



**THE DATASHEET OF  
PS2705-1-F3**



# PHOTOCOUPPLERS SELCTION GUIDE



# SUITABLE PRODUCT FOR EACH APPLICATIONS

Renesas offers an array of flexible products suitable for a wide range of applications.

| Application Field    | Application Name                      | Motor Drive |           | Communication            |                |               | Transistor Output |
|----------------------|---------------------------------------|-------------|-----------|--------------------------|----------------|---------------|-------------------|
|                      |                                       | IGBT drive  | IPM drive | Current/ Voltage monitor | Communication  |               |                   |
|                      |                                       |             |           |                          | Digital output | Analog output |                   |
| Industry             | AC Servo                              | •           | •         | •                        | •              | •             | •                 |
|                      | NC machine tools                      | •           | •         | •                        | •              | •             | •                 |
|                      | GAS / Water / Electric power Meter    |             |           |                          | •              | •             | •                 |
|                      | Smart meter                           |             |           |                          | •              | •             | •                 |
|                      | Service Robot                         |             |           |                          |                |               | •                 |
|                      | Industrial Robot                      | •           | •         | •                        | •              | •             | •                 |
|                      | Buttery system                        | •           | •         | •                        | •              | •             | •                 |
|                      | Solar power conditioner               | •           | •         | •                        | •              | •             | •                 |
|                      | UPS                                   | •           | •         | •                        | •              | •             | •                 |
|                      | Welding machine                       | •           | •         | •                        | •              | •             | •                 |
|                      | Semiconductor manufacturing equipment |             |           |                          | •              | •             | •                 |
|                      | Tester / measurement device           | •           | •         |                          | •              | •             | •                 |
|                      | PLC                                   | •           | •         |                          | •              | •             | •                 |
|                      | Network Camera                        |             |           |                          | •              |               | •                 |
|                      | Vending machine                       | •           |           |                          |                | •             | •                 |
|                      | Electric tools                        | •           | •         |                          | •              | •             | •                 |
|                      | Security sensor , camera              |             | •         |                          | •              | •             | •                 |
| Industrial LED light |                                       |             |           |                          |                | •             |                   |
| Communication        | Server                                |             |           |                          |                |               | •                 |
|                      | Network Switch                        |             |           |                          | •              | •             | •                 |
|                      | Router                                |             |           |                          | •              |               | •                 |
|                      | Wireless base station                 |             |           |                          | •              |               | •                 |
|                      | Line-phone                            |             |           |                          | •              |               | •                 |
|                      | Infrastructure Switch                 |             | •         |                          | •              |               | •                 |
|                      | Broadcast apparatus                   |             |           |                          |                |               | •                 |
| Consumer             | Video / Audio                         |             | •         |                          | •              | •             | •                 |
|                      | TB                                    |             |           |                          | •              |               | •                 |
|                      | STB                                   |             |           |                          |                |               | •                 |
|                      | Camera                                |             | •         |                          | •              | •             | •                 |
|                      | Game(Portable / Stationary)           |             |           |                          |                |               | •                 |
|                      | Pachinko                              |             |           |                          | •              | •             | •                 |
|                      | Air Conditioner                       | •           | •         |                          | •              | •             | •                 |
|                      | Lightings                             |             |           |                          | •              | •             | •                 |
|                      | Washing machine                       |             | •         |                          | •              | •             | •                 |
|                      | Refrigerator                          | •           |           |                          |                |               | •                 |
| IH Cooker            | •                                     |             |           | •                        | •              | •             |                   |
| OA                   | Scanner                               |             |           |                          |                |               | •                 |
|                      | HDD                                   |             |           |                          |                |               | •                 |
|                      | POS                                   |             |           |                          | •              | •             | •                 |
|                      | PPC / Printer                         |             |           |                          | •              |               | •                 |
|                      | Server / Workstation / Super Comsuter | •           | •         |                          | •              | •             | •                 |
|                      | Desktop PC                            |             |           |                          | •              |               | •                 |
|                      | Mobile PC / Tablet                    |             |           |                          | •              |               | •                 |
| Monitor              |                                       |             |           |                          |                | •             |                   |

# PHOTOCOUPLER LINE-UP

Renesas offers photocouplers targeted to specific applications, from high-speed products for motor drive and communication to general-purpose Tr. output products.

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## IC-Output

Creepage Isolation Voltage Pin pitch

Motor drive and control

Communication



| DIP8<br>7/8 mm<br>5 kV<br>2.54 mm | SDIP<br>7/8 mm<br>5 kV<br>1.27 mm | LSDIP8<br>15 mm<br>7.5 kV<br>1.27 mm | LSO5<br>8 mm<br>5 kV<br>1.27 mm | S05<br>4.2 mm<br>3.75 kV<br>1.27 mm | LSS05<br>8.2 mm<br>5 kV<br>0.65 mm | S08<br>4 mm<br>2.5 kV<br>1.27 mm | S016<br>8 mm<br>5 kV<br>1.27 mm |
|-----------------------------------|-----------------------------------|--------------------------------------|---------------------------------|-------------------------------------|------------------------------------|----------------------------------|---------------------------------|
| PS9531                            | PS9331<br>PS9332                  | PS9905                               | PS9031                          |                                     | RV1S9231A                          |                                  | PS9402                          |
| PS9506                            | PS9307A                           |                                      |                                 |                                     | RV1S9207A                          |                                  |                                 |
| PS9513                            | PS9313                            |                                      | PS9013<br>RV1S9062A             | PS9113<br>RV1S9162A                 | RV1S9213A<br>RV1S9262A             |                                  |                                 |
|                                   | PS9303<br>PS9309                  |                                      | PS9009<br>RV1S9061A             | RV1S9161A                           | RV1S9209A<br>RV1S9261A             |                                  |                                 |
| PS8551A                           | PS8352A                           |                                      |                                 |                                     |                                    |                                  |                                 |
| PS9551A                           |                                   |                                      |                                 |                                     |                                    |                                  |                                 |
|                                   | RV1S9353A                         |                                      |                                 |                                     |                                    |                                  |                                 |
|                                   | PS9351                            |                                      |                                 | PS9151                              |                                    | PS9851-1<br>PS9851-2             |                                 |
|                                   |                                   | RV1S9960A                            | RV1S9060A                       | RV1S9160A                           | RV1S9260A                          |                                  |                                 |
|                                   |                                   |                                      |                                 | PS9123                              |                                    |                                  |                                 |
| PS9587                            | PS9317                            |                                      | PS9001                          | PS9117A                             |                                    | PS9817A-1<br>PS9817A-2           |                                 |
|                                   | PS9324                            | PS9924                               |                                 | PS9124                              |                                    | PS9821-1<br>PS9821-2             |                                 |
|                                   |                                   |                                      |                                 | PS9122                              |                                    | PS9822-1<br>PS9822-2             |                                 |
| PS8501<br>PS8502                  | PS8302                            | PS8902                               |                                 | PS8101                              |                                    | PS8802-1<br>PS8802-2             |                                 |

## Transistor-Output

Creepage Isolation Voltage Pin pitch



| DIP4<br>7/8 mm<br>5 kV<br>2.54 mm | LSOP<br>8 mm<br>5 kV<br>2.54 mm | SOP<br>5 mm<br>3.75 kV<br>2.54 mm | LSSOP<br>8.2 mm<br>5 kV<br>1.3 mm | SSOP<br>4/4.5/5 mm<br>1.5/2.5/3.75 kV<br>0.8/1.27 mm | Flat lead<br>4 mm<br>2.5 kV<br>1.27 mm |
|-----------------------------------|---------------------------------|-----------------------------------|-----------------------------------|------------------------------------------------------|----------------------------------------|
|                                   |                                 | PS2701A-1                         |                                   | PS2801C-1/4                                          |                                        |
| PS2561D-1<br>PS2561F-1            |                                 | PS2761B-1                         |                                   | PS2861B-1                                            |                                        |
|                                   | PS2381-1                        |                                   | RV1S2281A                         |                                                      |                                        |
|                                   |                                 | PS2703-1                          |                                   |                                                      | PS2913-1                               |
|                                   |                                 | PS2711-1                          | RV1S2211A                         | PS2811-1/4<br>PS2841-4A/4B                           | PS2911-1                               |
| PS2514-1                          |                                 |                                   |                                   |                                                      |                                        |
| PS2562-1                          |                                 | PS2702-1                          |                                   | PS2802-1/4                                           |                                        |
| PS2533-1<br>PS2535-1              |                                 | PS2733-1                          |                                   | PS2833-1/4                                           | PS2933-1                               |
| PS2565-1                          |                                 | PS2705A-1                         | RV1S2285A                         | PS2805C-1/4                                          |                                        |
|                                   |                                 | PS2715-1                          |                                   | PS2815-1/4<br>PS2845-4A                              | PS2915-1                               |
| PS2506-1                          |                                 | PS2706-1                          |                                   |                                                      |                                        |

# PHOTOCOUPLER PRODUCTS

## SELECTION GUIDE

### IGBT Drive

| Function   | Part No.  | Output Peak Current [A] | Power Supply Voltage [V] | Package       |                        | Isolation Voltage [Vr.m.s.] | Ta max. [°C] | Electrical Characteristics |                |                   |               |            | Protection Functions |      |       |
|------------|-----------|-------------------------|--------------------------|---------------|------------------------|-----------------------------|--------------|----------------------------|----------------|-------------------|---------------|------------|----------------------|------|-------|
|            |           |                         |                          | Configuration | Creepage Distance [mm] |                             |              | DC                         | SW             |                   |               | Protection |                      |      |       |
|            |           |                         |                          |               |                        |                             |              |                            | IFLH max. [mA] | tpHL,LH max. [ns] | PWD max. [ns] | PDD [ns]   | CMR min. [kV/μs]     | UVLO | Clamp |
| IGBT Drive | PS9307A   | 0.6                     | 10 to 30                 | SDIP6         | L:7<br>L2:8            | 5000                        | 125          | 5.0                        | 150            | 50                | -80 to 80     | 50         | ○                    | -    | -     |
|            | RV1S9207A |                         |                          | LSS05         | 8.2                    | 5000                        | 125          | 5.0                        | 150            | 50                | -80 to 80     | 50         | ○                    | -    | -     |
|            | PS9506    |                         |                          | DIP8          | -/L3:7<br>L1/L2:8      | 5000                        | 110          | 7.0                        | 400            | 250               | -300 to 300   | 25         | -                    | -    | -     |
|            | PS9031    | 2.5                     | 15 to 30                 | LS05          | 8                      | 5000                        | 125          | 4.0                        | 175            | 75                | -90 to 90     | 50         | ○                    | -    | -     |
|            | RV1S9231A |                         |                          | LSS05         | 8.2                    | 5000                        | 125          | 5.2                        | 175            | 75                | -90 to 90     | 50         | ○                    | -    | -     |
|            | PS9331    |                         |                          | SDIP6         | L:7<br>L2:8            | 5000                        | 125          | 4.0                        | 175            | 75                | -90 to 90     | 50         | ○                    | -    | -     |
|            | PS9531    |                         |                          | DIP8          | -/L3:7<br>L1/L2:8      | 5000                        | 125          | 4.0                        | 175            | 75                | -90 to 90     | 50         | ○                    | -    | -     |
|            | PS9905    |                         |                          | LSDIP8        | 15                     | 7500                        | 110          | 6.0                        | 150            | 75                | -100 to 100   | 25         | ○                    | -    | -     |
|            | PS9332    | 2                       | 15 to 30                 | SDIP8         | L:7<br>L2:8            | 5000                        | 125          | 4.0                        | 200            | 75                | -90 to 90     | 50         | ○                    | ○    | -     |
|            | PS9402    | 2.5                     | 15 to 30                 | SO16          | 8                      | 5000                        | 110          | 5.0                        | 200            | 100               | -100 to 100   | 25         | ○                    | ○    | ○     |

### IPM Drive

| Function  | Part No.  | Output Type    | Logic       | Package       |                        | Recommended Operating Conditions | Absolute Maximum Ratings |                             | Electrical Characteristics |            |                   |                   |               |                  |
|-----------|-----------|----------------|-------------|---------------|------------------------|----------------------------------|--------------------------|-----------------------------|----------------------------|------------|-------------------|-------------------|---------------|------------------|
|           |           |                |             | Configuration | Creepage Distance [mm] |                                  | Power Supply Voltage [V] | Isolation Voltage [Vr.m.s.] | Ta max. [°C]               | DC         | SW                |                   |               | CMR min. [kV/μs] |
|           |           |                |             |               |                        |                                  |                          |                             |                            |            | IFHL/LH max. [mA] | tpHL/LH max. [ns] | PWD max. [ns] |                  |
| IPM Drive | RV1S9161A | Totem Pole     | Active High | S05           | 4.2                    | 4.5 to 30                        | 3750                     | 125                         | 3.0                        | 60         | 20                | 25                | 100           |                  |
|           | PS9009    |                |             | LS05          | 8                      | 4.5 to 20                        | 5000                     | 125                         | 3.0                        | 200        | 80                | 100               | 50            |                  |
|           | RV1S9061A |                |             |               | 4.5 to 30              | 5000                             | 125                      | 4.5                         | 60                         | 20         | 25                | 100               |               |                  |
|           | RV1S9209A |                |             | LSS05         | 8.2                    | 4.5 to 20                        | 5000                     | 125                         | 3.8                        | 200        | 80                | 100               | 50            |                  |
|           | RV1S9261A |                |             |               | 4.5 to 30              | 5000                             | 125                      | 4.0                         | 60                         | 20         | 25                | 100               |               |                  |
|           | PS9309    |                |             | SDIP6         | L:7<br>L2:8            | 4.5 to 20                        | 5000                     | 110                         | 3.0                        | 200        | 80                | 80                | 15            |                  |
|           | PS9303    |                |             | SDIP6         | L:7<br>L2:8            | 4.5 to 20                        | 5000                     | 100                         | 5.0                        | 500        | 350               | -                 | 15            |                  |
|           | RV1S9162A |                |             | S05           | 4.2                    | 4.5 to 30                        | 3750                     | 125                         | 3.0                        | 60         | 20                | 25                | 100           |                  |
|           | RV1S9062A |                |             | LS05          | 8                      | 4.5 to 30                        | 5000                     | 125                         | 4.1                        | 60         | 20                | 25                | 100           |                  |
|           | RV1S9262A |                |             | LSS05         | 8.2                    | 4.5 to 30                        | 5000                     | 125                         | 4.0                        | 60         | 20                | 25                | 100           |                  |
|           | PS9513    | Open Collector | Active Low  | DIP8          | -/L3:7<br>L1/L2:8      | 4.5 to 20                        | 5000                     | 100                         | 5.0                        | 500<br>750 | 650               | 650               | 15            |                  |
|           | PS9013    |                |             | LS05          | 8                      | 4.5 to 25                        | 5000                     | 125                         | 5.0                        | 500<br>750 | 650               | 650               | 50            |                  |
|           | RV1S9213A |                |             | LSS05         | 8.2                    | 4.5 to 25                        | 5000                     | 125                         | 5.0                        | 500/750    | 650               | 650               | 50            |                  |
|           | PS9313    |                |             | SDIP6         | L:7<br>L2:8            | 4.5 to 20                        | 5000                     | 110                         | 5.0                        | 500<br>750 | 650               | 650               | 15            |                  |
|           | PS9113    |                |             | S05           | 4.2                    | 4.5 to 20                        | 3750                     | 100                         | 5.0                        | 500<br>750 | 650               | 650               | 15            |                  |

## Isolation Amplifiers

| Function            | Part No. | Output | Package       |                        | Absolute Maximum Ratings    |              | Electrical Characteristics         |                 |                     |             |          |                  |               |              |
|---------------------|----------|--------|---------------|------------------------|-----------------------------|--------------|------------------------------------|-----------------|---------------------|-------------|----------|------------------|---------------|--------------|
|                     |          |        | Configuration | Creepage Distance [mm] | Isolation Voltage [Vr.m.s.] | Ta max. [°C] | Input Voltage Linearity Range [mV] | Gain typ. [V/V] | Gain Error Max. [%] | NL typ. [%] | VDD2 [V] | CMR min. [kV/μs] | fc typ. [kHz] | Output Type  |
| Isolation amplifier | PS8551A  | Analog | DIP8          | 8                      | 5000                        | 105          | -200 to 200                        | 8               | 1                   | 0.014       | 5        | 10               | 100           | Differential |
|                     | PS8352A  |        | SDIP8         | 8                      | 5000                        | 110          | -200 to 200                        | 8               | 1                   | 0.014       | 5        | 10               | 100           | Differential |

## Δ-Σ Modulators

| Function       | Part No.  | Output  | Package       |                        | Absolute Maximum Ratings    |              | Electrical Characteristics         |                     |                |          |                  |                  |                 |
|----------------|-----------|---------|---------------|------------------------|-----------------------------|--------------|------------------------------------|---------------------|----------------|----------|------------------|------------------|-----------------|
|                |           |         | Configuration | Creepage Distance [mm] | Isolation Voltage [Vr.m.s.] | Ta max. [°C] | Input Voltage Linearity Range [mV] | Gain Error Max. [%] | INL typ. [LSB] | VDD2 [V] | ENOB typ. [bits] | CMR min. [kV/μs] | fCLK typ. [MHz] |
| Δ-Σ Modulators | PS9551A   | Digital | DIP8          | 8                      | 5000                        | 105          | -200 to 200                        | 1                   | 3              | 5        | 12               | 15               | 10              |
|                | RV1S9353A |         | SDIP8         | 8                      | 5000                        | 110          | -200 to 200                        | 0.5                 | 3              | 3.3/5    | 13.8             | 15               | 10              |

## High-Speed Communication (Analog)

| Function                          | Part No.    | Speed [bps] | Output Type    | Absolute Maximum Rated Power Supply Voltage [V] | Package       |                        | Isolation Voltage [Vr.m.s.] | Ta max. [°C] | Electrical Characteristics |                  |                |                |                                   |                   |                  |     |             |          |    |
|-----------------------------------|-------------|-------------|----------------|-------------------------------------------------|---------------|------------------------|-----------------------------|--------------|----------------------------|------------------|----------------|----------------|-----------------------------------|-------------------|------------------|-----|-------------|----------|----|
|                                   |             |             |                |                                                 | Configuration | Creepage Distance [mm] |                             |              | Detector                   |                  |                |                | Coupled                           |                   |                  |     |             |          |    |
|                                   |             |             |                |                                                 |               |                        |                             |              | IOH @Vcc30V max. [μA]      | VOL max. [V]     | ICCL typ. [μA] | ICCH max. [μA] | CTR@ IF 16mA Vcc 4.5V Vo 0.4V [%] | tpHL/LH max. [ns] | CMR min. [kV/μs] |     |             |          |    |
| High-Speed Communication (Analog) | PS8101      | 1M          | Open Collector | 35                                              | S05           | 4.2                    | 3750                        | 100          | 100                        | 0.4              | 50             | 2              | 15 to 35                          | 800/1200          | 15               |     |             |          |    |
|                                   | PS8802-1/-2 |             |                |                                                 |               |                        |                             |              | S08                        | 4.0              | 2500           | 100            | 100                               | 0.4               | 100/200          | 2/4 | 15 and Over | 800/1200 | 15 |
|                                   | PS8302      |             |                |                                                 |               |                        |                             |              | SDIP6                      | L:7<br>L2:8      | 5000           | 110            | 100                               | 0.4               | 150              | 1   | 15 and Over | 800/800  | 15 |
|                                   | PS8501      |             |                |                                                 |               |                        |                             |              | DIP8                       | -L3:7<br>L1/L2:8 | 5000           | 100            | 100                               | 0.4               | 150              | 1   | 15 and Over | 800/800  | -  |
|                                   | PS8502      |             |                |                                                 |               |                        |                             |              |                            |                  |                |                | 100                               | 0.4               | 150              | 1   | 15 and Over | 800/800  | 15 |
|                                   | PS8902      |             |                |                                                 |               |                        |                             |              | LSDIP8                     | 15               | 7500           | 110            | 100                               | 0.4               | 50               | 2   | 15 to 35    | 800/1200 | 15 |

## High-Speed Communication (Digital)

| Function                           | Part No.     | Speed [bps] | Output Type    | Power Supply Voltage [V] | Package       |                        | Isolation Voltage [Vr.m.s.] | Ta max. [°C] | DC           |              |                  | AC             |                   |               |                |                  |
|------------------------------------|--------------|-------------|----------------|--------------------------|---------------|------------------------|-----------------------------|--------------|--------------|--------------|------------------|----------------|-------------------|---------------|----------------|------------------|
|                                    |              |             |                |                          | Configuration | Creepage Distance [mm] |                             |              | VOL max. [V] | VOH min. [V] | ICCL/H max. [mA] | IFHL max. [mA] | tpHL/LH max. [ns] | PWD max. [ns] | tpsk max. [ns] | CMR min. [kV/μs] |
| High-Speed Communication (Digital) | PS9122       | 1M          | Open Collector | N 2.7~3.6,<br>L 4.5~5.5  | S05           | 4.2                    | 3750                        | 100          | 0.6          | -            | 3.5/2.5          | 5.0            | 500/700           | 200           | -              | 15               |
|                                    | PS9822-1/-2  |             |                |                          | S08           | 4.0                    | 2500                        | 100          | 0.6          | -            | 3.5/2.5          | 5.0            | 500/700           | 200           | -              | -                |
|                                    | PS9124       |             |                |                          | S05           | 4.2                    | 3750                        | 110          | 0.6          | -            | 10/7             | 3.0            | 100/100           | 35            | 40             | 10               |
|                                    | PS9324       | 10M         | Open Collector | 2.7~3.6<br>& 4.5~5.5     | SDIP6         | L:7<br>L2:8            | 5000                        | 110          | 0.6          | -            | 10/7             | 3.0            | 100/100           | 35            | 40             | 15               |
|                                    | PS9924       |             |                |                          | LSDIP8        | 15                     | 7500                        | 110          | 0.6          | -            | 10/7             | 5.0            | 100/100           | 35            | 40             | 15               |
|                                    | PS9821-1/-2  |             |                |                          | S08           | 4.0                    | 2500                        | 85           | 0.6          | -            | 10/7             | 5.0            | 100/100           | 35            | 40             | 15               |
|                                    | PS9587       |             |                |                          | DIP8          | -L3:7<br>L1/L2:8       | 5000                        | 85           | 0.6          | -            | 11/8             | 5.0            | 100/100           | 50            | 60             | 15               |
|                                    | PS9317       |             |                |                          | SDIP6         | L:7<br>L2:8            | 5000                        | 85           | 0.6          | -            | 10/7             | 5.0            | 75/75             | 35            | 40             | 15               |
|                                    | PS9001       |             |                |                          | LS05          | 8.0                    | 5000                        | 125          | 0.6          | -            | 2/2              | 4.0            | 100/100           | 50            | 60             | 50               |
|                                    | PS9117A      | S05         | 4.2            | 3750                     | 85            | 0.6                    | -                           | 10/7         | 5.0          | 100/100      | 35               | 40             | 15                |               |                |                  |
|                                    | PS9817A-1/-2 | S08         | 4.0            | 2500                     | 85            | 0.6                    | -                           | 10/7         | 5.0          | 100/100      | 35               | 40             | 15                |               |                |                  |
|                                    | PS9123       | 15M         | Totem Pole     | 4.5~5.5                  | S05           | 4.2                    | 3750                        | 100          | 0.6          | 2.4          | 10/7             | 5.0            | 60/60             | 30            | -              | 15               |
|                                    | PS9151       |             |                |                          | S05           | 4.2                    | 3750                        | 100          | 0.1          | 4.0          | 5/5              | 5.0            | 60/60             | 30            | 40             | 15               |
|                                    | RV1S9160A    |             | CMOS           | 4.5~5.5                  | S05           | 4.2                    | 3750                        | 125          | 0.1          | VDD-0.1      | 2/2              | 2              | 60/60             | 20            | 25             | 50               |
|                                    | PS9851-1/-2  |             |                |                          | S08           | 4.0                    | 2500                        | 100          | 0.1          | 4.0          | 5/5              | 6.0            | 60/60             | 30            | 40             | 10               |
|                                    | RV1S9060A    |             |                |                          | LS05          | 8                      | 5000                        | 125          | 0.1          | VDD-0.1      | 2/2              | 2.2            | 60/60             | 20            | 25             | 50               |
|                                    | RV1S9260A    |             |                |                          | LSS05         | 8.2                    | 5000                        | 125          | 0.1          | VDD-0.1      | 2/2              | 2.6            | 60/60             | 20            | 25             | 50               |
| PS9351                             | SDIP6        |             |                |                          | L:7<br>L2:8   | 5000                   | 100                         | 0.1          | 4.0          | 5/5          | 5.0              | 60/60          | 30                | 40            | 15             |                  |
| RV1S9960A                          | LSDIP8       |             |                |                          | 15            | 7500                   | 110                         | 0.1          | VDD-0.1      | 2/2          | 3.8              | 60/60          | 20                | 25            | 50             |                  |

## Transistor-Output (DC Input) Single

| Function                     | Part No.   | Output Type | Package       |                        | Absolute Maximum Ratings |              |                             |              | Electrical Characteristics |              |              |               |                |
|------------------------------|------------|-------------|---------------|------------------------|--------------------------|--------------|-----------------------------|--------------|----------------------------|--------------|--------------|---------------|----------------|
|                              |            |             | Configuration | Creepage Distance [mm] | VCEO max. [V]            | IC max. [mA] | Isolation Voltage [Vr.m.s.] | Ta max. [°C] | DC                         |              | SW           |               |                |
|                              |            |             |               |                        |                          |              |                             |              | CTR %                      | tr typ. [µs] | tf typ. [µs] | ton typ. [µs] | toff typ. [µs] |
| Transistor-Output (DC Input) | PS2561D-1  | Single      | DIP4          | -/L:7<br>L1/L2:8       | 80                       | 50           | 5000                        | 110          | 50 to 400                  | 3            | 5            | –             | –              |
|                              | PS2561F-1  |             | DIP4          | 7                      | 80                       | 50           | 5000                        | 110          | 300 to 600                 | 5            | 7            | –             | –              |
|                              | PS2514-1   |             | DIP4          | 7                      | 40                       | 20           | 5000                        | 100          | 50 to 200                  | –            | –            | 15            | 15             |
|                              | PS2381-1   |             | LSOP4         | 8                      | 80                       | 50           | 5000                        | 115          | 50 to 400                  | 4            | 5            | –             | –              |
|                              | RV1S2281A  |             | LSSOP         | 8.2                    | 80                       | 30           | 5000                        | 115          | 50 to 400                  | 4            | 5            | –             | –              |
|                              | PS2701A-1  |             | SOP4          | 5                      | 70                       | 30           | 3750                        | 100          | 50 to 300                  | 5            | 7            | 8             | 10             |
|                              | PS2761B-1  |             | SOP4          | 5                      | 70                       | 50           | 3750                        | 110          | 50 to 400                  | 4            | 5            | 8             | 5              |
|                              | PS2703-1   |             | SOP4          | 5                      | 120                      | 30           | 3750                        | 100          | 50 to 400                  | 10           | 10           | 13            | 11             |
|                              | PS2711-1   |             | SOP4          | 5                      | 40                       | 40           | 3750                        | 100          | 100 to 400                 | 4            | 5            | –             | –              |
|                              | PS2801C-1  |             | SSOP4         | 4.5                    | 80                       | 30           | 2500                        | 100          | 50 to 400                  | 5            | 7            | 10            | 7              |
|                              | PS2801C-4  |             | SSOP16        | 4.5                    | 80                       | 30           | 2500                        | 100          | 50 to 400                  | 5            | 7            | 10            | 7              |
|                              | PS2861B-1  |             | SSOP4         | 5                      | 70                       | 50           | 3750                        | 110          | 50 to 300                  | 4            | 5            | 5             | 5              |
|                              | PS2811-1   |             | SOP4          | 4.5                    | 40                       | 40           | 2500                        | 100          | 100 to 400                 | 4            | 5            | 7             | 5              |
|                              | PS2811-4   |             | SSOP16        | 4.5                    | 40                       | 40           | 2500                        | 100          | 100 to 400                 | 4            | 5            | 7             | 5              |
|                              | RV1S2211A  |             | LSSOP         | 8.2                    | 40                       | 40           | 5000                        | 115          | 100 to 400                 | 4            | 5            | –             | –              |
|                              | PS2841-4A  |             | SSOP12        | 4                      | 70                       | 20           | 1500                        | 100          | 100 to 400                 | –            | –            | 20            | 110            |
|                              | PS2841-4B  |             | SSOP12        | 4                      | 70                       | 20           | 1500                        | 100          | 100 to 400                 | –            | –            | 20            | 110            |
|                              | PS2911-1   |             | Flat Leads    | 4                      | 40                       | 40           | 2500                        | 100          | 100 to 400                 | 5            | 10           | 40            | 120            |
| PS2913-1                     | Flat Leads | 4           | 120           | 30                     | 2500                     | 100          | 50 to 200                   | 10           | 10                         | 80           | 50           |               |                |

## Transistor-Output (DC Input) Darlington

| Function                     | Part No. | Output Type | Absolute Maximum Ratings |            | Package       |                        | Isolation Voltage [Vr.m.s.] | Ta max. [°C] | Electrical Characteristics |              |             |              |              |               |                |
|------------------------------|----------|-------------|--------------------------|------------|---------------|------------------------|-----------------------------|--------------|----------------------------|--------------|-------------|--------------|--------------|---------------|----------------|
|                              |          |             | VCEO [V]                 | IC [mA/ch] | Configuration | Creepage Distance [mm] |                             |              | DC                         |              |             | SW           |              |               |                |
|                              |          |             |                          |            |               |                        |                             |              | CTR min. [%]               | CTR max. [%] | VCE SAT [V] | tr typ. [µs] | tf typ. [µs] | ton typ. [µs] | toff typ. [µs] |
| Transistor-Output (DC Input) | PS2802-1 | Darlington  | 40                       | 90         | SSOP4         | 4.5                    | 2500                        | 100          | 200                        | –            | 1.0         | 200          | 200          | –             | –              |
|                              | PS2802-4 |             |                          | 100        | SSOP16        | 4.5                    | 2500                        | 100          | 200                        | –            | 1.0         | 200          | 200          | –             | –              |
|                              | PS2562-1 |             |                          | 200        | DIP4          | 7                      | 5000                        | 100          | 200                        | –            | 1.0         | 100          | 100          | –             | –              |
|                              | PS2702-1 |             |                          | 200        | SOP4          | 5                      | 3750                        | 100          | 200                        | –            | 1.0         | 70           | 60           | 90            | 60             |
|                              | PS2833-1 |             | 350                      | 60         | SSOP4         | 4.5                    | 2500                        | 100          | 400                        | 4500         | 1.0         | 20           | 5            | –             | –              |
|                              | PS2833-4 |             |                          | 60         | SSOP16        | 4.5                    | 2500                        | 100          | 400                        | 4500         | 1.0         | 20           | 5            | –             | –              |
|                              | PS2535-1 |             |                          | 120        | DIP4          | 7                      | 5000                        | 100          | 400                        | 5500         | 1.0         | 18           | 5            | –             | –              |
|                              | PS2533-1 |             |                          | 150        | DIP4          | 7                      | 5000                        | 100          | 1500                       | 6500         | 1.0         | 100          | 100          | –             | –              |
|                              | PS2733-1 |             |                          | 150        | SOP4          | 5                      | 2500                        | 100          | 1500                       | –            | 1.0         | 100          | 100          | –             | –              |
|                              | PS2933-1 |             |                          | 60         | Flat Leads    | 4                      | 2500                        | 100          | 400                        | 4500         | 1.0         | 20           | 5            | –             | –              |

## Transistor-Output (AC Input)

| Function                     | Part No.  | Output Type | Package       |                        | Absolute Maximum Ratings |              |                             |              | Electrical Characteristics |              |              |               |                |
|------------------------------|-----------|-------------|---------------|------------------------|--------------------------|--------------|-----------------------------|--------------|----------------------------|--------------|--------------|---------------|----------------|
|                              |           |             | Configuration | Creepage Distance [mm] | VCEO max. [V]            | IC max. [mA] | Isolation Voltage [Vr.m.s.] | Ta max. [°C] | DC                         |              | SW           |               |                |
|                              |           |             |               |                        |                          |              |                             |              | CTR %                      | tr typ. [µs] | tf typ. [µs] | ton typ. [µs] | toff typ. [µs] |
| Transistor-Output (AC Input) | PS2565-1  | Single      | DIP4          | 7                      | 80                       | 50           | 5000                        | 100          | 80 to 400                  | 3            | 5            | –             | –              |
|                              | PS2705A-1 |             | SOP4          | 5                      | 70                       | 30           | 3750                        | 100          | 50 to 300                  | 5            | 7            | 8             | 10             |
|                              | PS2715-1  |             | SOP4          | 5                      | 40                       | 40           | 3750                        | 100          | 100 to 400                 | 4            | 5            | –             | –              |
|                              | PS2805C-1 |             | SSOP4         | 4.5                    | 80                       | 30           | 2500                        | 100          | 50 to 400                  | 5            | 7            | 10            | 7              |
|                              | PS2805C-4 |             | SSOP16        | 4.5                    | 80                       | 30           | 2500                        | 100          | 50 to 400                  | 5            | 7            | 10            | 7              |
|                              | PS2815-1  |             | SSOP4         | 4.5                    | 40                       | 40           | 2500                        | 100          | 100 to 400                 | 4            | 5            | 7             | 5              |
|                              | PS2815-4  |             | SSOP16        | 4.5                    | 40                       | 40           | 2500                        | 100          | 100 to 400                 | 4            | 5            | 7             | 5              |
|                              | RV1S2285A |             | LSSOP         | 8.2                    | 80                       | 30           | 5000                        | 115          | 50 to 400                  | 4            | 5            | –             | –              |
|                              | PS2845-4A |             | SSOP12        | 4                      | 70                       | 20           | 1500                        | 100          | 100 to 400                 | –            | –            | 20            | 110            |
|                              | PS2915-1  |             | Flat Leads    | 4                      | 40                       | 40           | 2500                        | 100          | 100 to 400                 | 5            | 10           | 40            | 120            |
|                              | PS2506-1  |             | Darlington    | DIP4                   | 7                        | 40           | 200                         | 5000         | 100                        | 200 min.     | 100          | 100           | –              |
|                              | PS2706-1  | SOP4        |               | 5                      | 40                       | 200          | 3750                        | 100          | 200 min.                   | 200          | 200          | –             | –              |

# PACKAGE DIMENSIONS 1

Unit : mm

| LS05      | DIP8      | SDIP6 (L)  |
|-----------|-----------|------------|
|           |           |            |
| LSDIP8    | DIP8 (L1) | SDIP6 (L2) |
|           |           |            |
| S016      | DIP8 (L3) | SDIP8 (L)  |
|           |           |            |
| DIP8 (L4) | DIP8 (L2) | SDIP8 (L2) |
|           |           |            |

# PACKAGE DIMENSIONS 2

Unit : mm

| S05  | DIP4      | SSOP4     |
|------|-----------|-----------|
|      |           |           |
| S08  | DIP4 (L)  | SSOP16    |
|      |           |           |
| SOP  | DIP4 (L1) | SSOP12    |
|      |           |           |
| LSOP | DIP4 (L2) | Flat lead |
|      |           |           |

# PACKAGE DIMENSIONS 3

Unit : mm



# PACKAGE MARKING

| LS05                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | S05                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>R : An initial of "Renesas"<br/>           9031 : Part Number<br/>           N340 : Assembly Lot No.</p> <p>N 3 40<br/>           Weekly Serial Code<br/>           Last one-digit of assembled year<br/>           Rank Code</p> <p>○ : No.1 pin mark</p>                                                                                                                                  |  <p>9124 : Part Number<br/>           N231 : Assembly Lot No.</p> <p>N 2 31<br/>           Weekly Serial Code<br/>           Last one-digit of assembled year<br/>           Rank Code</p> <p>Ⓜ : Pb free<br/>           Ⓞ : No.1 pin mark<br/>           An initial of "Renesas"<br/>           (Carved marking)</p>         |
| LSDIP8                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SDIP6                                                                                                                                                                                                                                                                                                                                                                                                           |
|  <p>R : An initial of "Renesas"<br/>           9905 : Part Number<br/>           N131 : Assembly Lot No.</p> <p>N 1 31<br/>           Weekly Serial Code<br/>           Last one-digit of assembled year<br/>           Rank Code</p> <p>○ : No.1 pin mark</p>                                                                                                                                 |  <p>R : An initial of "Renesas"<br/>           9331 : Part Number<br/>           N320 : Assembly Lot No.</p> <p>N 3 20<br/>           Weekly Serial Code<br/>           Last one-digit of assembled year<br/>           Rank Code</p> <p>○ : No.1 pin mark</p>                                                               |
| S08                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | S016                                                                                                                                                                                                                                                                                                                                                                                                            |
|  <p>9817A-1 : Part Number<br/>           NT131 : Assembly Lot No.</p> <p>N T 1 31<br/>           Weekly Serial Code<br/>           Last one-digit of assembled year<br/>           Internal Symbol<br/>           (T:Pb free, Ni/Pd/Au plating on the electrode)<br/>           Rank Code</p> <p>Ⓞ : No.1 pin mark<br/>           An initial of "Renesas"<br/>           (Carved marking)</p> |  <p>R : An initial of "Renesas"<br/>           9402 : Part Number<br/>           NT231 : Assembly Lot No.</p> <p>N T 2 31<br/>           Weekly Serial Code<br/>           Last one-digit of assembled year<br/>           Internal Symbol<br/>           (T:Pb free)<br/>           Rank Code</p> <p>○ : No.1 pin mark</p> |
| SDIP8                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | DIP8                                                                                                                                                                                                                                                                                                                                                                                                            |
|  <p>R : An initial of "Renesas"<br/>           9332 : Part Number<br/>           N340 : Assembly Lot No.</p> <p>N 3 04<br/>           Weekly Serial Code<br/>           Last one-digit of assembled year<br/>           Rank Code</p> <p>○ : No.1 pin mark</p>                                                                                                                                |  <p>R : An initial of "Renesas"<br/>           9531 : Part Number<br/>           NT331 : Assembly Lot No.</p> <p>N T 3 31<br/>           Weekly Serial Code<br/>           Last one-digit of assembled year<br/>           Internal Symbol<br/>           (T:Pb free)<br/>           Rank Code</p> <p>○ : No.1 pin mark</p> |

DIP4 SOP



R : An initial of "Renesas"  
 2561D : Part Number as excluding "PS2"  
 NR031 : Assembly Lot No.  
 N R 0 31  
 Weekly Serial Code  
 Last one-digit of assembled year  
 Internal Symbol  
 (R : Assembly in Japan, Y: Assembly in TAIWAN)  
 Rank Code  
 ○ : No.1 pin mark



R : An initial of "Renesas"  
 701A : Part Number as excluding "PS2"  
 N301 : Assembly Lot No.  
 N 3 01  
 Weekly Serial Code  
 Last one-digit of assembled year  
 Rank Code  
 ○ : No.1 pin mark

|                   |        |        |       |       |
|-------------------|--------|--------|-------|-------|
| Assembled Country | TAIWAN | TAIWAN | JAPAN | JAPAN |
| Halogen Free      |        | ○      |       | ○     |
| *1, *2: Marking   |        |        |       |       |

SSOP4 SSOP16



R1C : An initial of "Renesas" and Part Number  
 R 1C  
 Last 2 digits of Part Number (\*1)  
 \*1: When the second digit from bottom of Part Number is "0", only marked last 1 digit.  
 An initial of "Renesas"  
 301 : Assembly Lot No.  
 3 01  
 Weekly Serial Code  
 Last one-digit of assembled year

|                   |        |        |       |       |
|-------------------|--------|--------|-------|-------|
| Assembled Country | TAIWAN | TAIWAN | JAPAN | JAPAN |
| Halogen Free      |        | ○      |       | ○     |
| *2: Marking       |        |        |       |       |



R : An initial of "Renesas"  
 PS2801C-4 : Part Number  
 NL301 : Assembly Lot No.  
 N 3 01  
 Weekly Serial Code  
 Last one-digit of assembled year  
 Internal Symbol  
 L: Pb Free  
 Rank Code  
 ○ : No.1 pin mark  
 □ : Assembled Country

LSOP Flat lead



R : An initial of "Renesas"  
 2381 : Part Number as excluding "PS"  
 N031 : Assembly Lot No.  
 N 0 31  
 Weekly Serial Code  
 Last one-digit of assembled year  
 Rank Code  
 ○ : No.1 pin mark



R : An initial of "Renesas"  
 11 : Part Number as excluding "PS29"  
 ex) PS2911 -> 11  
 601 : Assembly Lot No.  
 6 01  
 Weekly Serial Code  
 Last one-digit of assembled year  
 = : Pb free

SSOP12 LSSOP / LSS05



R : An initial of "Renesas"  
 2841A : Part Number as underlined of PA2841-4A  
 NL601 : Assembly Lot No.  
 N L 6 01  
 Weekly Serial Code  
 Last one-digit of assembled year  
 Internal Symbol  
 L: Pb Free  
 Rank Code  
 ○ : No.1 pin mark



R : An initial of "Renesas"  
 2281 : Part Number  
 9261 : Part Number  
 N744 : Assembly Lot No.  
 N 7 44  
 Weekly Serial Code  
 Last one-digit of assembled year  
 Rank Code  
 ○ : No.1 pin mark

# PACKAGE STRUCTURE 1

| Package            |              | LSDIP8                                  | LS05                                                                        | S05                                                                                                        | S016   | DIP8 (L4)              | SDIP8 (L2)               |  |
|--------------------|--------------|-----------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------|------------------------|--------------------------|--|
| Structure          |              |                                         |                                                                             |                                                                                                            |        |                        |                          |  |
| Package            |              | LSDIP8                                  | LS05                                                                        | S05                                                                                                        | S016   | DIP8 (L4)              | SDIP8 (L2)               |  |
| Air Distance       | [mm]         | 14.5                                    | 8                                                                           | 4.2                                                                                                        | 8      | 8                      | 8                        |  |
| Creepage           | [mm]         | 14.5                                    | 8                                                                           | 4.2                                                                                                        | 8      | 8                      | 8                        |  |
| Isolation Distance | [mm]         | 0.4                                     | 0.15                                                                        | 0.2                                                                                                        | 0.4    | 0.4                    | 0.4                      |  |
| CTI                | [-]          | 175                                     | 400                                                                         | 175                                                                                                        | 175    | 175                    | 175                      |  |
| Isolation Voltage  | [Vr.m.s.]    | 7500                                    | 5000                                                                        | 3750                                                                                                       | 5000   | 5000                   | 5000                     |  |
| VIORM              | [Vpeak]      | 1600                                    | 1130                                                                        | 707                                                                                                        | 1130   | 1130                   | 1130 / 1500 *            |  |
| VIOTM              | [Vpeak]      | 12000                                   | 8000                                                                        | 6000                                                                                                       | 8000   | 8000                   | 8000                     |  |
| Part Number        | VDE (Option) | PS9905<br>PS9924<br>PS8902<br>RV1S9960A | PS9031<br>PS9009<br>PS9013<br>PS9001<br>RV1S9060A<br>RV1S9061A<br>RV1S9062A | PS9113<br>PS9151<br>PS9123<br>PS9117A<br>PS9124<br>PS9122<br>PS8101<br>RV1S9160A<br>RV1S9161A<br>RV1S9162A | PS9402 | PS8551AL4<br>PS9551AL4 | PS8352AL2<br>* RV1S9353A |  |

| Package            |              | DIP8                                                     | DIP8 (L1)                                                            | DIP8 (L3)                                                            | DIP8 (L2)                                                            | SDIP6 (L)                                                                                        | SDIP6 (L2)                                                                                                | SDIP8 (L) | SDIP8 (L2) | S08                                                                                            |
|--------------------|--------------|----------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------|------------|------------------------------------------------------------------------------------------------|
| Structure          |              |                                                          |                                                                      |                                                                      |                                                                      |                                                                                                  |                                                                                                           |           |            |                                                                                                |
| Package            |              | DIP8                                                     | DIP8 (L1)                                                            | DIP8 (L3)                                                            | DIP8 (L2)                                                            | SDIP6 (L)                                                                                        | SDIP6 (L2)                                                                                                | SDIP8 (L) | SDIP8 (L2) | S08                                                                                            |
| Air Distance       | [mm]         | 7                                                        | 8                                                                    | 7                                                                    | 8                                                                    | 7                                                                                                | 8                                                                                                         | 7         | 8          | 4                                                                                              |
| Creepage           | [mm]         | 7                                                        | 8                                                                    | 7                                                                    | 8                                                                    | 7                                                                                                | 8                                                                                                         | 7         | 8          | 4                                                                                              |
| Isolation Distance | [mm]         | 0.4                                                      | 0.4                                                                  | 0.4                                                                  | 0.4                                                                  | 0.4                                                                                              | 0.4                                                                                                       | 0.4       | 0.4        | 0.2                                                                                            |
| CTI                | [-]          | 175                                                      | 175                                                                  | 175                                                                  | 175                                                                  | 175                                                                                              | 175                                                                                                       | 175       | 175        | 175                                                                                            |
| Isolation Voltage  | [Vr.m.s.]    | 5000                                                     | 5000                                                                 | 5000                                                                 | 5000                                                                 | 5000                                                                                             | 5000                                                                                                      | 5000      | 5000       | 2500                                                                                           |
| VIORM              | [Vpeak]      | 1130                                                     | 1130                                                                 | 1130                                                                 | 1130                                                                 | 1130                                                                                             | 1130                                                                                                      | 1130      | 1130       | 566                                                                                            |
| VIOTM              | [Vpeak]      | 8000                                                     | 8000                                                                 | 8000                                                                 | 8000                                                                 | 8000                                                                                             | 8000                                                                                                      | 8000      | 8000       | 4000                                                                                           |
| Part Number        | VDE (Option) | PS9531<br>PS9506<br>PS9513<br>PS9587<br>PS8501<br>PS8502 | PS9531L1<br>PS9506L1<br>PS9513L1<br>PS9587L1<br>PS8501L1<br>PS8502L1 | PS9531L3<br>PS9506L3<br>PS9513L3<br>PS9587L3<br>PS8501L3<br>PS8502L3 | PS9531L2<br>PS9506L2<br>PS9513L2<br>PS9587L2<br>PS8501L2<br>PS8502L2 | PS9307AL<br>PS9331L<br>PS9317L<br>PS9313L<br>PS9303L<br>PS9309L<br>PS9351L<br>PS9324L<br>PS8302L | PS9307AL2<br>PS9331L2<br>PS9317L2<br>PS9313L2<br>PS9303L2<br>PS9309L2<br>PS9351L2<br>PS9324L2<br>PS8302L2 | PS9332L   | PS9332L2   | PS9817A-1<br>PS9817A-2<br>PS9851-1<br>PS9851-2<br>PS9821-1<br>PS9821-2<br>PS9822-1<br>PS9822-2 |

| Package            |               | DIP4                                                                              |          |          | DIP4 (L1)   |                          | DIP4 (L)                                          |                                                                                     |           | DIP4 (L2)   |                          | LSOP     |  |
|--------------------|---------------|-----------------------------------------------------------------------------------|----------|----------|-------------|--------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------|-----------|-------------|--------------------------|----------|--|
| Structure          |               |  |          |          |             |                          |                                                   |  |           |             |                          |          |  |
| Package            |               | DIP4                                                                              |          |          | DIP4 (L1)   |                          | DIP4 (L)                                          |                                                                                     |           | DIP4 (L2)   |                          | LSOP     |  |
| Air Distance       | [mm]          | 7                                                                                 | 7        | 7        | 8           | 7                        | 7                                                 | 7                                                                                   | 7         | 8           | 7                        | 8        |  |
| Creepage           | [mm]          | 7                                                                                 | 7        | 7        | 8           | 7                        | 7                                                 | 7                                                                                   | 7         | 8           | 7                        | 8        |  |
| Isolation Distance | [mm]          | 0.4                                                                               | 0.3      | 0.3      | 0.4         | 0.4                      | 0.4                                               | 0.3                                                                                 | 0.3       | 0.4         | 0.4                      | 0.4      |  |
| CTI                | [-]           | 175                                                                               | 175      | 175      | 175         | 175                      | 175                                               | 175                                                                                 | 175       | 175         | 175                      | 175      |  |
| Isolation Voltage  | [Vr.m.s.]     | 5000                                                                              | 5000     | 5000     | 5000        | 5000                     | 5000                                              | 5000                                                                                | 5000      | 5000        | 5000                     | 5000     |  |
| VIORM              | [Vpeak]       | 890                                                                               | 890      | —        | 1130        | 890                      | 890                                               | 890                                                                                 | —         | 1130        | 890                      | 1130     |  |
| VIOTM              | [Vpeak]       | 8000                                                                              | 8000     | —        | 8000        | 8000                     | 8000                                              | 8000                                                                                | —         | 8000        | 8000                     | 8000     |  |
| Part Number        | VDE (Option)  | PS2561D-1<br>PS2533-1<br>PS2535-1<br>PS2565-1                                     | PS2514-1 |          | PS2561DL1-1 | PS2562L1-1<br>PS2565L1-1 | PS2561DL-1<br>PS2533L-1<br>PS2535L-1<br>PS2565L-1 | PS2514L-1                                                                           |           | PS2561DL2-1 | PS2562L2-1<br>PS2565L2-1 | PS2381-1 |  |
|                    | No VDE Option | PS2561F-1                                                                         |          | PS2506-1 |             |                          | PS2561FL-1                                        |                                                                                     | PS2506L-1 |             |                          |          |  |

| Package            |               | SOP                                                                                 |          |           | SSOP4                                                                   |           | SSOP16                                                                  | SSOP12                                                                               |  | Flat lead                                                                             |  |
|--------------------|---------------|-------------------------------------------------------------------------------------|----------|-----------|-------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|--|
| Structure          |               |  |          |           |                                                                         |           |                                                                         |  |  |  |  |
| Package            |               | SOP                                                                                 |          |           | SSOP4                                                                   |           | SSOP16                                                                  | SSOP12                                                                               |  | Flat lead                                                                             |  |
| Air Distance       | [mm]          | 5                                                                                   | 5        | 5         | 4.5                                                                     | 5         | 4.5                                                                     | 4                                                                                    |  | 4                                                                                     |  |
| Creepage           | [mm]          | 5                                                                                   | 5        | 5         | 4.5                                                                     | 5         | 4.5                                                                     | 4                                                                                    |  | 4                                                                                     |  |
| Isolation Distance | [mm]          | 0.3                                                                                 | 0.3      | 0.4       | 0.1                                                                     | 0.4       | 0.1                                                                     | 0.4                                                                                  |  | 0.4                                                                                   |  |
| CTI                | [-]           | 175                                                                                 | 175      | 175       | 175                                                                     | 175       | 175                                                                     | 175                                                                                  |  | 175                                                                                   |  |
| Isolation Voltage  | [Vr.m.s.]     | 3750                                                                                | 2500     | 3750      | 2500                                                                    | 3750      | 2500                                                                    | 1500                                                                                 |  | 2500                                                                                  |  |
| VIORM              | [Vpeak]       | 707                                                                                 | 707      | 707       | 705                                                                     | 710       | 705                                                                     | —                                                                                    |  | 570                                                                                   |  |
| VIOTM              | [Vpeak]       | 6000                                                                                | 4000     | 6000      | 6000                                                                    | 6000      | 6000                                                                    | —                                                                                    |  | 4000                                                                                  |  |
| Part Number        | VDE (Option)  | PS2701A-1<br>PS2703-1<br>PS2702-1<br>PS2705A-1<br>PS2706-1<br>PS2711-1<br>PS2715-1  | PS2733-1 | PS2761B-1 | PS2801C-1<br>PS2811-1<br>PS2833-1<br>PS2802-1<br>PS2805C-1<br>PS2815C-1 | PS2861B-1 | PS2801C-4<br>PS2811-4<br>PS2833-4<br>PS2802-4<br>PS2805C-4<br>PS2815C-4 |                                                                                      |  | PS2911-1<br>PS2913-1<br>PS2915-1<br>PS2933-1                                          |  |
|                    | No VDE Option |                                                                                     |          |           |                                                                         |           |                                                                         | PS2841-4A<br>PS2841-4B<br>PS2845-4A                                                  |  |                                                                                       |  |

# PACKAGE STRUCTURE 2

| Package            |              | LSS05                                                                                          | LSS0P                                                                                                  |
|--------------------|--------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Structure          |              | <p>Outer Epoxy Resin<br/>Inner Epoxy Resin<br/>LED<br/>Potting Resin<br/>Photo IC<br/>Lead</p> | <p>Outer Epoxy Resin<br/>Inner Epoxy Resin<br/>LED<br/>Potting Resin<br/>Photo Transistor<br/>Lead</p> |
| Package            |              | LSS05                                                                                          | LSS0P                                                                                                  |
| Air Distance       | [mm]         | 8.2                                                                                            | 8.2                                                                                                    |
| Creepage           | [mm]         | 8.2                                                                                            | 8.2                                                                                                    |
| Isolation Distance | [mm]         | 0.15                                                                                           | 0.15                                                                                                   |
| CTI                | [-]          | 400                                                                                            | 400                                                                                                    |
| Isolation Voltage  | [Vr.m.s.]    | 5000                                                                                           | 5000                                                                                                   |
| VIORM              | [Vpeak]      | 1075                                                                                           | 1100                                                                                                   |
| VIORM              | [Vpeak]      | 8000                                                                                           | 8000                                                                                                   |
| Part Number        | VDE (Option) | RV1S9207A<br>RV1S9209A<br>RV1S9213A<br>RV1S9231A<br>RV1S9260A<br>RV1S9261A<br>RV1S9262A        | RV1S2211A<br>RV1S2281A<br>RV1S2285A                                                                    |

# SAFETY STANDARD APPROVAL LIST 1

Visit our website.



1. ●: certified, R: reinforced insulation, S: supplementary insulation, B: basic insulation  
 2. A special ordering number is required for VDE-conformant products.

<https://www.renesas.com/products/interface-connectivity/optoelectronics/photocouplers-optocouplers-safety-standards-classification-chart-ul-csa-bsi-vde-approval>

| Part Number                                       | Safety Standards                   |        |                      |                       |                                         |                       |                      |                       |                                          |                       |
|---------------------------------------------------|------------------------------------|--------|----------------------|-----------------------|-----------------------------------------|-----------------------|----------------------|-----------------------|------------------------------------------|-----------------------|
|                                                   | UL                                 |        |                      |                       | CSA                                     |                       | BSI                  |                       | VDE                                      |                       |
|                                                   | UL1577<br>Single/Double Protection |        |                      |                       | CAN/CSA C22.2<br>62368-1<br>IEC 62368-1 |                       | BS EN 62368-1        |                       | DIN EN 60747-5-5<br>DIN EN IEC 60747-5-5 |                       |
|                                                   | Single                             | Double | Assembly<br>in JAPAN | Assembly<br>in TAIWAN | Assembly<br>in JAPAN                    | Assembly<br>in TAIWAN | Assembly<br>in JAPAN | Assembly<br>in TAIWAN | Assembly<br>in JAPAN                     | Assembly<br>in TAIWAN |
| RV1S2211A                                         | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                        | —                     |
| RV1S2281A                                         | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                        | —                     |
| RV1S2285A                                         | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                        | —                     |
| PS2381-1                                          | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                        | —                     |
| PS2506-1, PS2506L-1                               | ●                                  | ●      | ●                    | —                     | —                                       | —                     | —                    | —                     | —                                        | —                     |
| PS2514-1, PS2514L-1                               | ●                                  | ●      | ●                    | ●                     | ●B/R                                    | ●B/R                  | —                    | —                     | ●                                        | ●                     |
| PS2533-1, PS2533L-1                               | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | ●R                   | —                     | ●                                        | —                     |
| PS2535-1, PS2535L-1                               | ●                                  | ●      | ●                    | —                     | —                                       | —                     | ●R                   | —                     | ●                                        | —                     |
| PS2561D-1, PS2561DL-1<br>PS2561DL1-1, PS2561DL2-1 | ●                                  | ●      | ●                    | ●                     | ●R                                      | ●R                    | ●R                   | ●R                    | ●                                        | ●                     |
| PS2561F-1, PS2561FL-1                             | ●                                  | ●      | ●                    | ●                     | —                                       | —                     | —                    | —                     | —                                        | —                     |
| PS2562-1, PS2562L-1<br>PS2562L1-1, PS2562L2-1     | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | ●R                   | —                     | ●                                        | —                     |
| PS2565-1, PS2565L-1<br>PS2565L1-1, PS2565L2-1     | ●                                  | ●      | ●                    | ●                     | ●R                                      | ●R                    | ●R                   | ●R                    | ●                                        | ●                     |
| PS2701A-1                                         | ●                                  | —      | ●                    | ●                     | ●B/S                                    | ●B/S                  | ●B/S                 | ●B/S                  | ●                                        | ●                     |
| PS2702-1                                          | ●                                  | —      | ●                    | ●                     | ●B/S                                    | ●B/S                  | ●B/S                 | ●B/S                  | ●                                        | ●                     |
| PS2703-1                                          | ●                                  | —      | ●                    | ●                     | ●B/S                                    | ●B/S                  | ●B/S                 | ●B/S                  | ●                                        | ●                     |
| PS2705A-1                                         | ●                                  | —      | ●                    | ●                     | ●B/S                                    | ●B/S                  | —                    | —                     | ●                                        | ●                     |
| PS2706-1                                          | ●                                  | —      | ●                    | —                     | ●B/S                                    | —                     | ●B/S                 | —                     | ●                                        | —                     |
| PS2711-1                                          | ●                                  | —      | ●                    | —                     | ●B/S                                    | —                     | —                    | —                     | ●                                        | —                     |
| PS2715-1                                          | ●                                  | —      | ●                    | —                     | ●B/S                                    | —                     | —                    | —                     | ●                                        | —                     |
| PS2733-1                                          | ●                                  | —      | ●                    | —                     | ●B/S                                    | —                     | ●B/S                 | —                     | ●                                        | —                     |
| PS2761B-1                                         | ●                                  | ●      | ●                    | ●                     | ●R                                      | ●R                    | ●R                   | ●R                    | ●                                        | ●                     |
| PS2801C-1                                         | ●                                  | —      | ●                    | ●                     | ●B                                      | ●B                    | ●B/S                 | ●B/S                  | ●                                        | ●                     |
| PS2801C-4                                         | ●                                  | —      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                        | —                     |
| PS2802-1, -4                                      | ●                                  | —      | ●                    | —                     | ●B                                      | —                     | ●B/S                 | —                     | ●                                        | —                     |
| PS2805C-1                                         | ●                                  | —      | ●                    | ●                     | ●B                                      | ●B                    | ●B/S                 | ●B/S                  | ●                                        | ●                     |
| PS2805C-4                                         | ●                                  | —      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                        | —                     |
| PS2811-1                                          | ●                                  | —      | ●                    | ●                     | ●B                                      | ●B                    | —                    | —                     | ●                                        | ●                     |
| PS2811-4                                          | ●                                  | —      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                        | —                     |
| PS2815-1                                          | ●                                  | —      | ●                    | ●                     | ●B                                      | ●B                    | —                    | —                     | ●                                        | ●                     |
| PS2815-4                                          | ●                                  | —      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                        | —                     |
| PS2833-1                                          | ●                                  | —      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                        | —                     |
| PS2833-4                                          | ●                                  | —      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                        | —                     |
| PS2841-4A, -4B                                    | ●                                  | —      | ●                    | —                     | —                                       | —                     | —                    | —                     | —                                        | —                     |
| PS2845-4A                                         | ●                                  | —      | ●                    | —                     | —                                       | —                     | —                    | —                     | —                                        | —                     |
| PS2861B-1                                         | ●                                  | —      | ●                    | ●                     | ●R                                      | ●R                    | ●R                   | ●R                    | ●                                        | ●                     |
| PS2911-1                                          | ●                                  | —      | ●                    | —                     | —                                       | —                     | ●S                   | —                     | ●                                        | —                     |
| PS2913-1                                          | ●                                  | —      | ●                    | —                     | —                                       | —                     | ●S                   | —                     | ●                                        | —                     |
| PS2915-1                                          | ●                                  | —      | ●                    | —                     | —                                       | —                     | ●S                   | —                     | ●                                        | —                     |
| PS2933-1                                          | ●                                  | —      | ●                    | —                     | —                                       | —                     | ●S                   | —                     | ●                                        | —                     |
| PS8101                                            | ●                                  | —      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                        | —                     |
| PS8302L, PS8302L2                                 | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                        | —                     |
| PS8352AL2                                         | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                        | —                     |

# SAFETY STANDARD APPROVAL LIST 2

1. ●: certified, R: reinforced insulation, S: supplementary insulation, B: basic insulation

2. A special ordering number is required for VDE-conformant products.

| Part Number                            | Safety Standards                   |        |                      |                       |                                         |                       |                      |                       |                                       |                       |
|----------------------------------------|------------------------------------|--------|----------------------|-----------------------|-----------------------------------------|-----------------------|----------------------|-----------------------|---------------------------------------|-----------------------|
|                                        | UL                                 |        |                      |                       | CSA                                     |                       | BSI                  |                       | VDE                                   |                       |
|                                        | UL1577<br>Single/Double Protection |        |                      |                       | CAN/CSA C22.2<br>62368-1<br>IEC 62368-1 |                       | BS EN 62368-1        |                       | DIN EN 60747-5-5<br>DIN IEC 60747-5-5 |                       |
|                                        | Single                             | Double | Assembly<br>in JAPAN | Assembly<br>in TAIWAN | Assembly<br>in JAPAN                    | Assembly<br>in TAIWAN | Assembly<br>in JAPAN | Assembly<br>in TAIWAN | Assembly<br>in JAPAN                  | Assembly<br>in TAIWAN |
| PS8501, PS8501L1<br>PS8501L2, PS8501L3 | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | ●R                   | —                     | ●                                     | —                     |
| PS8502, PS8502L1<br>PS8502L2, PS8502L3 | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | ●R                   | —                     | ●                                     | —                     |
| PS8551AL4                              | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS8802-1, -2                           | ●                                  | —      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS8902                                 | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9001                                 | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9009                                 | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9013                                 | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9031                                 | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9060A                              | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9061A                              | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9062A                              | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9113                                 | ●                                  | —      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9117A                                | ●                                  | —      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9122                                 | ●                                  | —      | ●                    | —                     | —                                       | —                     | —                    | —                     | ●                                     | —                     |
| PS9123                                 | ●                                  | —      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9124                                 | ●                                  | —      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9151                                 | ●                                  | —      | ●                    | —                     | —                                       | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9160A                              | ●                                  | ●      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9161A                              | ●                                  | ●      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9162A                              | ●                                  | ●      | ●                    | —                     | ●B                                      | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9207A                              | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9209A                              | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9213A                              | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9231A                              | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9260A                              | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9261A                              | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9262A                              | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9303L, PS9303L2                      | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9307AL, PS9307AL2                    | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9309L, PS9309L2                      | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9313L, PS9313L2                      | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9317L, PS9317L2                      | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9324L, PS9324L2                      | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9331L, PS9331L2                      | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9332L, PS9332L2                      | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9351L, PS9351L2                      | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9352AL2                              | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| RV1S9353A                              | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9402                                 | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9506, PS9506L1<br>PS9506L2, PS9506L3 | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | —                    | —                     | ●                                     | —                     |
| PS9513, PS9513L1<br>PS9513L2, PS9513L3 | ●                                  | ●      | ●                    | —                     | ●R                                      | —                     | ●R                   | —                     | ●                                     | —                     |

# SAFETY STANDARD APPROVAL LIST 3

Visit our website.



<https://www.renesas.com/products/interface-connectivity/optoelectronics/photocouplers-optocouplers-safety-standards-classification-chart-ul-csa-bsi-vde-approval>

| Part Number                            | Safety Standards                   |        |                      |                       |                                         |                       |                      |                       |                                          |                       |
|----------------------------------------|------------------------------------|--------|----------------------|-----------------------|-----------------------------------------|-----------------------|----------------------|-----------------------|------------------------------------------|-----------------------|
|                                        | UL                                 |        |                      |                       | CSA                                     |                       | BSI                  |                       | VDE                                      |                       |
|                                        | UL1577<br>Single/Double Protection |        |                      |                       | CAN/CSA C22.2<br>62368-1<br>IEC 62368-1 |                       | BS EN 62368-1        |                       | DIN EN 60747-5-5<br>DIN EN IEC 60747-5-5 |                       |
|                                        | Single                             | Double | Assembly<br>in JAPAN | Assembly<br>in TAIWAN | Assembly<br>in JAPAN                    | Assembly<br>in TAIWAN | Assembly<br>in JAPAN | Assembly<br>in TAIWAN | Assembly<br>in JAPAN                     | Assembly<br>in TAIWAN |
| PS9531, PS9531L1<br>PS9531L2, PS9531L3 | •                                  | •      | •                    | –                     | •R                                      | –                     | –                    | –                     | •                                        | –                     |
| PS9551AL4                              | •                                  | •      | •                    | –                     | •R                                      | –                     | –                    | –                     | •                                        | –                     |
| PS9587, PS9587L1<br>PS9587L2, PS9587L3 | •                                  | •      | •                    | –                     | •R                                      | –                     | •R                   | –                     | •                                        | –                     |
| PS9817A-1, -2                          | •                                  | –      | •                    | –                     | •B                                      | –                     | –                    | –                     | •                                        | –                     |
| PS9821-1, -2                           | •                                  | –      | •                    | –                     | •B                                      | –                     | –                    | –                     | •                                        | –                     |
| PS9822-1, -2                           | •                                  | –      | •                    | –                     | –                                       | –                     | –                    | –                     | •                                        | –                     |
| PS9851-1, -2                           | •                                  | –      | •                    | –                     | –                                       | –                     | –                    | –                     | •                                        | –                     |
| PS9905                                 | •                                  | •      | •                    | –                     | •R                                      | –                     | –                    | –                     | •                                        | –                     |
| PS9924                                 | •                                  | •      | •                    | –                     | •R                                      | –                     | –                    | –                     | •                                        | –                     |
| RV1S9960A                              | •                                  | •      | •                    | –                     | •R                                      | –                     | –                    | –                     | •                                        | –                     |





# RECOMMENDED LAND PATTERN

Unit : mm

| LS05                                                                                 | DIP4 (L)                                                                             | SDIP6                                                                                 |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <p>Diagram showing land pattern for LS05. Dimensions: 1.27, 0.8, 1.3, 9.5, 2.54.</p> | <p>Diagram showing land pattern for DIP4 (L). Dimensions: 1.7, 2.2, 8.2, 2.54.</p>   | <p>Diagram showing land pattern for SDIP6. Dimensions: 1.27, 0.8, 2.2, 9.2.</p>       |
| LSDIP8                                                                               | DIP4 (L2)                                                                            | SDIP6 (L2)                                                                            |
| <p>Diagram showing land pattern for LSDIP8. Dimensions: 1.27, 0.9, 2, 16.6.</p>      | <p>Diagram showing land pattern for DIP4 (L2). Dimensions: 1.7, 2.2, 10.2, 2.54.</p> | <p>Diagram showing land pattern for SDIP6 (L2). Dimensions: 1.27, 0.8, 2.2, 10.2.</p> |
| S016                                                                                 | DIP8 (L3)                                                                            | SDIP8 (L)                                                                             |
| <p>Diagram showing land pattern for S016. Dimensions: 1.27, 0.96, 1.65, 9.85.</p>    | <p>Diagram showing land pattern for DIP8 (L3). Dimensions: 2.54, 1.7, 2.0, 9.0.</p>  | <p>Diagram showing land pattern for SDIP8 (L). Dimensions: 1.27, 0.8, 2.2, 9.2.</p>   |
| DIP8 (L4)                                                                            | DIP8 (L2)                                                                            | SDIP8 (L2)                                                                            |
| <p>Diagram showing land pattern for DIP8 (L4). Dimensions: 2.54, 1.7, 2.0, 9.0.</p>  | <p>Diagram showing land pattern for DIP8 (L2). Dimensions: 2.54, 1.7, 2.2, 10.2.</p> | <p>Diagram showing land pattern for SDIP8 (L2). Dimensions: 1.27, 0.8, 2.2, 10.2.</p> |

Unit : mm

| S05                                | SSOP4                                                 | LSS05                                |
|------------------------------------|-------------------------------------------------------|--------------------------------------|
| <p>1.27 0.8 1.45<br/>6.25 2.54</p> | <p>0.8 1.45<br/>6.25 1.27</p>                         | <p>0.65 0.35 1.3<br/>9.5 1.3 0.4</p> |
| S08                                | SSOP16                                                | LSSOP                                |
| <p>1.27 0.8 1.45<br/>5.25</p>      | <p>1.27 0.8 1.45<br/>6.25</p>                         | <p>0.4 1.3<br/>9.5 1.3</p>           |
| SOP                                | SSOP12                                                |                                      |
| <p>0.8 1.45<br/>6.25 2.54</p>      | <p>0.80 0.5 1.45<br/>6.25</p>                         |                                      |
| LSOP                               | Flat lead                                             |                                      |
| <p>0.8 1.3<br/>9.5 2.54</p>        | <p>0.8 0.6 1.27 0.35<br/>4.14 1.3 5.7<br/>24-R0.1</p> |                                      |

# TAPING & REEL SPECIFICATIONS



## Direction of Product Inserted in Tape

| LS05       | S05          | S08          | S016            |
|------------|--------------|--------------|-----------------|
|            |              |              |                 |
| LSDIP      | SDIP6 (L,L2) | SDIP8 (L,L2) | DIP8 (L2,L3,L4) |
|            |              |              |                 |
| DIP (L,L2) | SOP          | LSOP         | Flat lead       |
|            |              |              |                 |
| SSOP4      | SSOP16       | SSOP12       | LSS05 / LSSOP   |
|            |              |              |                 |

| Reel Dimensions                    |      |                |           |           |            |
|------------------------------------|------|----------------|-----------|-----------|------------|
| Symbol                             | Unit | Tape Width (W) |           |           |            |
|                                    |      | 12 mm          | 16 mm     | 16 mm     | 24 mm      |
| A                                  | mm   | Ø330±2.0       | Ø330±2.0  | Ø330±2.0  | Ø330±2.0   |
| W1                                 | mm   | 13.4±1.0       | 17.4±1.0  | 17.4±1.0  | 25.4±1.0   |
| W2                                 | mm   | 17.4±1.0       | 21.4±1.0  | 21.4±1.0  | 29.4±1.0   |
| B                                  | mm   | Ø100±1.0       | Ø100±1.0  | Ø80±1.0   | Ø100±1.0   |
| C                                  | mm   | Ø13.0±0.2      | Ø13.0±0.2 | Ø13.0±0.2 | Ø13.0±0.2  |
| D                                  | mm   | Ø21.0±0.8      | Ø21.0±0.8 | Ø21.0±0.8 | Ø21.0±0.8  |
| E                                  | mm   | 2.0±0.5        | 2.0±0.5   | 2.0±0.5   | 2.0±0.5    |
| Package<br>(IC output<br>coupler)  |      | S05            | DIP8 (L3) |           | DIP8 (L2)  |
|                                    |      | S08            | DIP8 (L4) |           | SDIP6 (L2) |
|                                    |      |                | SDIP6 (L) |           | SDIP8 (L2) |
|                                    |      |                | SDIP8 (L) |           | LSDIP8     |
|                                    |      |                | LS05      |           | SO16       |
| Package<br>(Tr. output<br>coupler) |      | SOP            | DIP4 (L)  |           | DIP4 (L2)  |
|                                    |      | Flat leads     | LSOP      |           |            |
|                                    |      |                | LSSOP     |           |            |
|                                    |      | SSOP12         | SSOP4     | SSOP16    |            |

| Tape Dimensions (IC Output Coupler) |      |             |             |             |             |             |             |             |             |             |             |             |             |             |
|-------------------------------------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Symbol                              | Unit | S05         | S08         | DIP8 (L3)   | DIP8 (L4)   | SDIP6 (L)   | SDIP8 (L)   | LS05        | LSS05       | DIP8 (L2)   | SDIP6 (L2)  | SDIP8 (L2)  | LSDIP8      | SO16        |
| A0                                  | mm   | 3.9±0.1     | 6.4±0.1     | 10.3±0.1    | 9.95±0.1    | 5.08±0.1    | 6.35±0.1    | 4.3±0.1     | 2.85±0.1    | 10.4±0.1    | 5.08±0.1    | 6.35±0.1    | 7.2±0.1     | 10.9±0.1    |
| B0                                  | mm   | 7.4±0.1     | 5.56±0.1    | 10.4±0.1    | 10.55±0.1   | 10.2±0.1    | 10.2±0.1    | 10.7±0.1    | 10.7±0.1    | 12.5±0.1    | 12.0±0.1    | 12.0±0.1    | 17.2±0.1    | 10.8±0.1    |
| K0                                  | mm   | 3.0±0.1     | 3.6±0.1     | 4.75±0.1    | 4.2±0.1     | 4.05±0.1    | 4.05±0.1    | 2.3±0.1     | 2.1±0.1     | 4.1±0.1     | 4.05±0.1    | 4.05±0.1    | 4.05±0.1    | 3.8±0.1     |
| P1                                  | mm   | 8.0±0.1     | 8.0±0.1     | 12.0±0.1    | 12.0±0.1    | 8.0±0.1     | 8.0±0.1     | 8.0±0.1     | 4.0±0.1     | 12.0±0.1    | 8.0±0.1     | 8.0±0.1     | 12.0±0.1    | 16.0±0.1    |
| D1                                  | mm   | Ø1.55±0.1   | Ø1.7±0.1    | Ø1.55±0.1   | Ø1.55±0.1   | Ø1.55±0.1   | Ø1.55±0.1   | Ø1.55±0.1   | Ø1.55±0.1   | Ø2.05±0.05  | Ø2.05±0.1   | Ø2.05±0.1   | Ø2.0±0.2    | Ø1.55±0.1   |
| J                                   | mm   | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 |
| H                                   | mm   | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     |
| E                                   | mm   | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    |
| G                                   | mm   | 2.0±0.05    | 2.0±0.05    | 2.0±0.1     | 2.0±0.1     | 2.0±0.1     | 2.0±0.1     | 2.0±0.1     | 2.0±0.1     | 2.0±0.1     | 2.0±0.1     | 2.0±0.1     | 2.0±0.1     | 2.0±0.1     |
| F                                   | mm   | 5.5±0.1     | 5.5±0.1     | 7.5±0.1     | 7.5±0.1     | 7.5±0.1     | 7.5±0.1     | 7.5±0.1     | 7.5±0.1     | 11.5±0.1    | 11.5±0.1    | 11.5±0.1    | 11.5±0.1    | 11.5±0.1    |
| W                                   | mm   | 12.0±0.2    | 12.0±0.2    | 16.0±0.3    | 16.0±0.3    | 16.0±0.3    | 16.0±0.3    | 16.0±0.3    | 16.0±0.3    | 24.0±0.3    | 24.0±0.3    | 24.0±0.3    | 24.0±0.3    | 24.0±0.3    |
| t                                   | mm   | 0.3±0.05    | 0.3         | 0.35        | 0.3         | 0.35        | 0.35        | 0.3         | 0.3         | 0.3±0.05    | 0.35        | 0.35        | 0.35        | 0.4         |
| x                                   | pcs  | 2500        | 1500        | 1000        | 1000        | 2000        | 2000        | 3000        | 3500        | 1000        | 2000        | 2000        | 1000        | 850         |

| Tape Dimensions (Tr. Output Coupler) |      |             |             |             |             |             |             |             |             |             |
|--------------------------------------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Symbol                               | Unit | SOP         | Flat Leads  | SSOP12      | DIP4 (L)    | LSOP        | LSSOP       | SSOP4       | SSOP16      | DIP4 (L2)   |
| A0                                   | mm   | 4.4±0.1     | 2.9±0.1     | 6.0±0.1     | 5.3±0.1     | 4.3±0.1     | 2.85±0.1    | 2.85±0.1    | 8.3±0.1     | 5.3±0.1     |
| B0                                   | mm   | 7.4±0.1     | 5.3±0.1     | 7.4±0.1     | 10.3±0.1    | 10.7±0.1    | 10.7±0.1    | 7.55±0.1    | 10.7±0.1    | 12.5±0.1    |
| K0                                   | mm   | 2.4±0.1     | 2.4±0.1     | 2.85±0.1    | 4.0±0.1     | 2.3±0.1     | 2.1±0.1     | 2.3±0.1     | 2.3±0.1     | 4.05±0.1    |
| P1                                   | mm   | 8.0±0.1     | 4.0±0.1     | 8.0±0.1     | 8.0±0.1     | 8.0±0.1     | 4.0±0.1     | 4.0±0.1     | 12.0±0.1    | 8.0±0.1     |
| D1                                   | mm   | Ø1.55±0.1   | Ø1.55±0.05  | Ø1.55±0.1   | Ø1.55±0.1   | Ø1.55±0.1   | Ø1.55±0.1   | Ø1.55±0.1   | Ø1.55±0.1   | Ø2.05±0.1   |
| J                                    | mm   | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 | Ø1.5+0.1/-0 |
| H                                    | mm   | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     | 4.0±0.1     |
| E                                    | mm   | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    | 1.75±0.1    |
| G                                    | mm   | 2.0±0.05    | 2.0±0.05    | 2.0±0.05    | 2.0±0.1     | 2.0±0.1     | 2.0±0.1     | 2.0±0.1     | 2.0±0.1     | 2.0±0.1     |
| F                                    | mm   | 5.5±0.05    | 5.5±0.05    | 5.5±0.1     | 7.5±0.1     | 7.5±0.1     | 7.5±0.1     | 7.5±0.1     | 7.5±0.1     | 11.5±0.1    |
| W                                    | mm   | 12.0±0.2    | 12.0±0.2    | 12.0±0.2    | 16.0±0.3    | 16.0±0.3    | 16.0±0.3    | 16.0±0.3    | 16.0±0.3    | 24.0±0.3    |
| t                                    | mm   | 0.3         | 0.3         | 0.3         | 0.4         | 0.3         | 0.3         | 0.3         | 0.25        | 0.4         |
| x                                    | pcs  | 3500        | 3500        | 2500        | 2000        | 3000        | 3500        | 3500        | 2500        | 1000        |

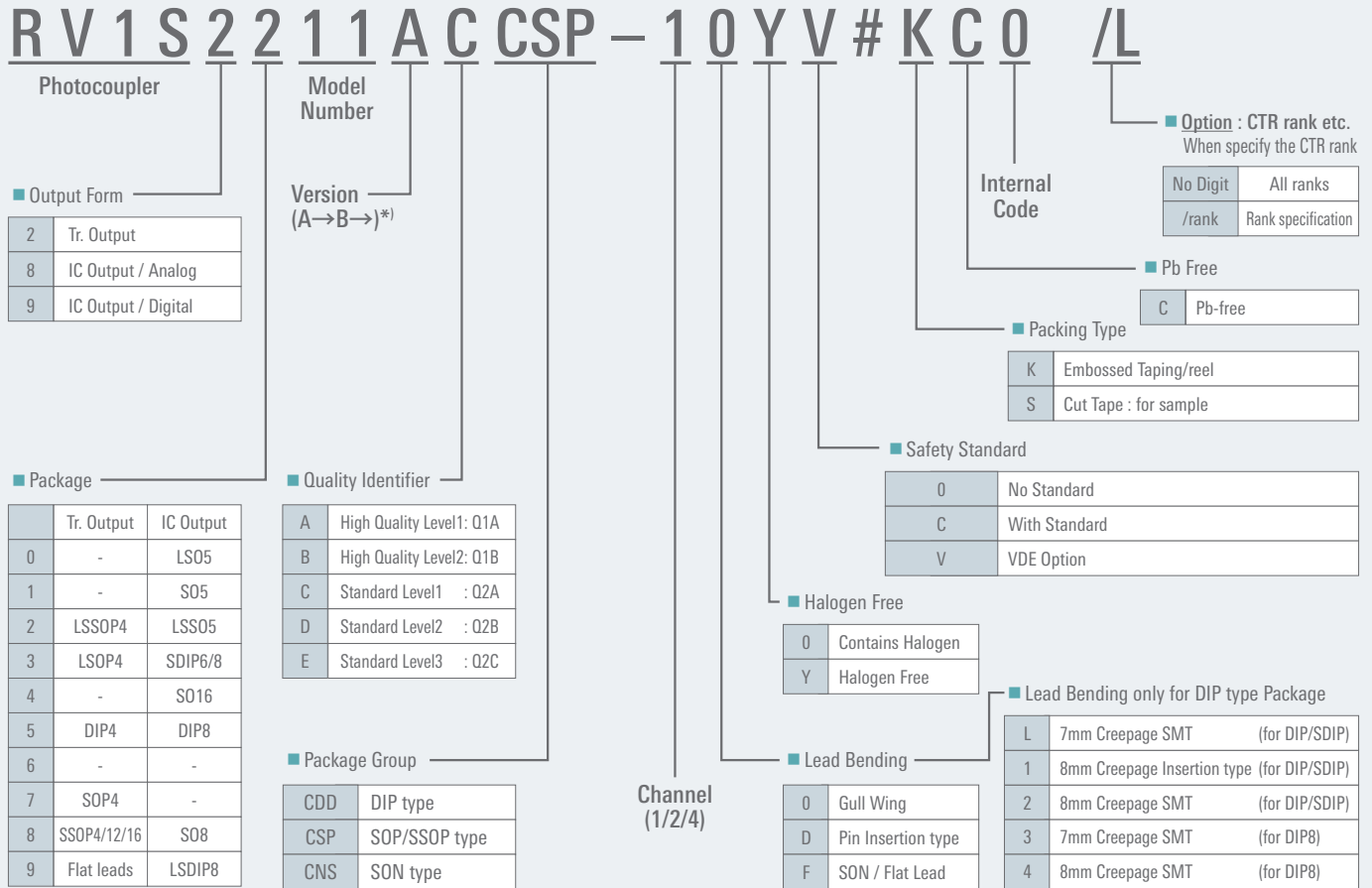
# LABEL PRINT EXAMPLES

| OUTER PACKING BOX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | REAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p style="text-align: center;">LABEL</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  <p style="text-align: center;">LABEL</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| LABEL on OUTER PACKING BOX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | LABEL on TAPING REEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <p>Assembly in JAPAN</p> <p style="text-align: right;">Marking of Safety Standards</p> <div style="border: 1px solid black; padding: 5px;">  <p style="text-align: center;">Pb-Free T. <b>RENESAS</b></p> <p>D/N PS2861B1YVF3A/0118B/R2 MC:JPJP<br/>             SPN PS2861B-1Y-V-F3-A 002G116NR2 MADE IN JAPAN</p> <p style="text-align: center;">CTR rank</p> <hr/> <p>PN PS2861B-1-V-F3 2014/01/10<br/>             PID 124446105V-001<br/>             QTY 7000 Quantity (ex. 2reels)<br/>             PCD 0000184865<br/>             T/C 1402 123QA4567<br/>             S.LOT YL2209K801</p>  </div>                                                | <p>Assembly in JAPAN</p> <div style="border: 1px solid black; padding: 5px;"> <p>(2P)P/N:PS2861B-1-V-F3  Pb-Free T. <b>RENESAS</b><br/>             MC:JPJP L-179V2</p> <p>(P)INTP:PS2861B-1Y-V-F3-A  MC:JPJP L-179V2<br/>             (S)BOX ID:L2K9005FB</p> <p>(1P)INTS:PS2861B-1Y-V-F3-A<br/>             ZIS/NO:NR2 (Q)QTY:3500</p> <p style="text-align: center;">CTR rank Quantity</p> <p>(1T)LOT:123QA4567 </p> <p style="text-align: center;">Marking of Safety Standards</p> </div>  |
| <p>Assembly in TAIWAN</p> <p style="text-align: right;">Marking of Safety Standards</p> <div style="border: 1px solid black; padding: 5px;">  <p style="text-align: center;">Pb-Free T. <b>RENESAS</b></p> <p>D/N PS2861B1YVF3A/0118B/R2 MC:JPTWTW<br/>             SPN PS2861B-1Y-V-F3-A 002G116NR2 ASSEMBLED IN TAIWAN<br/>             FROM WAFERS OF JAPAN</p> <p style="text-align: center;">CTR rank</p> <hr/> <p>PN PS2861B-1-V-F3 2014/01/10<br/>             PID 124446105V-001<br/>             QTY 7000 Quantity (ex. 2reels)<br/>             PCD 0000184865<br/>             T/C 1402 123WB4567<br/>             S.LOT YL2209K801</p>  </div> | <p>Assembly in TAIWAN</p> <div style="border: 1px solid black; padding: 5px;"> <p>(2P)P/N:PS2861B-1-V-F3  Pb-Free T. <b>RENESAS</b><br/>             MC:JPJP L-179V2</p> <p>(P)INTP:PS2861B-1Y-V-F3-A  MC:JPJP L-179V2<br/>             (S)BOX ID:L2K9005FB</p> <p>(1P)INTS:PS2861B-1Y-V-F3-A<br/>             ZIS/NO:NY2 (Q)QTY:3500</p> <p style="text-align: center;">CTR rank Quantity</p> <p>(1T)LOT:123QA4567 </p> <p style="text-align: center;">Marking of Safety Standards</p> </div> |



# PART NUMBER GUIDE

Part number guide = P/N starting with "RV1S" =



\*) P/N with "Q" at "Version" indicates products for automotive use. In this case, there are digits that do not follow the definition on this page.

Part number guide = P/N starting with "PS" =



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(Rev.5.0-1 October 2020)

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