

To our customers,

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## Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

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Renesas Electronics Corporation

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# General-purpose operational amplifiers and comparators

Single-power supply operational amplifiers, comparators, and low-noise operational amplifiers, eight products in total, are now available as products in a small package.

Keeping the conventional functions, the mounting area is reduced by 40 to 50% compared to standard SOP packages, by making the lead pitch to 0.65 mm, thus reducing the package width. The operating temperature range is widened to easily support various usage environments.

## Features

- Reduction of mounting area on printed circuit board contributes set miniaturization.
- Even in a small package, thermal resistance is reduced approximately 10% from that of existing SOP packages thanks to adoption of copper lead materials.
- Addition of eight models to a product line at a time makes further set miniaturization if two or more models of the line are used.
- Operating temperature range is widened. (General product: -40 to 85°C, Temperature widened product: -40 to 125°C)

## Application

General product: Analog signal processing for industry and consumer devices (such as sensor signal amplification and judgment, and filter circuit)

Temperature widened product: Application requiring rather wide operating temperature, such as industry and vehicle devices

\*: Compared with conventional NECEL products

## TSSOP-package deployment produces small and thin product.

Number of pins	Current SOP (Lead pitch 1.27mm)	TSSOP (Lead pitch 0.65mm)	Area ratio [Values in parentheses show reduction ratio.]
14pin			61% (49%)
8pin			59% (41%)

## Product Specification Overview

### Operational amplifier (general product)

Type	Product Name	Number of Circuits	Power Supply Voltage (V)	Operating Temperature (°C)	V <sub>IO</sub> [max] (mV)	I <sub>B</sub> [max] (nA)	I <sub>CC</sub> [max] (mA)	SR[typ] (V/μs)	Number of Pins
Single-power supply	μPC358GR-9LG	2	32	-40 to +85	±7	250	1.2	0.25	8
	μPC324GR-9LG	4	32	-40 to +85	±7	250	2	0.25	14
High-speed single-power supply	μPC4742GR-9LG	2	36	-40 to +85	±4.5	500	5.5	8.5	8
	μPC4744GR-9LG	4	36	-40 to +85	±6	500	11	8.5	14
Low noise	μPC4570GR-9LG	2	36	-40 to +85	±5	400	8	7	8
	μPC4574GR-9LG	4	36	-40 to +85	±5	1000	12	6	14

### Operational amplifier (temperature widened product)

Type	Product Name	Number of Circuits	Power Supply Voltage (V)	Operating Temperature (°C)	V <sub>IO</sub> [max] (mV)	I <sub>B</sub> [max] (nA)	I <sub>CC</sub> [max] (mA)	SR[typ] (V/μs)	Number of Pins
Single-power supply	μPC1251GR-9LG	2	32	-40 to +125	±7	250	1.2	0.25	8
	μPC451GR-9LG	4	32	-40 to +125	±7	250	2	0.25	14
High-speed single-power supply	μPC842GR-9LG	2	36	-40 to +125	±4.5	500	5.5	8.5	8
	μPC844GR-9LG	4	36	-40 to +125	±6	500	11	8.5	14

### Comparator (general product)

Type	Product Name	Number of Circuits	Power Supply Voltage (V)	Operating Temperature (°C)	V <sub>IO</sub> [max] (mV)	I <sub>B</sub> [max] (nA)	I <sub>CC</sub> [max] (mA)	Response Time [typ] (μs)	Number of Pins
Single-power supply	μPC393GR-9LG	2	36	-40 to +85	±5	250	1	1.8	8
	μPC339GR-9LG	4	36	-40 to +85	±5	250	2	1.6	14

### Comparator (temperature widened product)

Type	Product Name	Number of Circuits	Power Supply Voltage (V)	Operating Temperature (°C)	V <sub>IO</sub> [max] (mV)	I <sub>B</sub> [max] (nA)	I <sub>CC</sub> [max] (mA)	Response Time [typ] (μs)	Number of Pins
Single-power supply	μPC277GR-9LG	2	36	-40 to +125	±5	250	1	1.8	8
	μPC177GR-9LG	4	36	-40 to +125	±5	250	2	1.6	14

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