

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 I ² C output)	4 to 50 cm	Compact size, high-precision measurement	Analog output	GP2Y0E02A
				I ² C output	GP2Y0E02B
				Analog, I ² C 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



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

Notice

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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 (at L = 150 cm), ΔVo (TYP.) = 3.0 V (at L = 150 cm → 20 cm) *3		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)	VoH (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 x 8 x 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 x 8 x 5.2 mm), high-precision measurement, I ² C 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 x 11 x 5.2 mm), high-precision measurement, analog / I ² C 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

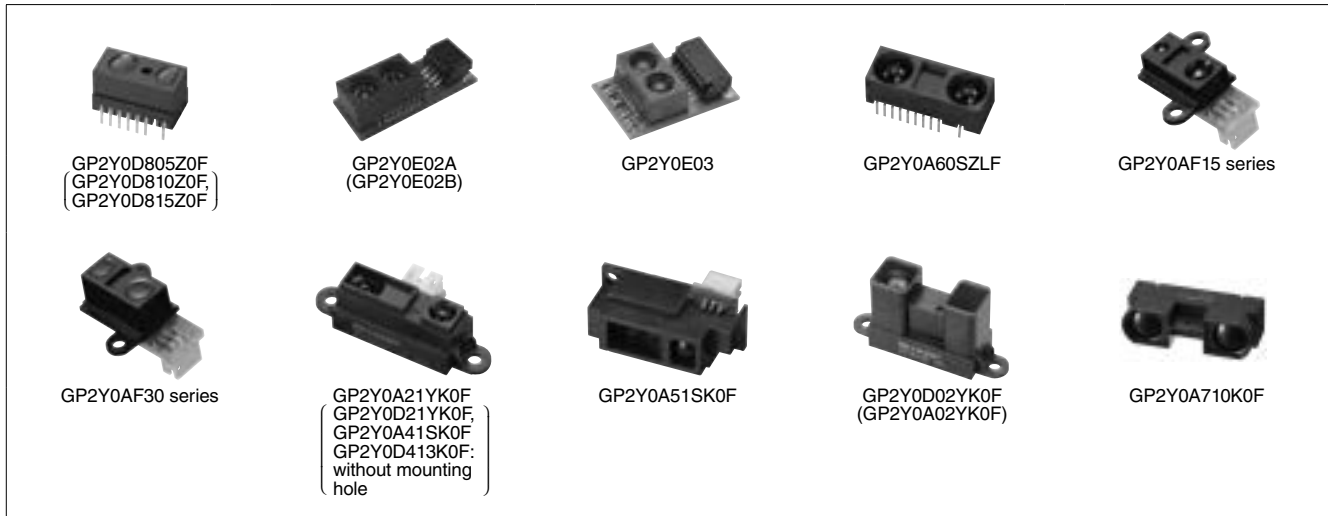
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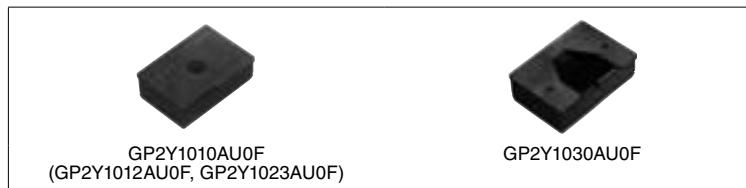
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■ Dust Sensor Unit

(Ta = 25°C)

Model No.	Features	Topr (°C)	Operating supply voltage (V)	Electro-optical characteristics		
				Dissipation current (mA)	Detection concentration $\mu\text{g}/\text{m}^3$ (TYP.)	Output
GP2Y1010AU0F	<ul style="list-style-type: none"> Built-in infrared emitting diode, photodiode and signal processing circuit Compact, single-shot detection of house dust Output: Analog voltage 	-10 to +65	4.5 to 5.5	TYP. 11	0 to 600	Analog voltage
GP2Y1012AU0F	<ul style="list-style-type: none"> High sensitivity Built-in infrared emitting diode, photodiode and signal processing circuit Compact, single-shot detection of house dust Output: Analog voltage 		4.5 to 5.5	TYP. 11	0 to 240	Analog voltage
GP2Y1023AU0F	<ul style="list-style-type: none"> High sensitivity Built-in microcomputer Built-in infrared emitting diode, photodiode and signal processing circuit Compact, single-shot detection of house dust Output: Digital signal output (PWM) 		4.75 to 5.25	TYP. 15	0 to 240	Digital signal (PWM) Temperature correction Averaging
★GP2Y1030AU0F	<ul style="list-style-type: none"> Built-in infrared emitting diode, photodiode and signal processing circuit Built-in microcomputer Sensing can discriminate between PM2.5 and PM10 Internal cleaning possible 		3 to 5.5	TYP. 25	0 to 500	Digital signal (UART)



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