



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

In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc.

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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

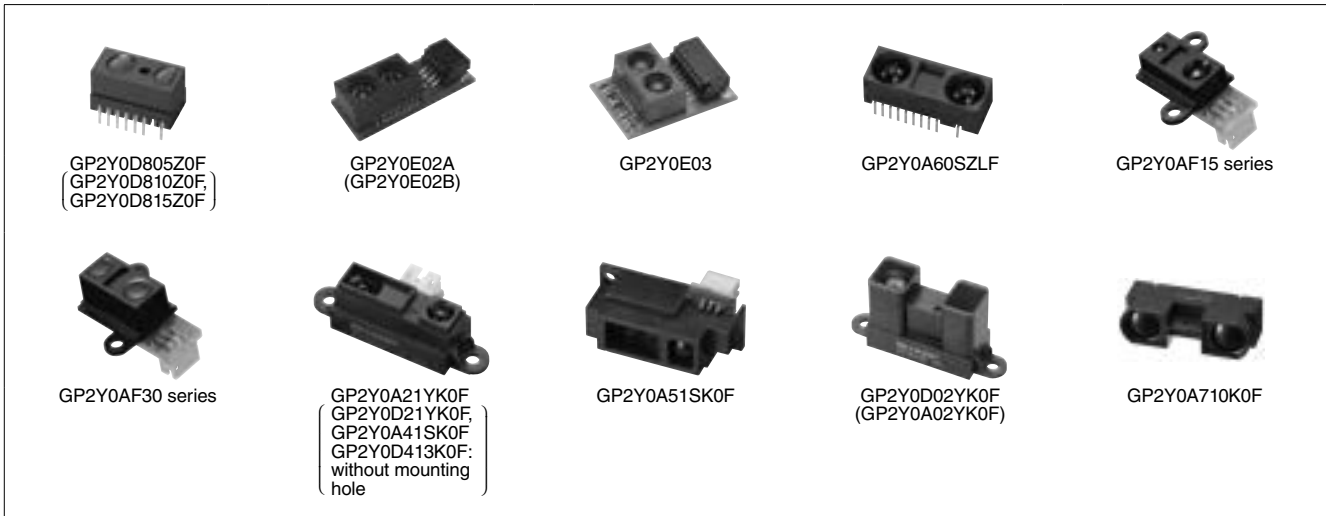
*1 Vcc = 5 V

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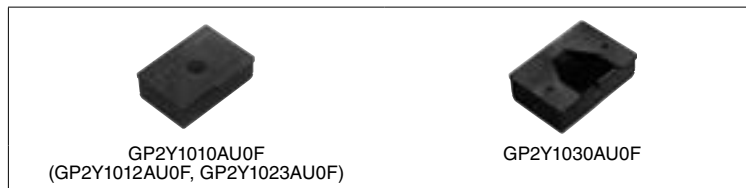
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■ Dust Sensor Unit

(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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