

2012

Product Catalog

**ROHM**  
SEMICONDUCTOR

Modules (Sub Systems)

# Thermal Printheads

for Barcode Label , Photo / Card Printers

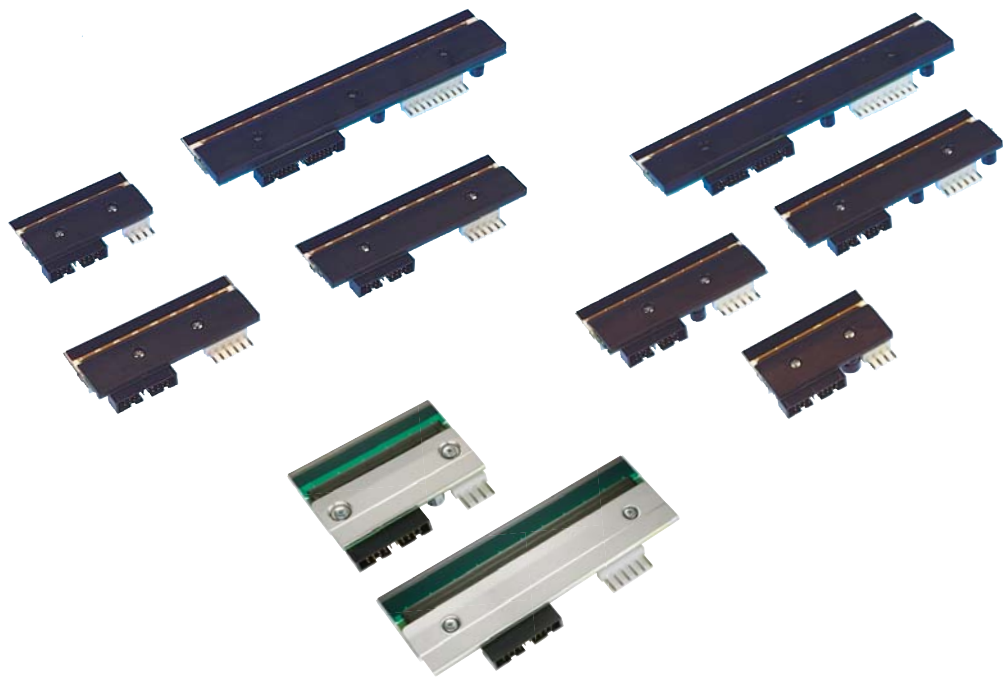


# Thermal Printheads

## for Bar Code Label , Photo / Card Printers

ROHM' s new thin-film step-free structure ensures durable, high quality printing at speeds of 300mm/s or higher.

Thick film heads are offered that utilize an ultra-compact resistive element structure for high quality printing at 250mm/s. In addition, thermal history IC compatibility makes them ideal for high performance barcode label printers.



### Feature Icon Key

Product features are indicated by the following icons on the respective product pages.



**High Resolution**  
ROHM offers high-resolution solutions for demanding printing requirements.



**Multi Input** **Multi-input Support**  
Supports multi-input devices for retail, POS and other applications.



**24V Supply** **24V Power**  
Compatible with standard 24V power supplies.



**History Control** **Built-in History Control**  
ROHM's predictive control function and history control driver chip deliver faster, higher-performance printing.



**With Cover** **Cover Guide Included**  
Built-in cover guide acts as a ribbon guide for thermal transfer printing.



**Battery Drive** **Battery Compatible**  
Low voltage operation ideal for use with batteries and other low-current power supplies.



**W Coat** **W Coat**  
Longer abrasion life than X Coat. Includes conductive layer.



**Near Edge** **Near Edge Type**  
Straight path printing possible due to near edge structure.



**Large  $\phi$  Platen** **Large Platen**  
Compatible with platens as large as 20mm in diameter.

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# For Ticketing and Scale Printers



## DC10/DC92/DC72 Series

### Outline

A high-speed element structure and large-current resistive coating is utilized for high reliability in industrial devices. The DC72 series is equipped with ROHM's unique history control function and is capable of high-speed 12ips printing.

### Features

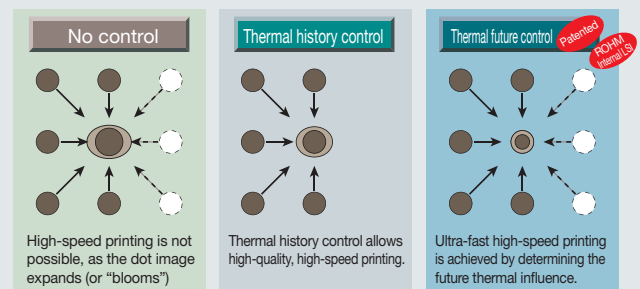
High Resolution	Multi Input	History Control*	24V Supply
W Coat	With Cover	Large $\phi$ Platen	

\* Compatible only with the DC72 Series

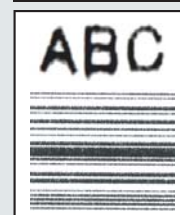
## Ultra-high speed, ultra-high resolution

- In addition to an element structure optimized for high-speed printing and robust protective coating, the DC72 series automatically determines peripheral dot printing history and performs energy control for each dot, enabling high-speed bar-code printing up to speeds of 300mm/s.
- The DC10/92 series features the same basic structure as the DC72 series, but integrates printer-based history control for more control design flexibility - a considerable advantage over competitor products.
- The resistive element structure used in both series provides an energy savings of approximately 15% compared to conventional models, and can be used for a variety of applications (e.g. 200dpi or 300dpi resolution at 2-, 3-, 4-, or 6-inch sizes).

### Thermal history control and thermal future control of heat elements



### Conventional Head



Bleeding, blurring

### DC Series



Sharp, no bleeding

## Ultra-reliable

The W Coat provides :

- ① More than 3 times the abrasion life of normal coats (150km versus 50km standard abrasion life.)
- ② Reduced static electricity between the media and the printhead at high-speed printing as well as protection against damage due to ESD.
- ③ Large current-compatible structure ensures high reliability, even during continuous printing and high printing duty cycle.

### Normal Coat



Abrasion Life : 50km

Characterized by a hard glass protective overcoat utilizing thick-film equipment. Delivers the highest overcoat available for the fax market, hand-held printers, and similar applications.

### W Coat



Abrasion Life : 150km

Utilizes a hybrid structure with an anti-abrasion overcoat for industrial equipment. Compatible with continuous length, high-speed printing. Ideal for bar code printer markets.

**Applications**

Ideal for applications used in the outdoor or requiring continuous printing, such as ticket machines, tag/food scales, or parking ticket machines.



Food Scale



Parking Ticket Machine

**Product Lineup**

■ DC10/DC92 Series

Part No.	Resolution (dpi)	Print Width (mm)	Number of dot (dots)	Resistance Tolerance (Ω)	Resistance Variation	Platen Diameter Max.(mm)	Print Speed (mm/s)	Logic Voltage (V)	Supply Voltage (V)	Connector Type	Heat Sink	Abrasion Life (km)	Pulse Life (pulses)
<b>KD2002-DC10A</b>	203	56	448	650	±3%	20	100 to 300	3.13 to 5.25	24	Cable	Yes	150	100 million
<b>KD2003-DC10A</b>	203	80	640	650	±3%	20	100 to 300	3.13 to 5.25	24	Cable	Yes	150	100 million
<b>KD2004-DC10A</b>	203	104	832	650	±3%	20	100 to 300	3.13 to 5.25	24	Cable	Yes	150	100 million
<b>KD2006-DC10A</b>	203	168	1344	650	±3%	20	100 to 300	3.13 to 5.25	24	Cable	Yes	150	100 million
<b>KD3002-DC92A</b>	300	54.2	640	1250	±3%	20	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
<b>KD3003-DC92A</b>	300	81.3	960	1250	±3%	20	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
<b>KD3004-DC92A</b>	300	108.4	1280	1250	±3%	20	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
<b>KD3006-DC92A</b>	300	162.6	1920	1250	±3%	20	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
<b>KD3004-DC10A</b>	300	108.4	1280	1000	±3%	20	100 to 250	3.13 to 5.25	24	Cable	Yes	150	100 million

■ DC72 Series

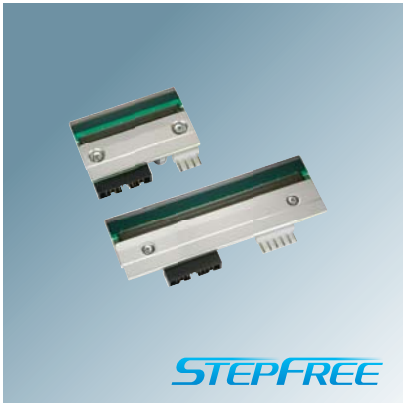
Part No.	Resolution (dpi)	Print Width (mm)	Number of dot (dots)	Resistance Tolerance (Ω)	Resistance Variation	Platen Diameter Max.(mm)	Print Speed (mm/s)	Logic Voltage (V)	Supply Voltage (V)	Connector Type	Heat Sink	Abrasion Life (km)	Pulse Life (pulses)
<b>KD2002-DC72A</b>	203	56	448	550	±3%	20	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
<b>KD2003-DC72A</b>	203	80	640	550	±3%	20	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
<b>KD2004-DC72A</b>	203	104	832	550	±3%	20	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
<b>KD2006-DC72A</b>	203	168	1344	550	±3%	20	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
<b>KD3002-DC72A</b>	300	54.2	640	1250	±3%	20	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
<b>KD3003-DC72A</b>	300	81.3	960	1250	±3%	20	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
<b>KD3004-DC72A</b>	300	108.4	1280	1250	±3%	20	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
<b>KD3006-DC72A</b>	300	162.6	1920	1250	±3%	20	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million

**Dimensions**

(Unit : mm)

Part No.	A (mm)	B (mm)	C (mm)
<b>KD2002-DC10A</b> / <b>KD2002-DC72A</b>	65	56	3.0
<b>KD2003-DC10A</b> / <b>KD2003-DC72A</b>	91	80	
<b>KD2004-DC10A</b> / <b>KD2004-DC72A</b>	118	104	
<b>KD2006-DC10A</b> / <b>KD2006-DC72A</b>	182	168	3.5
<b>KD3002-DC92A</b> / <b>KD3002-DC72A</b>	65	54.2	3.0
<b>KD3003-DC92A</b> / <b>KD3003-DC72A</b>	91	81.3	
<b>KD3004-DC92A</b> / <b>KD3004-DC72A</b>	118	108.4	
<b>KD3006-DC92A</b> / <b>KD3006-DC72A</b>	182	162.6	3.5

# For Distribution and Food Label Printers



## SE/SF Series

### Overview

Utilizes a step-free structure for excellent speed, quality, and reliability. Ideal for high-quality industrial barcode label printers (units including history IC also available).

### Features

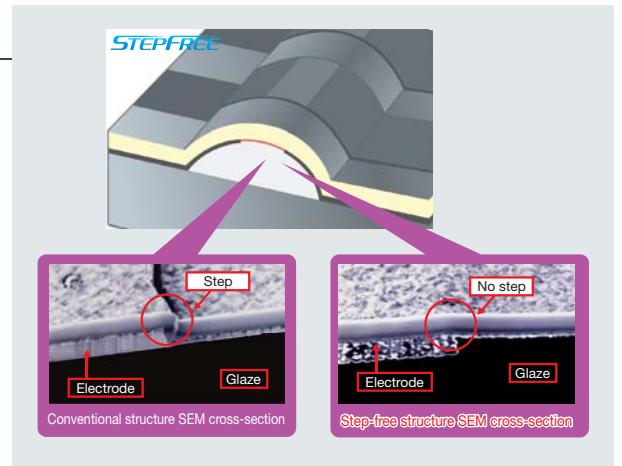
- High Resolution
- History Control\*
- W Coat
- Large  $\phi$  Platen
- With Cover
- 24V Supply
- Multi Input

\* Compatible only with the SE□-DC70A

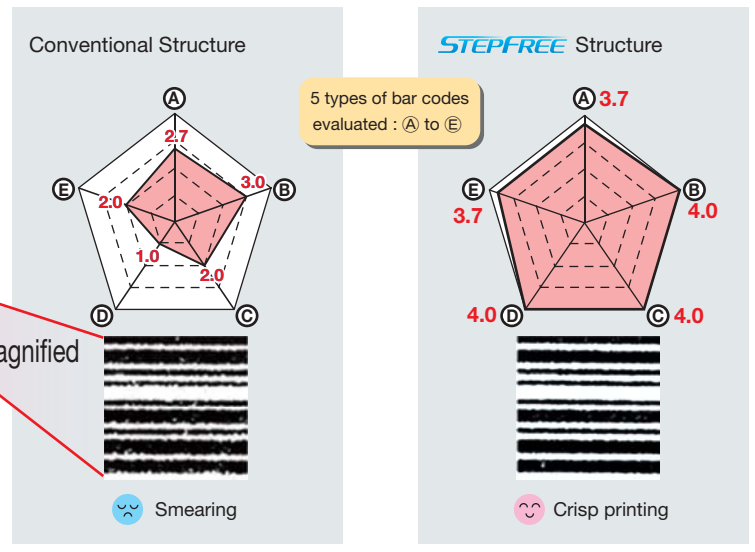
### High quality and reliability with ROHM's original step-free structure

ROHM's new step-free structure utilizes a new film formation method developed by ROHM that eliminates the step previously present at the area where the heater line contacts with the media, resulting in dramatically improved print quality at high speeds.

In addition, the compact, stable overcoat structure is robust against ion corrosion and scratching due to foreign particles, ensuring a greater degree of reliability.



### Barcode printing evaluation by ANSI



**Applications**

Ideal for barcode printers or label printers at factory assembly lines or distribution centers where 24-hour operation or continuous printing are required.



Barcode Label Printer



Distribution Labeling

**Product Lineup**

Part No.	Resolution (dpi)	Print Width (mm)	Number of dot (dots)	Resistance Tolerance (Ω)	Resistance Variation	Platen Diameter Max.(mm)	Print Speed (mm/s)	Logic Voltage (V)	Supply Voltage (V)	Connector Type	Heat Sink	Abrasion Life (km)	Pulse Life (pulses)
SE2002-DC70A	203	56	448	550	±15%	20	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
SE2004-DC70A	203	112	896	550	±15%	20	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
SE3002-DC70A	300	54.2	640	850	±15%	20	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
SE3004-DC70A	300	108.4	1280	850	±15%	20	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
SE2002-DC90A	203	56	448	550	±15%	20	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
SE2003-DC90A	203	80	640	550	±15%	20	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
SE2004-DC90A	203	112	896	550	±15%	20	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
SE3002-DC90A	300	54.2	640	850	±15%	20	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
SE3003-DC90A	300	81.3	960	850	±15%	20	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
SE3004-DC90A	300	108.4	1280	850	±15%	20	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
★ SF2004-DC10A	203	104	832	800	±15%	20	100 to 300	3.30 to 5.25	24	Cable	Yes	150	100 million
★ SF3004-DC10A	300	108.4	1280	1000	±15%	20	100 to 250	3.30 to 5.25	24	Cable	Yes	150	100 million
★ SF2006-DC10A	203	160	1280	800	±15%	20	100 to 300	3.30 to 5.25	24	Cable	Yes	150	100 million
★ SF3006-DC10A	305	170.6	2048	1000	±15%	20	100 to 250	3.30 to 5.25	24	Cable	Yes	150	100 million

★ : Under development

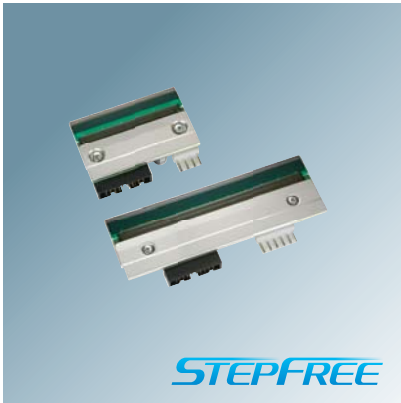
**Dimensions**

(Unit : mm)

Part No.	A (mm)	B (mm)
SE2002-DC70A	66	56
SE2004-DC70A	124	112
SE3002-DC70A	66	54.2
SE3004-DC70A	124	108.4
SE2002-DC90A	66	56
SE2003-DC90A	90	80
SE2004-DC90A	124	112
SE3002-DC90A	66	54.2
SE3003-DC90A	90	81.3
SE3004-DC90A	124	108.4
★ SF2004-DC10A	118	104
★ SF3004-DC10A	125	108.4
★ SF2006-DC10A	174	160
★ SF3006-DC10A	186	170.6

★ : Under development

# For High-Speed Packaging Printers



## SH/SJ Series

### Overview

These thermal heads feature a near-edge structure based on the high-speed, high-quality, reliability step-free SE series, enabling straight path for hard media or high speed printing.

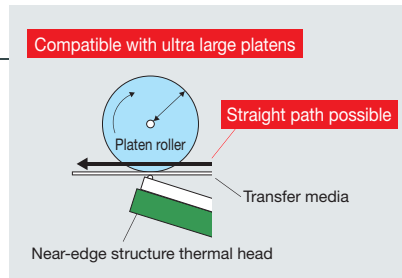
### Features

High Resolution	History Control*	W Coat	With Cover
Near Edge	24V Supply	Multi Input	

\* Compatible only with the SH□-DC70A series

## Near-edge structure

- The near-edge structure makes it possible to transfer media in a straight path on ultra-large platens.
- The high-speed heat element structure enables high quality printing, even at speeds up to 300mm/s, while the straight path capability ensures support for thermal transfer ribbons (hot-peeling) or thick media.



### Applications

Ideal for packaging printers requiring high reliability.



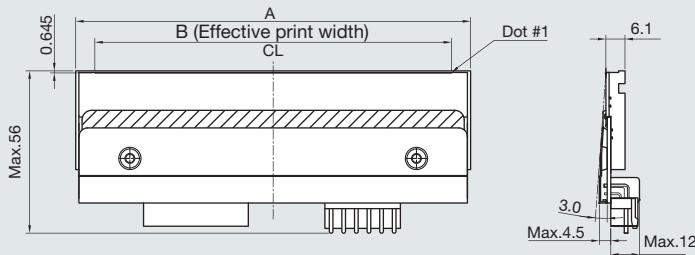
Package Printer

### Product Lineup

Part No.	Resolution (dpi)	Print Width (mm)	Number of dot (dots)	Resistance Tolerance (Ω)	Resistance Variation	Platen Diameter Max.(mm)	Print Speed (mm/s)	Logic Voltage (V)	Supply Voltage (V)	Connector Type	Heat Sink	Abrasion Life (km)	Pulse Life (pulses)
SH2002-DC70A	203	56	448	550	±15%	50	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
SH2004-DC70A	203	112	896	550	±15%	50	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
SH3002-DC70A	300	54.2	640	850	±15%	50	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
SH3004-DC70A	300	108.4	1280	850	±15%	50	100 to 250	4.75 to 5.25	24	Cable	Yes	150	100 million
SH2002-DC90A	203	56	448	550	±15%	50	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
SH2004-DC90A	203	112	896	550	±15%	50	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
SH3002-DC80A	300	54.2	640	550	±15%	50	600	4.75 to 5.25	24	Cable	Yes	150	100 million
SH3002-DC90A	300	54.2	850	850	±15%	50	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
SH3004-DC90A	300	108.4	850	850	±15%	50	100 to 300	4.75 to 5.25	24	Cable	Yes	150	100 million
★ SJ2004-DC10A	203	104	832	800	±15%	20	100 to 300	3.30 to 5.25	24	Cable	Yes	150	100 million
★ SJ3004-DC10A	305	106.6	1280	1000	±15%	20	100 to 250	3.30 to 5.25	24	Cable	Yes	150	100 million

★ : Under development

### Dimensions

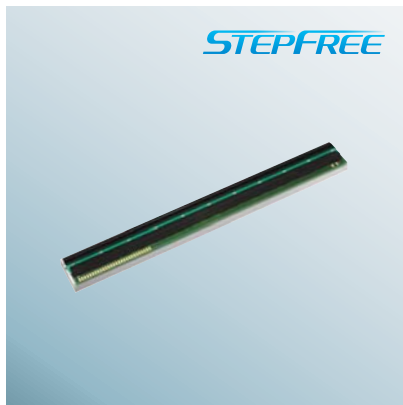


Part No.	(Unit : mm)	
	A (mm)	B (mm)
SH2002-DC70A	66	56
SH2004-DC70A	124	112
SH3002-DC70A	66	54.2
SH3004-DC70A	124	108.4
SH2002-DC90A	66	56
SH2004-DC90A	124	112
SH3002-DC80A	66	54.2
SH3002-DC90A	66	54.2
SH3004-DC90A	124	108.4
★ SJ2004-DC10A	118	104
★ SJ3004-DC10A	125	106.6

★ : Under development

# For Photo Printers

## SF3004-EC10A



### Summary

ROHM's SF3004-EC10A series printheads feature high resolution printing capability and utilize original energy saving technology, allowing them to be battery-driven. They are ideal for compact photo printers with direct print functionality.

### Features

Enables full-color printing by keeping the adjacent resistance tolerance to within  $\pm 1.5\%$ .

Integrates a driver IC capable of high-speed data transfer at a circuit supply voltage of 3.3V, simplifying gradation printing control.

### Applications

- Home Printers
- Mobile Photo Printers
- Photo KIOSK Terminals
- EFT-POS
- POS
- Handheld Printers
- PDA

### Product Lineup

Part No.	Resolution (dpi)	Print Width (mm)	Number of Dot (dots)	Resistance ( $\Omega$ )	Resistance Tolerance	Platen Diameter Max.(mm)	Logic Voltage (V)	Supply Voltage (V)	Connector Type	Heat Sink	Abrasion Life (km)	Pulse Life (pulses)
SF3004-EC10A	300	108.16	1280	2800	$\pm 10\%$	10	3.0 to 5.25	12 to 24	FFC	Yes	2	50 million

# For Card Printers

## SJ3002-EC60A / SJ2001-EC60A



### Summary

ROHM's SJ3002-EC60A series printheads utilize Real Flat glazing technology and feature a near edge structure, enabling straight path printing on card and other heavy stock media, making them suitable for a wide variety of applications.

### Features

Compact and lightweight, ensuring greater design freedom.

Extremely uniform heat element surface using Real Flat glazing technology makes high quality printing on hard card stock possible.

### Applications

- Plastic Card
- Rewritable Printer

### Product Lineup

Part No.	Resolution (dpi)	Print Width (mm)	Number of Dot (dots)	Resistance ( $\Omega$ )	Resistance Tolerance	Platen Diameter Max.(mm)	Logic Voltage (V)	Supply Voltage (V)	Connector Type	Heat Sink	Abrasion Life (km)	Pulse Life (pulses)
SJ3002-EC60A	300	54.2	640	3000	$\pm 15\%$	$\infty$	3.0 to 5.25	24	Cable	Yes	50	50 million
★ SJ2001-EC60A	203	40	320	850	$\pm 15\%$	$\infty$	3.0 to 5.25	24	Cable	Yes	50	50 million

★ : Under development

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## ROHM Sales Offices

Contact us for further information about the products.

<b>San Diego</b>	+1-858-625-3600	<b>Mexico</b>	+52-33-3123-2001	<b>Spain</b>	+34-9375-24320	<b>Singapore</b>	+65-6332-2322
<b>Atlanta</b>	+1-770-754-5972	<b>Brazil</b>	+55-11-3539-6320	<b>Hungary</b>	+36 1 950 5859	<b>Philippines</b>	+63-2-807-6872
<b>Boston</b>	+1-978-371-0382	<b>Dusseldorf</b>	+49-2154-921-0	<b>Russia</b>	+74 95 739 4174	<b>Thailand</b>	+66-2-254-4890
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<b>Dallas</b>	+1-972-473-3748	<b>France</b>	+33 (0) 1 40 60 87 30	<b>Dalian</b>	+86-411-8230-8549	<b>India</b>	+91-44-4352-0008
<b>Denver</b>	+1-303-708-0908	<b>United Kingdom</b>	+44-1-908-272400	<b>Shanghai</b>	+86-21-6279-2727	<b>Kyoto</b>	+81-75-365-1218
<b>Detroit</b>	+1-248-348-9920	<b>Espoo</b>	+358 400 222 382	<b>Shenzhen</b>	+86-755-8307-3008	<b>Yokohama</b>	+81-45-476-2121
<b>Nashville</b>	+1-615-620-6700	<b>Salo</b>	+358-2-7332234	<b>Hong Kong</b>	+852-2-740-6262		
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