★ Under development

## ■ Distance Measuring Sensor Lineup

| Sensor type | Output | Detected distance | Features | Model No. |
|---|---|---|---|---|
| PSD, 2PD | 1-bit digital output according to distance measuring | 5 cm | Battery drive compatible, compact, 1-bit digital output | GP2Y0D805Z0F |
| | | 10 cm | Battery drive compatible, compact, 1-bit digital output | GP2Y0D810Z0F |
| | | 15 cm | Battery drive compatible, compact, 1-bit digital output | GP2Y0D815Z0F |
| | | 13 cm | 1-bit digital output | GP2Y0D413K0F |
| | | 24 cm | 1-bit digital output | GP2Y0D21YK0F |
| | | 80 cm | 1-bit digital output | GP2Y0D02YK0F |
| | Analog voltage output according to distance measuring | 1.5 to 15 cm | Analog output | GP2Y0AF15 series |
| | | 2 to 15 cm | Analog output | GP2Y0A51SK0F |
| | | 4 to 30 cm | Analog output | GP2Y0A41SK0F / GP2Y0AF30 series |
| | | 10 to 80 cm | Analog output | GP2Y0A21YK0F |
| | | 10 to 150 cm | Compact (22 × 8 × 7.2 [T] mm), Analog output | GP2Y0A60SZLF |
| | | 20 to 150 cm | Analog output | GP2Y0A02YK0F |
| | | 100 to 550 cm | Analog output | GP2Y0A710K0F |
| CMOS | Analog voltage output according to distance measuring (Including I²C output) | 4 to 50 cm | Compact size, high-precision measurement / Analog output | GP2Y0E02A |
| | | | I²C output | GP2Y0E02B |
| | | | Analog, I²C output | GP2Y0E03 |

## ■ Dust Sensor Unit Lineup

| Output | Features | Model No. |
|---|---|---|
| Analog output | Pulse analog output, single-shot detection of house dust, general purpose | GP2Y1010AU0F |
| | Pulse analog output, single-shot detection of house dust, high sensitivity | GP2Y1012AU0F |
| Digital output | Digital (PWM) output, built-in microprocessor controller, single-shot detection of house dust, high sensitivity | GP2Y1023AU0F |
| | Digital (UART) output, built-in microprocessor controller, sensing can discriminate between PM2.5 and PM10, internal cleaning possible | ★GP2Y1030AU0F |

RoHS

## ■ Distance Measuring Sensors (1) PSD, 2PD Type

### ◆Digital Output

(Ta = 25°C)

| Model No. | Detected distance (cm) | Features | Absolute maximum ratings | | Electro-optical characteristics*1 | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Vcc (V) | Topr (°C) | VOH (V) MIN. | VOL (V) MAX. | Dissipation current | |
| | | | | | | | Operating (mA) | Standby (μA) |
| GP2Y0D805Z0F | 5 | Light detector, infrared LED and signal processing circuit, short distance measuring type, battery drive compatible (operating power supply: 2.7 to 6.2 V) | −0.3 to +7 | −10 to +60 | Vcc −0.6 | 0.6 | MAX. 6.5 | MAX. 8 |
| GP2Y0D810Z0F | 10 | Light detector, infrared LED and signal processing circuit, short distance measuring type, battery drive compatible (operating power supply: 2.7 to 6.2 V) | −0.3 to +7 | −10 to +60 | Vcc −0.6 | 0.6 | MAX. 6.5 | MAX. 8 |
| GP2Y0D815Z0F | 15 | Light detector, infrared LED and signal processing circuit, short distance measuring type, battery drive compatible (operating power supply: 2.7 to 6.2 V) | −0.3 to +7 | −10 to +60 | Vcc −0.6 | 0.6 | MAX. 6.5 | MAX. 8 |
| GP2Y0D413K0F | 13 | Distance measuring sensor united with PSD*2, infrared LED and signal processing circuit, digital voltage output according to the measured distance | −0.3 to +7 | −10 to +60 | Vcc −0.3 | 0.6 | – | – |
| GP2Y0D21YK0F | 24 | Distance measuring sensor united with PSD*2, infrared LED and signal processing circuit, digital voltage output according to the measured distance | −0.3 to +7 | −10 to +60 | Vcc −0.3 | 0.6 | MAX. 40 | – |
| GP2Y0D02YK0F | 80 | Distance measuring sensor united with PSD*2, infrared LED and signal processing circuit, long distance measuring type (No external control signal required), digital voltage output according to the measured distance | −0.3 to +7 | −10 to +60 | Vcc −0.3 | 0.6 | MAX. 50 | – |

*1 Vcc = 5 V
*2 PSD: Position Sensitive Detector

RoHS

## ■ Distance Measuring Sensors (1) PSD, 2PD Type

### ◆ Analog Output

(Ta = 25°C)

| Model No. | Distance measuring range (cm) | Features | Absolute maximum ratings | | Electro-optical characteristics*1 | | |
|---|---|---|---|---|---|---|---|
| | | | Vcc (V) | Topr (°C) | VOH (V) MIN. | VOL (V) MAX. | Dissipation current Operating (mA) |
| GP2Y0AF15 series | 1.5 to 15 | Distance measuring sensor united with PSD*2, infrared LED and signal processing circuit, short measuring cycle (16.5 ms), compact, lineup of various connector shapes | −0.3 to +7 | −10 to +60 | VO (TYP.) = 0.4 V (at L = 15 cm), ΔVO (TYP.) = 2.3 V (at L = 15 cm → 1.5 cm) | | TYP. 17 |
| GP2Y0A51SK0F | 2 to 15 | Distance measuring sensor united with PSD*2, infrared LED and signal processing circuit, short measuring cycle (16.5 ms) | −0.3 to +7 | −10 to +60 | VO (TYP.) = 0.4 V (at L = 15 cm), ΔVO (TYP.) = 2.25 V (at L = 15 cm → 2 cm) | | TYP. 12 |
| GP2Y0AF30 series | 4 to 30 | Distance measuring sensor united with PSD*2, infrared LED and signal processing circuit, short measuring cycle (16.5 ms), compact, lineup of various connector shapes | −0.3 to +7 | −10 to +60 | VO (TYP.) = 0.4 V (at L = 30 cm), ΔVO (TYP.) = 2.3 V (at L = 30 cm → 4 cm) | | TYP. 17 |
| GP2Y0A41SK0F | 4 to 30 | Distance measuring sensor united with PSD*2, infrared LED and signal processing circuit, short measuring cycle (16.5 ms) | −0.3 to +7 | −10 to +60 | VO (TYP.) = 0.4 V (at L = 30 cm), ΔVO (TYP.) = 2.25 V (at L = 30 cm → 4 cm) | | MAX. 22 |
| GP2Y0A21YK0F | 10 to 80 | Distance measuring sensor united with PSD*2, infrared LED and signal processing circuit, linear voltage output | −0.3 to +7 | −10 to +60 | VO (TYP.) = 0.4 V (at L = 80 cm), ΔVO (TYP.) = 1.9 V (at L: 80 cm → 10 cm) | | MAX. 40 |
| GP2Y0A60SZLF | 10 to 150 | Distance measuring sensor united with PSD*2, infrared LED and signal processing circuit, compact type (22 x 8 x 7.2 mm), long distance measuring type (No external control signal required) | −0.3 to +5.5 | −10 to +60 | VO (TYP.) = 0.65 V *3 (at L = 150 cm), ΔVO (TYP.) = 3.0 V (at L = 150 cm → 20 cm) | | MAX. 50 |
| GP2Y0A02YK0F | 20 to 150 | Distance measuring sensor united with PSD*2, infrared LED and signal processing circuit, long distance measuring type (No external control signal required) | −0.3 to +7 | −10 to +60 | VO (TYP.) = 0.4 V (at L = 150 cm), ΔVO (TYP.) = 2.05 V (at L = 150 cm → 20 cm) | | MAX. 50 |
| GP2Y0A710K0F | 100 to 550 | Distance measuring sensor united with PSD*2, infrared LED and signal processing circuit, long distance measuring type (No external control signal required) | −0.3 to +7 | −10 to +60 | VO (TYP.) = 2.5 V (at L = 100 cm), ΔVO (TYP.) = 0.7 V (at L = 100 cm → 200 cm) | | TYP. 30 |

*1 Vcc = 5 V
*2 PSD: Position Sensitive Detector
*3 When Vcc = 3 V: Vo (TYP.) = 0.35 V (at L = 150 cm); ΔVo (TYP.) = 1.6 V (at L = 150 cm → 20 cm)

## ■ Distance Measuring Sensors (2) CMOS type

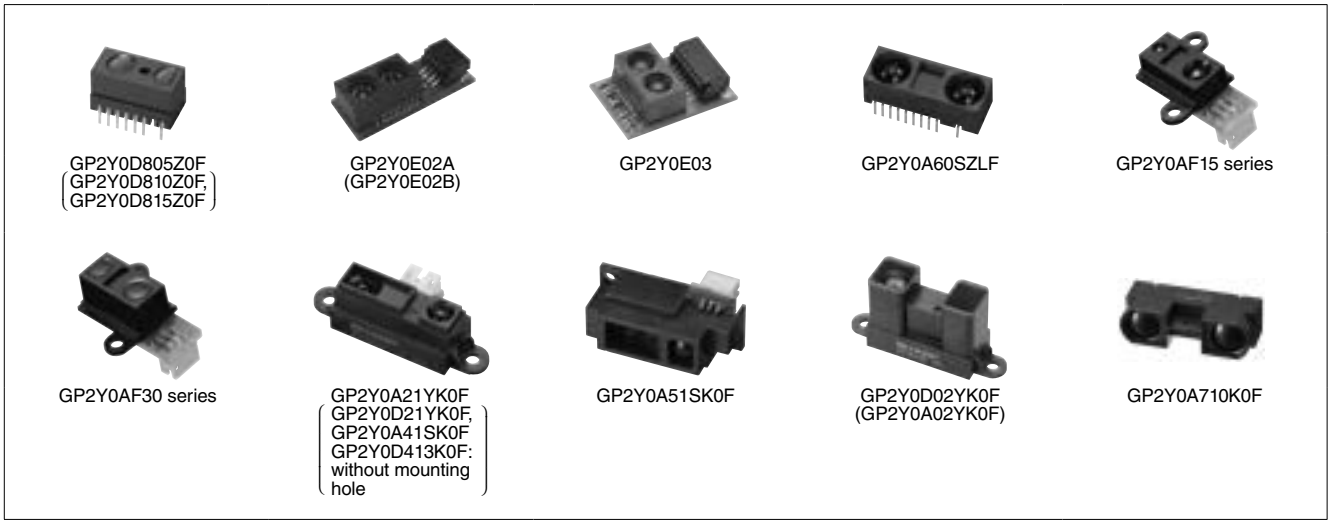
### ◆ Analog Output (Including I²C output)

(Ta = 25°C)

| Model No. | Distance measuring range (cm) | Features | Absolute maximum ratings | | Electro-optical characteristics*1 | | |
|---|---|---|---|---|---|---|---|
| | | | Vcc (V) | Topr (°C) | VOUT (V) MIN. | VOL (V) MAX. | Dissipation current Operating (mA) |
| GP2Y0E02A | 4 to 50 | Infrared LED and CMOS image sensor with built-in signal processing circuit, compact size (18.9 × 8 × 5.2 mm), high-precision measurement, analog output | −0.3 to +3.6 | −10 to +60 | VOUT (A) 1 = 0.3 to 0.8 V (at L = 50 cm), VOUT (A) 3 = 2.1 to 2.3 V (at L = 4 cm) | | MAX. 36 |
| GP2Y0E02B | 4 to 50 | Infrared LED and CMOS image sensor with built-in signal processing circuit, compact size (18.9 × 8 × 5.2 mm), high-precision measurement, I²C output | −0.3 to +3.6 | −10 to +60 | D1 = 45 to 50 cm (at L = 50 cm), D3 = 3 to 5 cm (at L = 4 cm) | | MAX. 36 |
| GP2Y0E03 | 4 to 50 | Infrared LED and CMOS image sensor with built-in signal processing circuit, compact size (16.7 × 11 × 5.2 mm), high-precision measurement, analog / I²C output both compatible | −0.3 to +5.5 | −10 to +60 | VOUT (A) 1 = 0.3 to 0.8 V, D1 = 45 to 50 cm (at L = 50 cm), VOUT (A) 3 = 2.1 to 2.3 V, D3 = 3 to 5 cm (at L = 4 cm) | | MAX. 36 |

*1 Vcc = 5 V

★ Under development



GP2Y0D805Z0F (GP2Y0D810Z0F, GP2Y0D815Z0F)
GP2Y0E02A (GP2Y0E02B)
GP2Y0E03
GP2Y0A60SZLF
GP2Y0AF15 series
GP2Y0AF30 series
GP2Y0A21YK0F (GP2Y0D21YK0F, GP2Y0A41SK0F GP2Y0D413K0F: without mounting hole)
GP2Y0A51SK0F
GP2Y0D02YK0F (GP2Y0A02YK0F)
GP2Y0A710K0F

## ■ Dust Sensor Unit

(Ta = 25°C)

| Model No. | Features | Topr (°C) | Operating supply voltage (V) | Electro-optical characteristics | | |
|---|---|---|---|---|---|---|
| | | | | Dissipation current (mA) | Detection concentration μg/m³ (TYP.) | Output |
| GP2Y1010AU0F | • Built-in infrared emitting diode, photodiode and signal processing circuit<br>• Compact, single-shot detection of house dust<br>• Output: Analog voltage | –10 to +65 | 4.5 to 5.5 | TYP. 11 | 0 to 600 | Analog voltage |
| GP2Y1012AU0F | • High sensitivity<br>• Built-in infrared emitting diode, photodiode and signal processing circuit<br>• Compact, single-shot detection of house dust<br>• Output: Analog voltage | | 4.5 to 5.5 | TYP. 11 | 0 to 240 | Analog voltage |
| GP2Y1023AU0F | • High sensitivity<br>• Built-in microcomputer<br>• Built-in infrared emitting diode, photodiode and signal processing circuit<br>• Compact, single-shot detection of house dust<br>• Output: Digital signal output (PWM) | | 4.75 to 5.25 | TYP. 15 | 0 to 240 | Digital signal (PWM)<br>Temperature correction<br>Averaging |
| ★GP2Y1030AU0F | • Built-in infrared emitting diode, photodiode and signal processing circuit<br>• Built-in microcomputer<br>• Sensing can discriminate between PM2.5 and PM10<br>• Internal cleaning possible | | 3 to 5.5 | TYP. 25 | 0 to 500 | Digital signal (UART) |

GP2Y1010AU0F (GP2Y1012AU0F, GP2Y1023AU0F)
GP2Y1030AU0F

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