Featured Products

Electronics for the Future

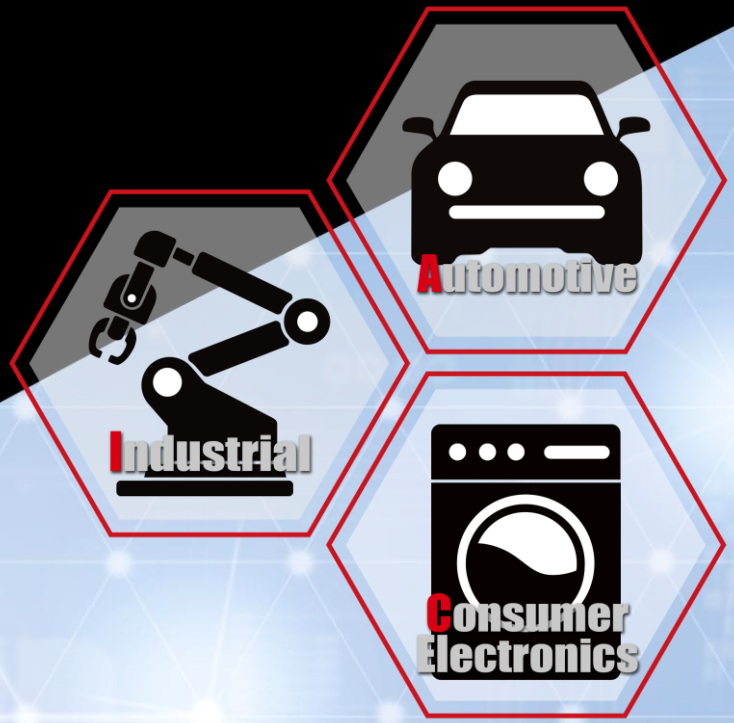
ROHM SEMICONDUCTOR

Achieves class-leading* low V_F performance in low voltage applications

*ROHM Sept. 2025 study

Ultra-Low V_F, Low I_R Schottky Barrier Diode

RBE01VYM6AFH



Overview: Ultra-Low V_F, Low I_R Schottky Barrier Diode (SBD)

The RBE01VYM6AFH is an SBD optimized for low-voltage operation, achieving both ultra-low V_F and low I_R - characteristics typically in a trade-off relationship. This makes it suitable for a broad spectrum of applications, from photovoltaic protection in automotive ADAS cameras to rectification in consumer electronics.

Features

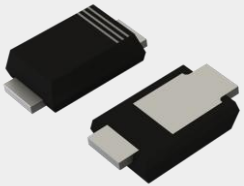
- **Protects against photovoltaic voltage during power OFF, safeguarding high-resolution cameras from damage and degradation, improving reliability**

  AEC-Q101 qualified, delivering the stringent performance required for photovoltaic voltage countermeasures in ADAS* cameras
  Market requirements: Forward voltage V_F<300mV @ Forward current I_F=7.5mA, T_a=−40°C
  Reverse current I_R<20mA @ Reverse voltage V_R=3V, T_a=125°C

- **Specialized low-voltage, low-power operation ensures suitability for a broad range of applications, from automotive to consumer electronics**

  Absolute Max Rating: V_R=6V
  Ultra-low V_F: 175mV @ I_F=7.5mA, T_a=25°C
  Low I_R: 15μA @ V_R=3V, T_a=25°C

*Advanced Driver Assistance Systems

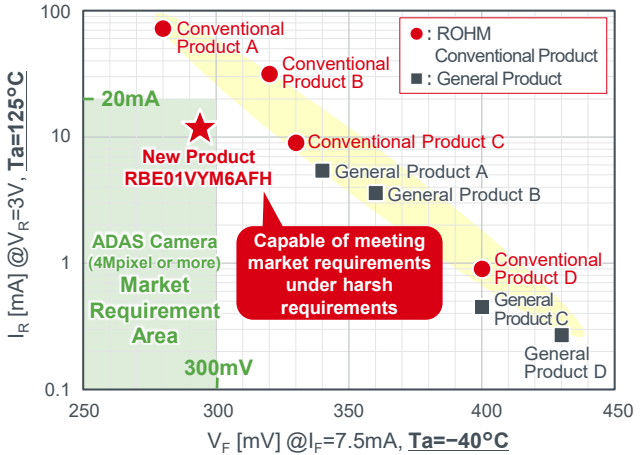


SOD-323HE
(TUMD2M)
2.5×1.4×0.6mm

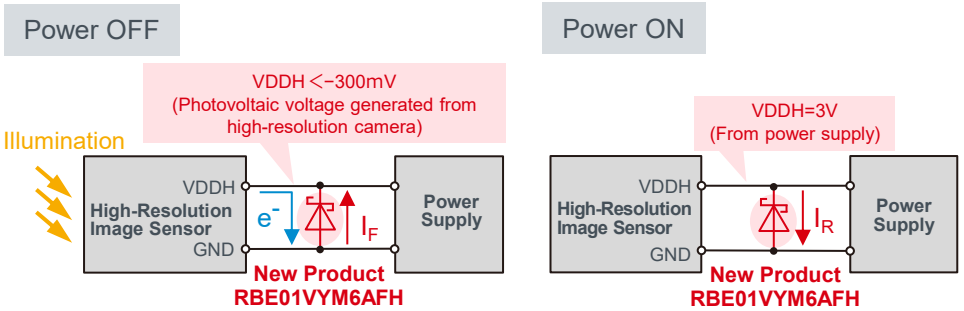
Packages in parentheses ( ) denote ROHM's package type.

Improves Reliability by Protecting High-Resolution Cameras from Damage due to Photovoltaic Voltage During Power OFF

V_F vs I_R Comparison Under Harsh Environments



Application Example of ROHM's New SBD in ADAS High-Resolution Cameras (for Protection)



V_F < 300mV maintained at low temperatures that typically degrade V_F characteristics, enabling protection of high-resolution cameras

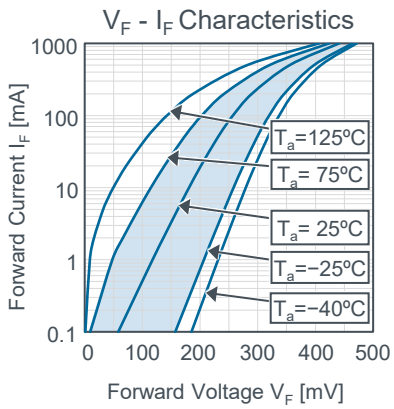
I_R < 20mA maintained at high temperatures where I_R characteristics typically degrade, suppressing thermal runaway of the SBD

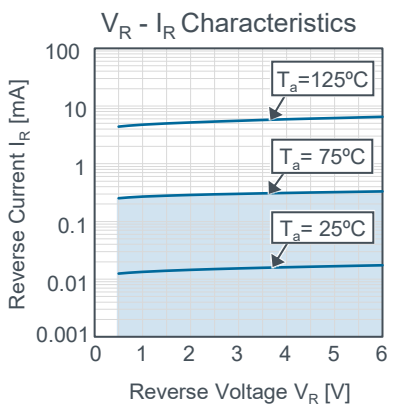
Ultra-low V_F maintains protection voltage at low temperatures, while low I_R suppresses thermal runaway caused by reverse leakage current at high temperatures

Low-Voltage, Low-Power Design Ensures Suitability for Applications Ranging from Automotive to Consumer Electronics

Key Characteristics Curves

: Characteristics range at operating temperatures typical of consumer products





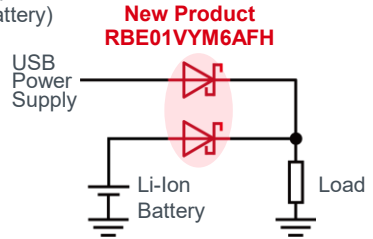
Delivers excellent V_F and I_R performance across the operating temperature range of typical consumer applications

Application Examples of ROHM's New SBD in the Low Voltage Range (for Rectification)

- Low-cost power supply switching applications (ORing control between USB and battery)

Smartwatches

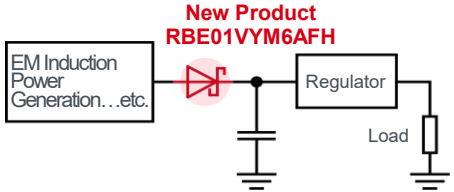
Wireless Earphones



- Low-loss rectification applications (energy harvesting)

Self-Powered Switches

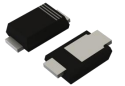
Security Tags



Ultra-low V_F reduces application power loss

Provides superior performance in low-voltage rectification applications

Ultra-Low V_F, Low I_R Schottky Barrier Diode [RBE01VYM6AFH]: Key Specifications

Part No.	Absolute Max Ratings (T_c=25°C, unless otherwise specified)					Electrical Characteristics (T_j=25°C)		Automotive-Grade AEC-Q101	Package [mm]
	V_{RM} [V]	V_R [V]	I_O [A] 60Hz Tc=120°C	I_{FSM} [A] 60Hz 1 Cycle	T_j (Max) [°C]	V_F (Max) [mV] @ I_F=7.5mA	I_R (Max) [μA] @V_R=3V		
New RBE01VYM6AFH	6	6	0.1	1	125	200	30	YES	 SOD-323HE (TUMD2M) 2.5×1.4×0.6

Click on the icon to access the product page and the PDF icon to view the datasheet on ROHM's website.
Package notation in parenthesis ( ) denotes the ROHM package type.

Application Examples

[Protection]

- Vehicle cameras
- Surveillance cameras
- Drones, etc.

Protects high-resolution cameras

[Rectification]

- Smartwatches
- Wireless earphones
- Security tags, etc.

Contributes to lower loss

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