Featured Products

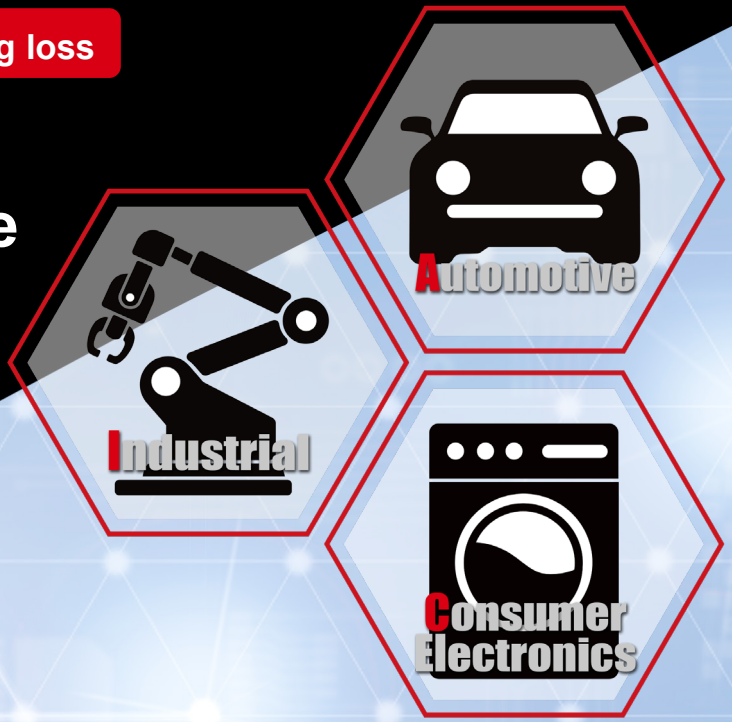
Electronics for the Future

ROHM SEMICONDUCTOR

Class-leading* trr (reverse recovery time) minimizes switching loss

100V Withstand High Performance Schottky Barrier Diodes

YQ series



*Comparison of trench MOS products: ROHM December 2023 study

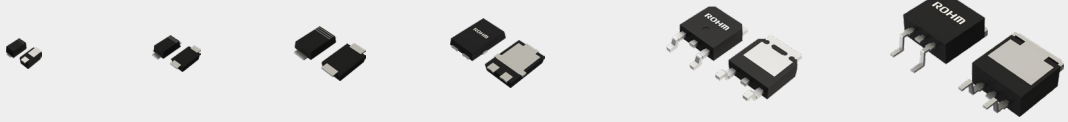
Overview of 100V Withstand High Performance Schottky Barrier Diodes

The YQ series of Schottky barrier diodes adopt an original trench MOS structure that reduces both V_F and I_R compared with conventional planar-type products. This minimizes switching loss along with the risk of thermal runaway, contributing to lower application power consumption.

Features

- **Proprietary trench MOS structure improves V_F and I_R (vs conventional products)**
  Reduces power loss and the risk of thermal runaway when used in rectification applications
- **Class-leading* trr minimizes switching loss**
  Contributes to lower application power consumption
- **Broad package lineup**
  Select the ideal form factor that meets set requirements

*Comparison of trench MOS products: ROHM December 2023 study

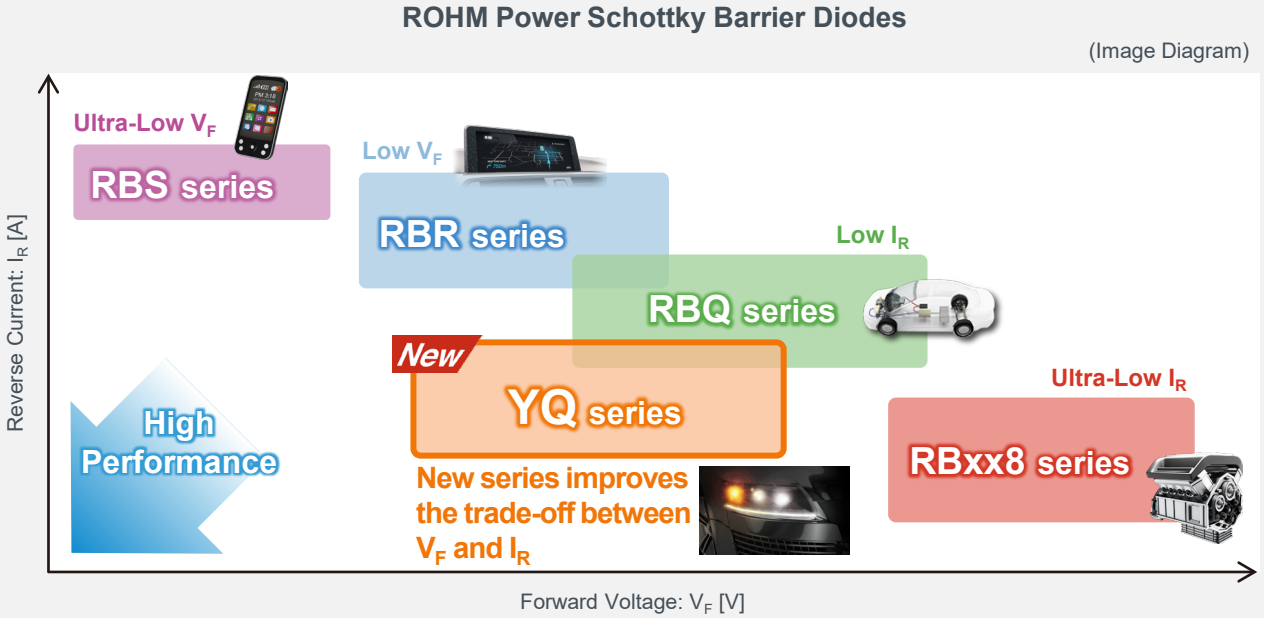


(PMDE)	SOD-123FL (PMDU)	SOD-128 (PMDTM)	TO-277A (TO-277GE)	TO-252AA D-PAK (TO-252M/TO-252GE)	TO-263AB D2PAK (TO-263L)
2513 [1005]	3516 [1408]	4725 [1910]	6546 [2618]	10066 [3926]	151101 [5940]

unit: mm [inch]

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

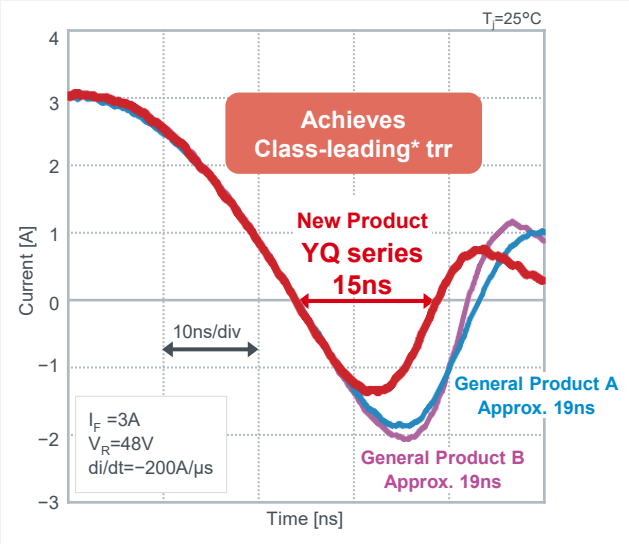
Reduces Risk by Improving V_F and I_R



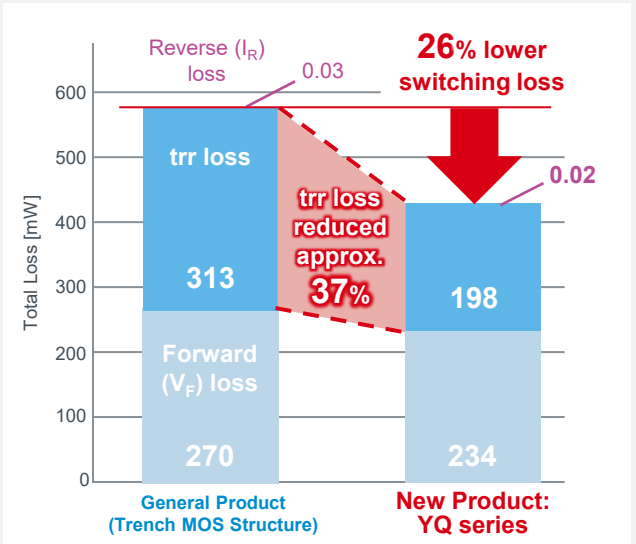
The YQ series utilizes a trench MOS structure to improve both V_F and I_R, reducing power loss as well the risk of thermal runaway

High-Speed trr Characteristics Minimize Loss

trr Waveforms under Inductive (L) Load



Switching Loss Comparison
(Measured on an LED Headlamp Evaluation Board)



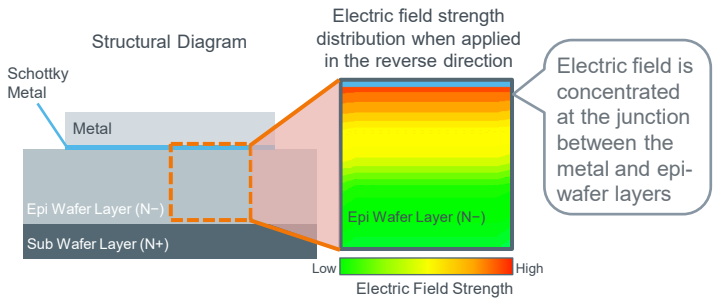
Class-leading* trr characteristics minimize switching losses, contributing to lower application power consumption

*Comparison of trench MOS products: ROHM December 2023 study

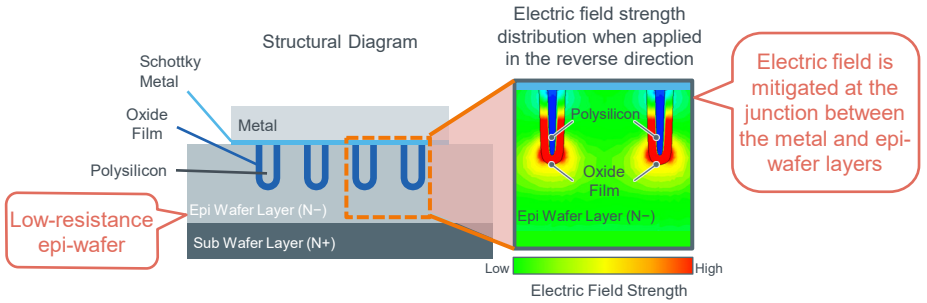
Structural Diagrams and Applications

Trench MOS Structure

Planar Structure



Trench MOS Structure



Simultaneously achieves low V_F and I_R

Application Examples

- Automotive LED Headlamps
- xEV DC-DC converters
- Industrial equipment power supplies
- Lighting, etc.

Trench MOS Type Schottky Barrier Diodes: YQ series

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

Product Number		Absolute Maximum Ratings			Electrical Characteristics (T_j=25°C)				Circuit	Package
Standard Grade	Automotive Grade (AEC-Q101 Qualified)	V_{RM} [V]	I_O [A]	T_j [°C]	V_F (Max) [V]	I_F [A]	I_R (Max) [μA]	V_R [V]		
New YQ1VWM10ATR	New YQ1VWM10ATFTR	100	1	175	0.70	1	6	100	Single	(PMDE)
New YQ2VWM10BTR	New YQ2VWM10BTFTR	100	2	175	0.77	2	10	100		
New YQ2MM10ATR	New YQ2MM10ATFTR	100	2	175	0.77	2	10	100		SOD-123FL (PMDU)
New YQ3MM10BTR	New YQ3MM10BTFTR	100	3	175	0.77	3	15	100		
New YQ2LAM10BTR	New YQ2LAM10BTFTR	100	2	175	0.67	2	15	100		SOD-128 (PMDTM)
New YQ3LAM10DTR	New YQ3LAM10DTFTR	100	3	175	0.64	3	30	100		
New YQ5LAM10CTR	New YQ5LAM10CTFTR	100	5	175	0.77	5	25	100		
New YQ5LAM10DTR	New YQ5LAM10DTFTR	100	5	175	0.73	5	30	100		
New YQ5LAM10ETR	New YQ5LAM10ETFTR	100	5	175	0.61	5	50	100		
New YQ3RSM10SDTL1	New YQ3RSM10SDTFTL1*	100	3	175	0.64	3	30	100		TO-277A (TO-277GE)
New YQ5RSM10SDTL1	New YQ5RSM10SDTFTL1*	100	5	175	0.77	5	25	100		
New YQ8RSM10SDTL1	New YQ8RSM10SDTFTL1*	100	8	175	0.67	8	60	100		
New YQ10RSM10SDTL1	New YQ10RSM10SDTFTL1*	100	10	175	0.67	10	80	100		
New YQ12RSM10SDTL1	New YQ12RSM10SDTFTL1*	100	12	175	0.67	12	90	100		
New YQ15RSM10SDTL1	New YQ15RSM10SDTFTL1*	100	15	175	0.68	15	100	100		
New YQ20BGE10SDTL	—	100	20	150	0.86	20	80	100		TO-252AA (TO-252GE)
—	New YQ20BM10SDFHTL	100	20	150	0.86	20	80	100		TO-252AA (TO-252M)
☆YQ20NL10SDTL	☆YQ20NL10SDFHTL	100	20	150	0.96	20	70	100		TO-263AB (TO-263L)
New YQ20NL10SETL	New YQ20NL10SEFHTL	100	20	150	0.86	20	80	100		
☆YQ30NL10SDTL	☆YQ30NL10SDFHTL	100	30	150	0.99	30	95	100		
New YQ30NL10SETL	New YQ30NL10SEFHTL	100	30	150	0.86	30	150	100		
New YQ20NL10CDTL	New YQ20NL10CDFHTL	100	20	150	0.71	10	70	100	Cathode common dual	
☆YQ30NL10CDTL	☆YQ30NL10CDFHTL	100	30	150	0.72	15	100	100		
☆YQ40NL10CDTL	☆YQ40NL10CDFHTL	100	40	150	0.72	20	160	100		
☆YQ60NL10CDTL	☆YQ60NL10CDFHTL	100	60	150	0.77	30	200	100		

Packages in parentheses ( ) denote ROHM's package type. *The TO-277A (TO-277GE) package of automotive-grade products are rated for car infotainment and body systems. ☆Under Development

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