

2010

Product Catalog



Discrete Semiconductors

Fast Recovery Diodes Rectifier Diodes



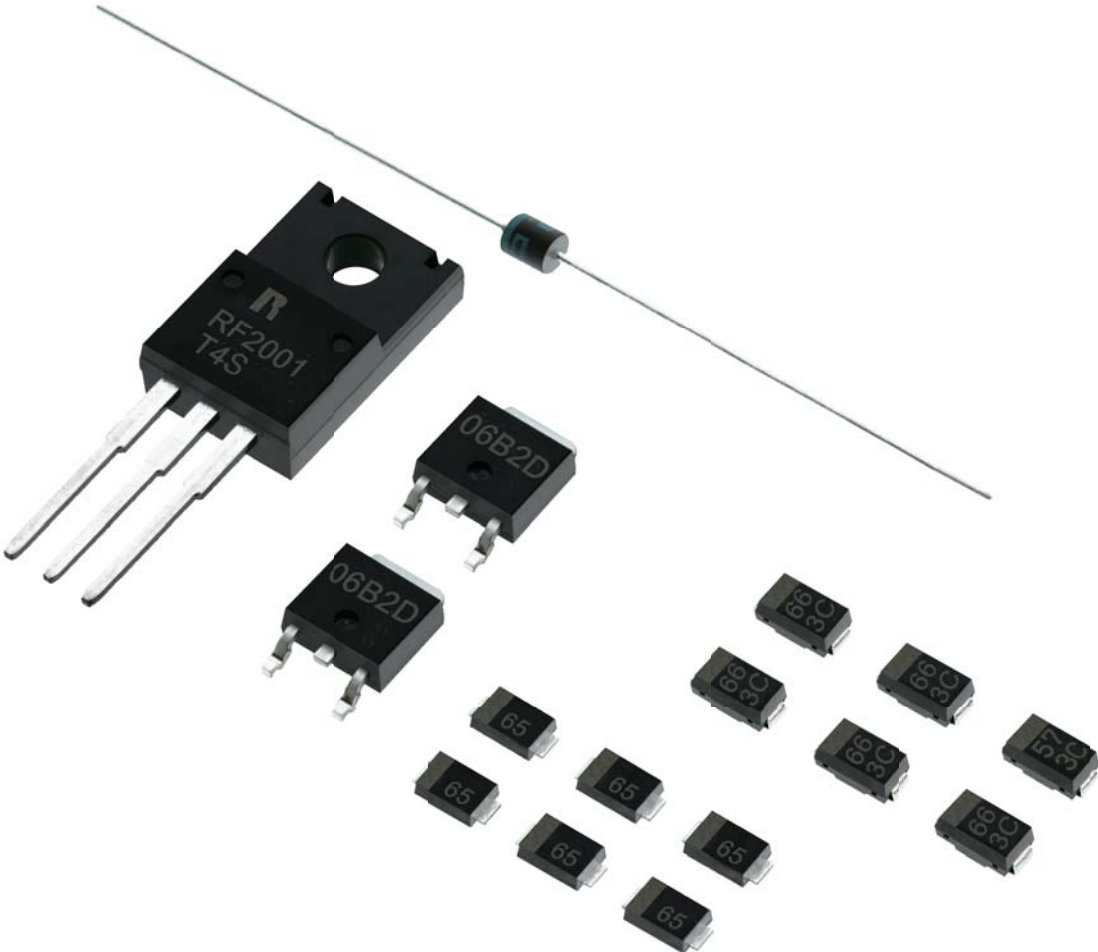
ROHM Co.,Ltd.

Fast Recovery Diodes

ROHM's RF series utilizes a unique process for the highest recovery characteristics in the industry. The novel design, which emphasizes low loss and high reliability, has been well received in the market, resulting in the number one share in the PDP (Plasma Display Panels) sector.

Rectifier Diodes

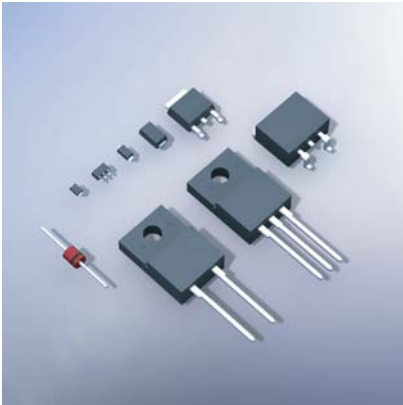
ROHM offers the high reliability RR series of rectifier diodes, featuring among the industry's highest class surge resistances for automotive use. The diodes are also ideally suited for strobe applications requiring high surge resistance due to their compact size. The 1SR series, by far the most popular rectifier diodes in the industrial, commercial, automotive sectors, is available in a standard version and a high speed rectification surface mount type.



Contents

Fast Recovery Diodes	3
RF Series	
Rectifier Diodes	4
RR Series	
Lineup	5, 6
Dimensions	6

Fast Recovery Diodes



RF Series

Summary

These high voltage resistance diodes, ideal for use in switching power supplies of all types, feature among the fastest switching speeds in the industry along with low V_f for improved efficiency and reduced loss.

Features

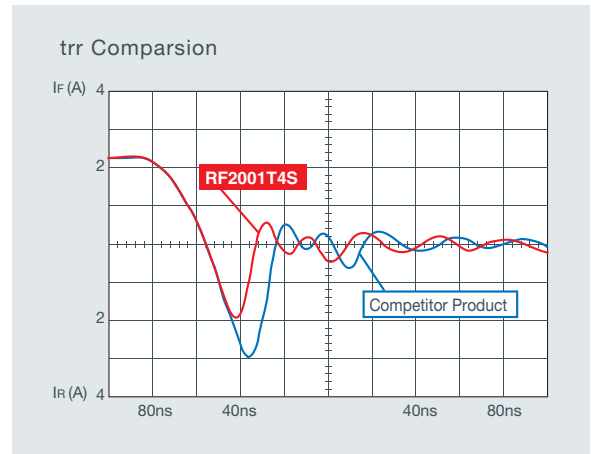
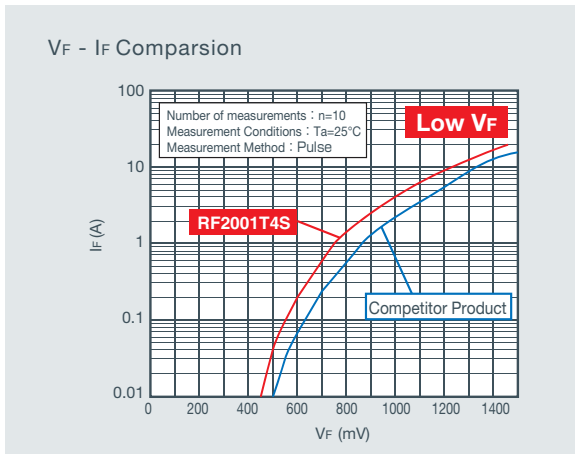
- High-speed operation
- High performance

Applications

- Switching power supplies
- PDPs (sustain circuits)
- PFC circuits

Low V_f and ultra-high switching speed

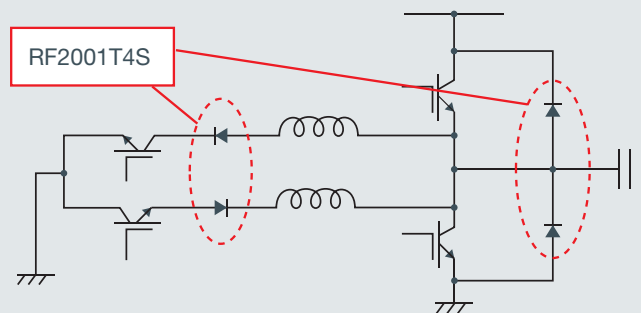
Generally V_f (forward voltage) increases with t_{rr} (reverse recovery time). However, optimization of device conditions has resulted in high t_{rr} with low V_f .



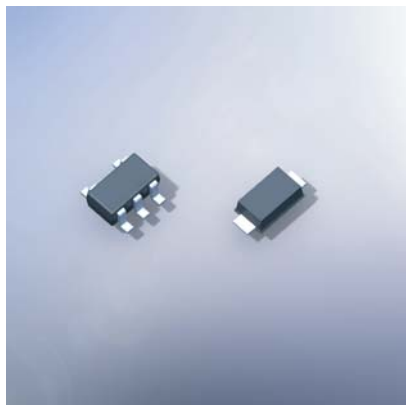
Circuit Example

PDP Sustain Power Recovery Circuit (Resonance Circuit)

ROHM commands the largest market share in the field of fast recovery diodes for use in resonators for PDPs. Discharge current can be recovered at $T_j = 100^\circ\text{C}$ with high efficiency at 60A-500ns, and the high reliability design can easily resist steep current surges in the 100A range. A diverse lineup is offered, including 3A- to 10A-class FRDs for ring currents designed to be connected anti-parallel to IGBTs.



Rectifier Diodes



RR Series

Summary

These rectifier diodes feature outstanding surge resistance.

Features

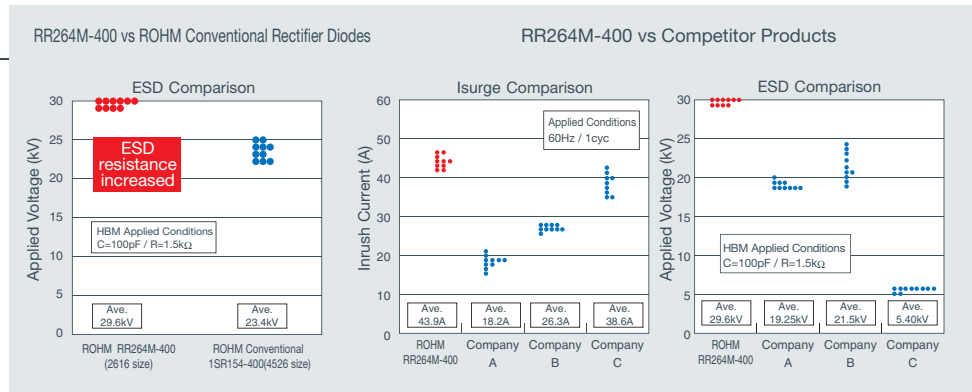
- High surge resistance

Applications

- Circuits susceptible to overcurrent and overvoltage surge conditions.

Superior surge characteristics

Optimization of device structures has resulted in significantly improved ESD resistance - approximately 25% greater than conventional products.



Saves space

The trend towards increasingly sophisticated automobiles heightens demand for surge absorption rectifier diodes.

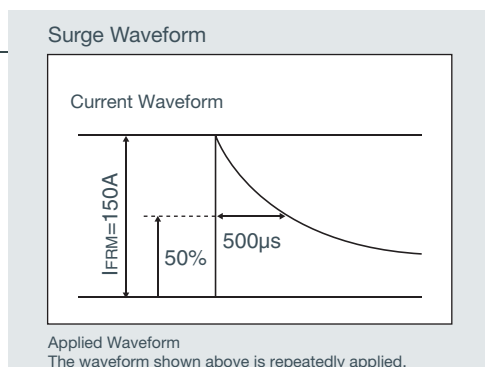
ROHM offers the RR264M-400 series rectifier diodes along with the RR274EA-400 line that integrates two elements in a single package.

Package		RR264M-400	RR274EA-400
Dimensions (Unit:mm)			
		Mounting area reduced approximately 30%	
I_o		0.7A	0.5A
V_{RM}		400V	400V
ESD	C=100pF, R=1.5k Ω	29kV	Over 30kV
	C=200pF, R=0 Ω	6kV	8kV

Robust against repeated surges

Every time a camera strobe flashes excessive voltage and current are generated, placing the brunt of the load on the circuit.

The RR255M-400, offered for the first time in a 2616-sized package, clears the 150A-level I_{FRM} required for strobes.



Fast Recovery / Rectifier Diode Lineup

Fast Recovery Diodes

Product No.		Absolute Maximum Ratings (Ta=25°C)*1				Electrical Characteristics (Ta=25°C)*1							Package	Equivalent Circuit Diagram
Part No.	Taping Code	V _{RM} (V)	V _R (V)	I _O *2 (A)	I _{FSM} (A) 60Hz.1~	V _F (V) Max.	I _F (A)	I _R (μA) Max.	V _R (V)	t _{rr} (ns) Max.	I _F (A)	I _R (A)		
New RF05VA1S	TR	100	100	0.5	6	0.98	0.5	10	100	25	0.5	1	TUMD2	
RF05VA2S	TR	200	200	0.5	6	0.98	0.5	10	200	25	0.5	1	TUMD2	
RF04UA2D	TR	200	200	0.4	1	0.98	0.4	10	200	25	0.5	1	TSM6	
RF071M2S	TR	200	200	0.7	15	0.85	0.7	10	200	25	0.5	1	PMDU	
RF081M2S	TR	200	200	0.8	20	0.95	0.8	10	200	25	0.5	1	PMDU	
RF081L2S	TE25	200	200	1.1	25	0.98	1.1	10	200	25	0.5	1	PMDS	
RF101L2S	TE25	200	200	1	20	0.87	1	10	200	25	0.5	1	PMDS	
RF201L2S	TE25	200	200	2	20	0.87	2	10	200	25	0.5	1	PMDS	
New RF071L4S	TE25	400	400	0.7	15	1.25	0.7	10	400	25	0.5	1	PMDS	
RF101L4S	TE25	400	400	1	25	1.25	1	10	400	25	0.5	1	PMDS	
RF08L6S	TE25	600	600	0.8	20	1.3	0.8	10	600	70	0.5	1	PMDS	
RF2L6S	TE25	600	600	1.5	40	1.55	1.5	10	600	35	0.5	1	PMDS	
RF301B2S	TL	200	200	3	40	0.93	3	10	200	25	0.5	1	CPD (D-Pack)	
RF501B2S	TL	200	200	5	40	0.92	5	10	200	25	0.5	1	CPD (D-Pack)	
RF601B2D	TL	200	200	6	40	0.93	6	10	200	25	0.5	1	CPD (D-Pack)	
New RF305B6S	TL	600	600	3	50	1.7	3	10	600	30	0.5	1	CPD (D-Pack)	
RF505B6S	TL	600	600	5	50	1.7	5	10	600	30	0.5	1	CPD (D-Pack)	
New RF1501NS3S	TL	350	300	20	100	1.5	20	10	300	30	0.5	1	LPDS (D2-Pack)	
New RF2001NS3D	TL	350	300	20	100	1.3	20	10	300	25	0.5	1	LPDS (D2-Pack)	
New RFUS20NS4S	TL	430	430	20	100	1.6	20	10	430	35	0.5	1	LPDS (D2-Pack)	
New RFUS20NS6S	TL	600	600	20	100	2.8	20	10	600	35	0.5	1	LPDS (D2-Pack)	
RF101A2S	T-32	200	200	1	20	0.87	1	10	200	25	0.5	1	MSR	
RF601T2D	Bulk	200	200	6	60	0.93	6	10	200	25	0.5	1	TO-220FN	
RF1001T2D	Bulk	200	200	10	80	0.93	10	10	200	25	0.5	1	TO-220FN	
RF1601T2D	Bulk	200	200	16	100	0.93	16	10	200	30	0.5	1	TO-220FN	
RF2001T2D	Bulk	200	200	20	100	0.93	20	10	200	30	0.5	1	TO-220FN	
RF2001T3D	Bulk	350	300	20	100	1.3	20	10	300	25	0.5	1	TO-220FN	
RF2001T4S	Bulk	430	400	20	100	1.6	20	10	400	30	0.5	1	TO-220FN	
New RF1501TF3S	Stick	350	300	20	100	1.5	20	10	300	30	0.5	1	TO-220NFM (2pin)	
New RFU5TF5S	Stick	600	600	5	80	1.7	5	10	600	30	0.5	1	TO-220NFM (2pin)	
New RFU5TF6S	Stick	600	600	5	60	2.8	5	10	600	25	0.5	1	TO-220NFM (2pin)	
New RFU10TF6S	Stick	600	600	10	100	2.8	10	10	600	25	0.5	1	TO-220NFM (2pin)	
New RFX10TF6S	Stick	600	600	10	100	2.5	10	10	600	30	0.5	1	TO-220NFM (2pin)	
New RF1005TF6S	Stick	600	600	10	100	1.7	10	10	600	40	0.5	1	TO-220NFM (2pin)	
New RFUS20TF6S	Stick	600	600	20	100	2.8	20	10	600	35	0.5	1	TO-220NFM (2pin)	
New RFUS20TM4S	Stick	430	430	20	100	1.6	20	10	430	35	0.5	1	TO-220NFM (3pin)	
New RFU20TM5S	Stick	530	530	20	100	2	20	10	530	30	0.5	1	TO-220NFM (3pin)	
New RFUS20TM6S	Stick	600	600	20	100	2.8	20	10	600	35	0.5	1	TO-220NFM (3pin)	

*1 : Value/element

*2 : 1/2 I_O/element (for 2-element products)

■ General Purpose Rectifier Diodes

Product No.		Absolute Maximum Ratings (Ta=25°C)				Electrical Characteristics (Ta=25°C)							Package	Equivalent Circuit Diagram
Part No.	Taping Code	V _{RM} (V)	V _R (V)	I _O (A)	I _{FSM(A)} 60Hz.1~	V _F (V) Max.	I _F (A)	I _R (μA) Max.	V _R (V)	t _{rr} (ns) Max.	I _F (A)	I _R (A)		
RR274EA-400	TR	400	400	0.5	8	1.1	0.5	10	400	-	-	-	TSMD5	
RR264M-400	TR	400	400	0.7	25	1.1	0.7	10	400	-	-	-	PMDU	
RR255M-400	TR	400	400	0.7	150 *	0.98	0.7	1	400	-	-	-	PMDU	
1SR154-400	TE25	500	400	1	30	1.1	1	10	400	-	-	-	PMDS	
1SR154-600	TE25	750	600	1	30	1.1	1	10	600	-	-	-	PMDS	
1SR139-400	T-32	500	400	1	30	1.1	1	10	400	-	-	-	MSR	
1SR139-600	T-32	750	600	1	30	1.1	1	10	600	-	-	-	MSR	

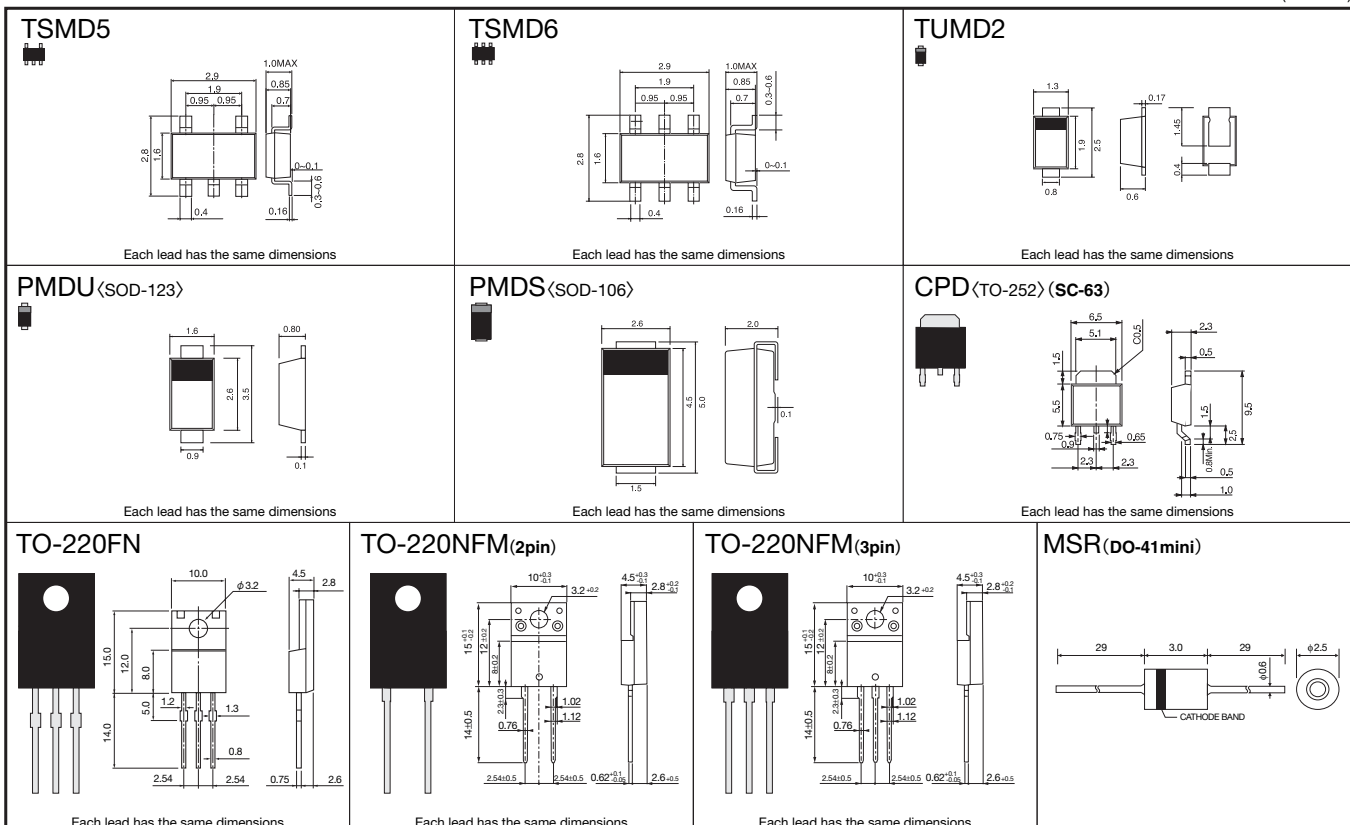
* : I_{FRM} (A)

■ High-Speed Rectifier Diodes

Product No.		Absolute Maximum Ratings (Ta=25°C)				Electrical Characteristics (Ta=25°C)							Package	Equivalent Circuit Diagram
Part No.	Taping Code	V _{RM} (V)	V _R (V)	I _O (A)	I _{FSM(A)} 60Hz.1~	V _F (V) Max.	I _F (A)	I _R (μA) Max.	V _R (V)	t _{rr} (ns) Max.	I _F (A)	I _R (A)		
1SR156-400	TE25	500	400	1	20	1.3	0.8	10	400	400	10	10	PMDS	
1SR153-600	T-32	500	400	1	30	1.3	0.8	10	400	400	10	10	MSR	

Dimensions

(Unit : mm)



Figures in < > indicate the JEDEC code, while characters in () denote the JEITA code.

* Please visit ROHM's website for additional details/specifications

The content specified in this document is correct as of 1st October, 2009.

No copying or reproduction of this document, in part or in whole, is permitted without the consent of ROHM Co.,Ltd.

The content specified herein is subject to change for improvement without notice.

The content specified herein is for the purpose of introducing ROHM's products (hereinafter "Products"). If you wish to use any such Product, please be sure to refer to the specifications, which can be obtained from ROHM upon request.

Examples of application circuits, circuit constants and any other information contained herein illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.

Great care was taken in ensuring the accuracy of the information specified in this document. However, should you incur any damage arising from any inaccuracy or misprint of such information, ROHM shall bear no responsibility for such damage.

The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM and other parties. ROHM shall bear no responsibility whatsoever for any dispute arising from the use of such technical information.

The Products specified in this document are intended to be used with general-use electronic equipment or devices (such as audio visual equipment, office-automation equipment, communication devices, electronic appliances and amusement devices).

The Products specified in this document are not designed to be radiation tolerant.

While ROHM always makes efforts to enhance the quality and reliability of its Products, a Product may fail or malfunction for a variety of reasons.

Please be sure to implement in your equipment using the Products safety measures to guard against the possibility of physical injury, fire or any other damage caused in the event of the failure of any Product, such as derating, redundancy, fire control and fail-safe designs. ROHM shall bear no responsibility whatsoever for your use of any Product outside of the prescribed scope or not in accordance with the instruction manual.

The Products are not designed or manufactured to be used with any equipment, device or system which requires an extremely high level of reliability the failure or malfunction of which may result in a direct threat to human life or create a risk of human injury (such as a medical instrument, transportation equipment, aerospace machinery, nuclear-reactor controller, fuel-controller or other safety device). ROHM shall bear no responsibility in any way for use of any of the Products for the above special purposes. If a Product is intended to be used for any such special purpose, please contact a ROHM sales representative before purchasing.

If you intend to export or ship overseas any Product or technology specified herein that may be controlled under the Foreign Exchange and the Foreign Trade Law, you will be required to obtain a license or permit under the Law.

ROHM Sales Offices

Contact us for further information about the products.

R0039A

San Diego +1-858-625-3630	United Kingdom +44-1-908-272400	Tianjin +86-22-23029181	Xiamen +86-592-238-5705
Atlanta +1-770-754-5972	Denmark +45-3694-4739	Shanghai +86-21-6279-2727	Zhuhai +86-756-3232-480
Boston +1-978-371-0382	Espoo +358-9725-54491	Hangzhou +86-571-87658072	Hong Kong +852-2-740-6262
Chicago +1-847-368-1006	Salo +358-2-7332234	Nanjing +86-25-8689-0015	Taipei +886-2-2500-6956
Dallas +1-972-473-3748	Oulu +358-8-5372930	Ningbo +86-574-87654201	Kaohsiung +886-7-237-0881
Denver +1-303-708-0908	Barcelona +34-9375-24320	Qingdao +86-532-8577-9312	Singapore +65-6332-2322
Detroit +1-248-348-9920	Hungary +36-1-4719338	Suzhou +86-512-6807-1300	Philippines +63-2-807-6872
Nashville +1-615-620-6700	Poland +48-22-5757213	Wuxi +86-510-82702693	Thailand +66-2-254-4890
Mexico +52-33-3123-2001	Russia +7-495-739-41-74	Guangzhou +86-20-3878-8100	Kuala Lumpur +60-3-7958-8355
Düsseldorf +49-2154-9210	Seoul +82-2-8182-700	Huizhou +86-752-205-1054	Penang +60-4-2286453
Munich +49-8999-216168	Masan +82-55-240-6234	Fuzhou +86-591-8801-8698	Kyoto +81-75-365-1218
Stuttgart +49-711-7272-370	Dalian +86-411-8230-8549	Dongguan +86-769-8393-3320	Yokohama +81-45-476-2290
France +33-1-5697-3060	Beijing +86-10-8525-2483	Shenzhen +86-755-8307-3008	

ROHM Co.,Ltd.

21 Saiin Mizosaki-cho, Ukyo-ku,
Kyoto 615-8585 Japan
TEL : +81-75-311-2121 FAX : +81-75-315-0172

www.rohm.com

