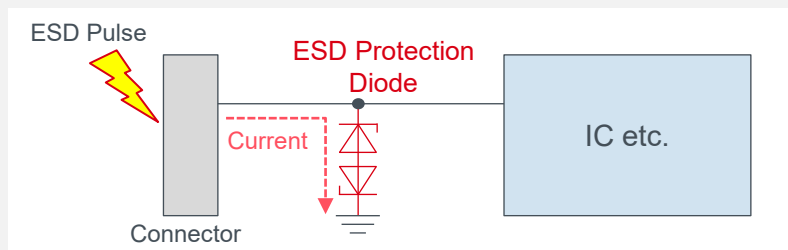
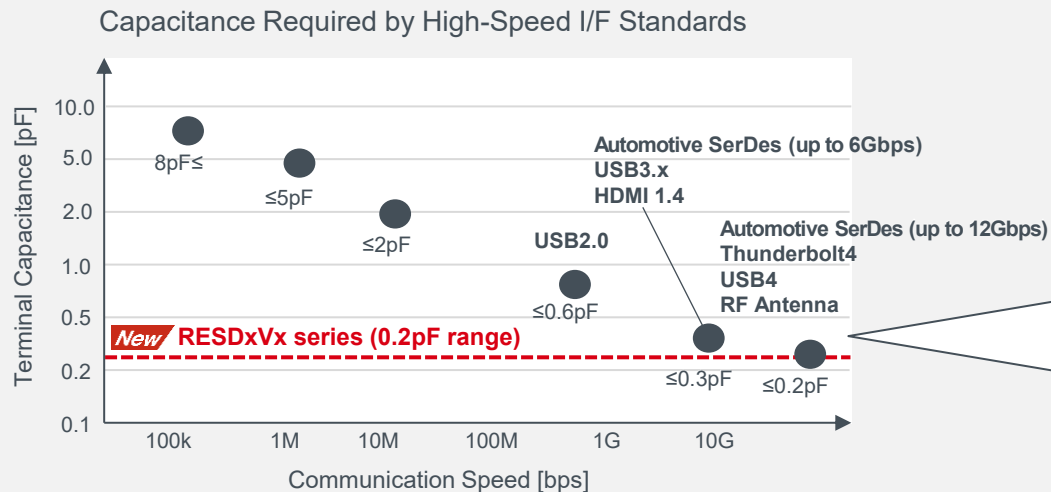


RESDxVxxxED
DSN0603-2J
0.6×0.3×Max0.3mm



RESDxVxxASA
DFN1006-2W (Wettable Flank)
1.0×0.6×Max0.4mm

Delivers Ultra-Low 0.2pF-Class Capacitance Demanded by High-Speed I/F



Eye Diagram (20Gbps)

Without ESD Protection Diode

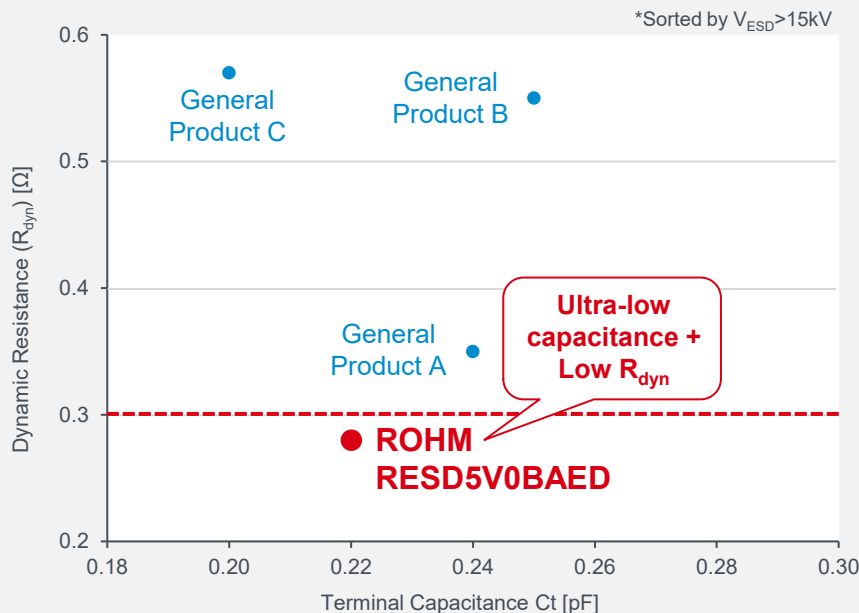
With RESDxVxBAED

No signal degradation even at high speeds

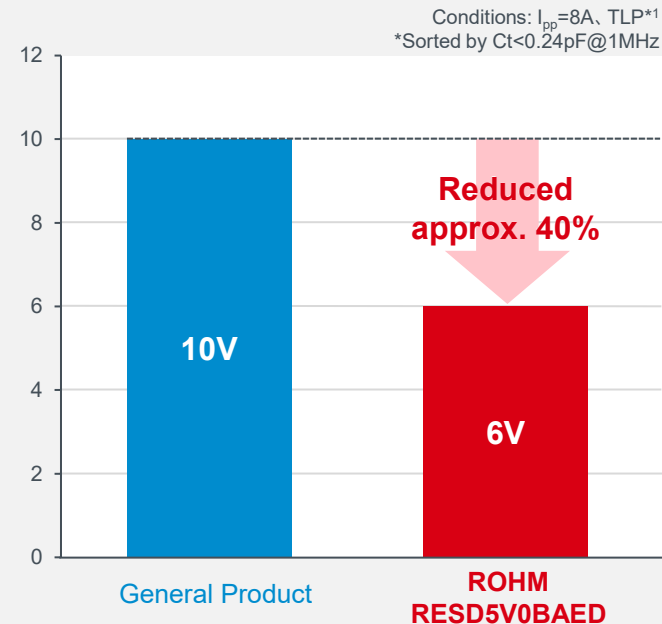
Ultra-low capacitance ensures reliable IC protection while preserving signal quality in high-speed communication environments

Lower Dynamic Resistance ($\leq 0.3\Omega$) Improves Clamping Performance

Comparison of Dynamic Resistance (R_{dyn}) vs Terminal Capacitance



















Clamping Voltage Comparison





Reduces dynamic resistance—typically traded off against low capacitance—to deliver industry-leading IC protection performance

*1 TLP (Transmission Line Pulse) $t_p = 100$ ns; square pulse

RESDxVx series Lineup and Key Specifications

Part No.	Absolute Max Ratings (Ta=25°C)			Electrical Characteristics (Ta=25°C)					Polarity	Automotive-Grade AEC-Q101	Package [mm]
	Peak Pulse Current I _{PPM} [A]	ESD Tolerance V _{ESD Air} (Max)[kV]	Junction Temp. T _J (Max)[C]	Standoff Voltage V _{RWM} (Max)[V]	Breakdown Voltage V _{BR} (Typ)[V]	Dynamic Resistance R _{dyn} (Typ) (I _{pp} =10A, TLP*1)[Ω]	Terminal Capacitance C _t (Typ) (f=1MHz)[pF]	Clamp Voltage V _{CL} (Typ) (I _{pp} =8A, TLP*1)[V]			
New RESD3V3BAED  	±6	±15	150	3.3	±9.0	0.28	0.22	±6.0	Bidirectional	—	
New RESD5V0BAED  				5.0						—	
☆ RESD3V3UAED	6	±15	150	3.3	8.3	0.15	0.48	3.0	Unidirectional	—	
☆ RESD5V0UAED				5.0						—	
☆ RESD3V3BCED	±6	±14	150	3.3	±7.0	0.36	0.28	±6.5	Bidirectional	—	
☆ RESD3V6BCED				3.6						—	
New RESD3V3UCED  	6	±14	150	3.3	6.3	0.17	0.55	2.9	Unidirectional	—	
New RESD3V6UCED  				3.6						—	
New RESD3V3BASAFH  	±6	±15	150	3.3	±9.0	0.30	0.24	±7.0	Bidirectional	YES	
New RESD5V0BASAFH  				5.0						YES	
New RESD3V3UASAFH  	6	±15	150	3.3	8.0	0.25	0.48	4.0	Unidirectional	YES	
New RESD5V0UASAFH  				5.0						YES	

Click on the  icon to access the product page and the  icon to view the datasheet on ROHM's website.

*1 TLP (Transmission Line Pulse) t_p = 100 ns; square pulse ☆ Under Development

Consumer Products,
Industrial Equipment



Consumer Devices

Gaming Systems, Smartphones,
Laptops, Wireless Earphones,
AV/VR Glasses, etc.



Industrial Equipment

AI Servers, Data Centers,
Routers, 5G/6G Communication Base Stations,
FA Cameras, etc.



Automotive Systems

Surround-View Cameras, ADAS/AD
Cameras, Rear-View Cameras, In-Vehicle
Infotainment Systems, Body Control ECUs,
Head Units, and the like



Consumer Products, Industrial
Equipment, Automotive Applications



Provides IC protection for high-speed communication in automotive, industrial, and consumer applications

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