

## ■ Sensors

- Photointerrupters
- Optical System Devices
- Emitters/Detectors



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## Photointerrupters

Model No.	Features	Detecting and Emitting Gap (mm)	Slit width (mm)	Electro-optical Characteristics							
				Current transfer ratio			Response time				
				CTR (%)	I <sub>F</sub> (mA)	V <sub>CE</sub> (V)	t <sub>r</sub> (μs) TYP.	I <sub>C</sub> (mA)	R <sub>L</sub> (Ω)	V <sub>CE</sub> (V)	
<b>Transmissive, Single Transistor Output Compact Type</b>											
GP1S092HCPIF	Height: 2.9 mm, for soldering reflow, with positioning boss	2.0	0.3	2.0	5	5	50	0.1	1,000	5	
GP1S094HCZ0F	Wide gap, with positioning pin, PWB mounting type (5.5 × 2.6 × 4.8 mm)	3.0	0.3	0.8	5	5	50	0.1	1,000	5	
GP1S096HCZ0F	Low profile (3.5 × 2.6 × 2.9 mm)	1.0	0.3	2.0	5	5	50	0.1	1,000	5	
GP1S196HCZSF	Surface mount, for soldering reflow, compact, low profile (3.1 × 2.0 × 2.7 mm)	1.1	0.3	2.0	5	5	50	0.1	1,000	5	
GP1S097HCZ0F	High resolution, wide gap, with mounting hole (4.5 × 2.6 × 4.5 mm)	2.0	0.3	2.0	5	5	50	0.1	1,000	5	



GP1S092HCPIF



GP1S094HCZ0F



GP1S096HCZ0F



GP1S196HCZSF



GP1S097HCZ0F

Model No.	Features	Detecting and Emitting Gap (mm)	Slit width (mm)	Electro-optical Characteristics							
				Current transfer ratio			Response time				
				CTR (%)	I <sub>F</sub> (mA)	V <sub>CE</sub> (V)	t <sub>r</sub> (μs) TYP.	I <sub>C</sub> (mA)	R <sub>L</sub> (Ω)	V <sub>CE</sub> (V)	
<b>Transmissive, Single Transistor Output Case Type</b>											
GP1S51VJ000F	High resolution, side mounting type	3.0	0.5	2.5	20	5	3	2	100	2	
GP1S52VJ000F	High resolution, PWB mounting type	3.0	0.5	2.5	20	5	3	2	100	2	
GP1S53VJ000F	High resolution, PWB mounting type	5.0	0.5	2.5	20	5	3	2	100	2	
GP1S58VJ000F	High resolution, with positioning pin, PWB mounting type	5.0	0.5	2.5	20	5	3	2	100	2	

Model No.	Features	Detecting and Emitting Gap (mm)	Slit Width (mm)	Electro-optical Characteristics							
				Threshold Input Current		Propagation Delay Time					
				I <sub>FLH</sub> (mA) MAX.	V <sub>CC</sub> (V)	T <sub>PLH</sub> (μs) TYP.	T <sub>PHL</sub> (μs) TYP.	I <sub>F</sub> (mA)	R <sub>L</sub> (Ω)	V <sub>CC</sub> (V)	
<b>OPIC Case Type</b>											
GP1A50HRJ00F	Both-side mounting type	3.0	0.5	5	5	3	5	5	280	5	
GP1A51HRJ00F	Side mounting type	3.0	0.5	5	5	3	5	5	280	5	
GP1A52HRJ00F	PWB mounting type	3.0	0.5	5	5	3	5	5	280	5	
GP1A53HRJ00F	PWB mounting type	5.0	0.5	8	5	3	5	8	280	5	
GP1A57HRJ00F	PWB mounting type, with positioning pin	10.0	1.8	7	5	3	5	7	280	5	



GP1S51VJ000F



GP1S52VJ000F



GP1S53VJ000F



GP1S58VJ000F



GP1A50HRJ00F



GP1A51HRJ00F



GP1A52HRJ00F



GP1A53HRJ00F



GP1A57HRJ00F

## Photointerrupters (Cont'd)

Model No.	Features	Detecting and Emitting Gap (mm)	Slit Width (mm)	Electro-optical Characteristics					
				Supply Voltage $V_{CC}$ (V)		Low Level Output Voltage			
				MIN.	MAX.	$V_{OL}$ (V) MAX.	Light Cut-off	$I_{OL}$ (mA)	$V_{CC}$ (V)
<b>OPIC Type with 3-pin Connector</b>									
GP1A05AJ000F	Either-side mounting type	5.0	0.5	4.5	5.5	0.35	No	16	5

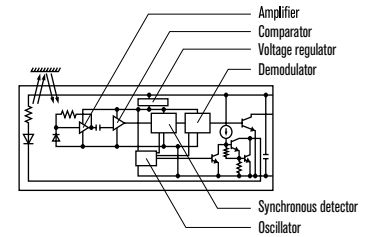
Model No.	Features	Optimum Detecting Distance (mm)	Electro-optical Characteristics						
			Supply Voltage $V_{CC}$ (V)		Dissipation Current		Low Level Output Voltage		
			MIN.	MAX.	$I_{CC}$ (mA) MAX.	$V_{CC}$ (V)	$V_{OL}$ (V) MAX.	$V_{CC}$ (V)	
<b>OPIC Output with 3-pin Connector</b>									
GP2A200LCS0F	Multi types of paper detectable, light modulation type, with connector, sensitivity adjusted	5 to 15	4.75	5.25	30	5	0.4	5	
GP2A25J0000F	Multi types of paper detectable, light modulation type, with connector, sensitivity adjusted	3 to 7	4.75	5.25	30	5	0.4	5	
GP2A231LRS0F	Compact, hook type, multi types of paper detectable, light modulation type, with connector, sensitivity adjusted	3 to 7	4.75	5.25	20	5	0.4	5	
GP2A25NJJ00F	Multi types of paper detectable, light modulation type, sensitivity adjusted, applicable to inverter fluorescent lamp, built-in visible light cut filter	3 to 6	4.75	5.25	30	5	0.4	5	



GP1A05AJ000F

GP2A200LCS0F, GP2A25J0000F,  
GP2A25NJJ00F

GP2A231LRS0F



## Photointerrupters (Cont'd)

Model No.	Features	Focal Distance (mm)	Electro-optical Characteristics							
			Current Transfer Ratio			Response Time				
			CTR (%)	I <sub>F</sub> (mA)	V <sub>CE</sub> (V)	t <sub>r</sub> (μs) TYP.	I <sub>C</sub> (mA)	R <sub>L</sub> (Ω)	V <sub>CE</sub> (V)	
<b>Reflective Type</b>										
GP2S700HCP	Compact, long focal distance, surface mounting leadless type	3	1.5	4	2	20	0.1	1,000	2	
GP2S60	Thin (3.2 × 1.7 × 1.1 mm), leadless type	(0.5)	1.75 TYP.	4	2	20	0.1	1,000	2	

## Photointerrupters with Actuator

Model No.	Features	Actuator Lever Starting Torque (Initial) MAX.	Electro-optical Characteristics									
			Light Beam Interrupted					Light Beam Uninterrupted				
			Dissipation Current		Collector Current			Dissipation Current		Collector Current		
			I <sub>CC1</sub> (mA)	V <sub>CC</sub> (V)	I <sub>C1</sub> (μA)	V <sub>CC</sub> (V)	V <sub>O</sub> (V)	I <sub>CC2</sub> (mA)	V <sub>CC</sub> (V)	I <sub>C2</sub> (mA)	V <sub>CC</sub> (V)	V <sub>O</sub> (V)
<b>Transmissive Type, Single Phototransistor Output Type with Actuator and 3-pin Connector</b>												
GP1S44S1J00F	Spring lever type actuator united with connector	1 × 10 <sup>-4</sup> N·m or less	20 MAX.	5	50 MAX.	5	5	20 MAX.	5	0.25 MIN.	5	5



## Optical System Devices

Model No.	Features	Absolute Maximum Ratings		Electro-optical Characteristics					
		V <sub>CC</sub> (V)	Topr (°C)	Distance Measuring Range (cm)	V <sub>OH</sub> (V) MIN.	Dissipation Current			
						V <sub>OL</sub> (V) MAX.	Operating (mA)	Stand-by (μA)	Measured Distance (cm)
<b>Distance Measuring Sensors</b>									
GP2D12J0000F	Distance measuring sensor united with PSD, infrared LED and signal processing circuit, linear voltage output	-0.3 to +7	-10 to +60	10 to 80	V <sub>O</sub> (TYP.) = 0.4 V (at L = 80 cm), ΔV <sub>O</sub> (TYP.) = 2.0 V (at L: 80 cm → 10 cm)		MAX. 50	N/A	N/A
GP2Y0A21YK0F	Distance measuring sensor united with PSD, infrared LED and signal processing circuit, linear voltage output	-0.3 to +7	-10 to +60	10 to 80	V <sub>O</sub> (TYP.) = 0.4 V (at L = 80 cm), ΔV <sub>O</sub> (TYP.) = 1.9 V (at L: 80 cm → 10 cm)		MAX. 40	N/A	N/A
GP2D120XJ00F	Distance measuring sensor united with PSD, infrared LED and signal processing circuit, linear voltage output	-0.3 to +7	-10 to +60	4 to 30	V <sub>O</sub> (TYP.) = 0.4 V (at L = 30 cm), ΔV <sub>O</sub> (TYP.) = 2.25 V (at L = 30 cm → 4 cm)		MAX. 50	N/A	N/A
GP2Y0D805Z0F	Light detector, infrared LED and signal processing circuit, short distance measuring sensor unit, battery drive compatible (operating power supply: 2.7 V to 6.2 V)	-0.3 to +7	-10 to +60	N/A	V <sub>CC</sub> -0.6	0.6	MAX. 6.5	MAX. 8	5
GP2Y0D810Z0F	Light detector, infrared LED and signal processing circuit, short distance measuring sensor unit, battery drive compatible (operating power supply: 2.7 V to 6.2 V)	-0.3 to +7	-10 to +60	N/A	V <sub>CC</sub> -0.6	0.6	MAX. 6.5	MAX. 8	10
GP2D15J0000F	Distance measuring sensor united with PSD, infrared LED and signal processing circuit, digital voltage output	-0.3 to +7	-10 to +60	10 to 80	V <sub>CC</sub> -0.3	0.6	MAX. 50	N/A	24
GP2Y0D21YK0F	Distance measuring sensor united with PSD, infrared LED and signal processing circuit, digital voltage output	-0.3 to +7	-10 to +60	10 to 80	V <sub>CC</sub> -0.3	0.6	MAX. 40	N/A	24
GP2D150AJ00F	Distance measuring sensor united with PSD, infrared LED and signal processing circuit, digital voltage output	-0.3 to +7	-10 to +60	3 to 30	V <sub>CC</sub> -0.3	0.6	MAX. 50	N/A	15
GP2Y0D02YK0F	Distance measuring sensor united with PSD infrared LED and signal processing circuit, long distance measuring sensor unit (No external control signal required), digital voltage output according to the measuredDistance	-0.3 to +7	-10 to +60	20 to 150	V <sub>CC</sub> -0.3	0.6	MAX. 50	N/A	80
GP2Y0A02YK0F	Distance measuring sensor united with PSD, infrared LED and signal processing circuit	-0.3 to +7	-10 to +60	20 to 150	V <sub>O</sub> (TYP.) = 0.4 V (at L = 150 cm), ΔV <sub>O</sub> (TYP.) = 2.0 V (at L = 150 cm → 20 cm)		MAX. 50	N/A	N/A
GP2Y0A700K0F	Distance measuring sensor united with PSD, infrared LED and signal processing circuit	-0.3 to +7	-10 to +60	100 to 550	V <sub>O</sub> (TYP.) = 2.5 V (at L = 100 cm), ΔV <sub>O</sub> (TYP.) = 0.7 V (at L = 100 cm → 200 cm)		TYP. 30	N/A	N/A



GP2D12J0000F, GP2Y0A21YK0F,  
GP2D120XJ00F, GP2D15J0000F,  
GP2Y0D21YK0F, GP2D150AJ00F



GP2Y0D805Z0F, GP2Y0D810Z0F



GP2Y0D02YK0F, GP2Y0A02YK0F



GP2Y0A700K0F

## Emitters (Infrared)

Model No.	Features	Absolute Maximum Ratings				Electro-optical Characteristics							
						$\phi_e$ (mW)		VF (V)				$\Delta\theta$ (°) TYP.	$\lambda_p$ (nm) TYP.
		$I_F$ (mA)	$V_R$ (V)	P (mW)	Topr (°C)	MIN.	TYP.	$I_F$ (mA)	TYP.	MAX.	$I_F$ (mA)		
<b>Infrared Emitting Diodes</b>													
GL100MNOMP	Surface mounting leadless type, epoxy resin board with lens	50	6	75	-30 to +85	1.0	3.0 (MAX.)	20	1.2	1.4	20	±10	940
GL100MN1MP	Surface mounting leadless type, epoxy resin board with lens, high output type	50	6	75	-30 to +85	2.0	6.0 (MAX.)	20	1.2	1.5	20	±10	940

## Detectors (Infrared)

Model No.	Features	Absolute Maximum Ratings				Electro-optical Characteristics							
						$I_C$ (mA)				$I_{CE0}$ (A)		$\Delta\theta$ (°) TYP.	$\lambda_p$ (nm) TYP.
		$V_{CE0}$ (V)	$P_C$ (mW)	Topr (°C)	MIN.	MAX.	$V_{CE}$ (V)	$E_e$ (mW/cm <sup>2</sup> )	MAX.	$V_{CE}$ (V)			
<b>Phototransistors</b>													
PT100MCOMP	Surface mounting	35	75	-30 to +85	1.7	5.1	5	1	$1 \times 10^{-7}$	20	±15	900	
PT100MFOMP	Leadless type	35	75	-30 to +85	1.15	3.45	5	1	$1 \times 10^{-7}$	20	±15	910	
PT100MF1MP1	Top view taping	35	75	-30 to +85	0.2	1.2	5	0.01	$1 \times 10^{-6}$	10	±15	860	



GL100MNOMP, GL100MN1MP

PT100MCOMP, PT100MFOMP,  
PT100MF1MP

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