



■ Photointerrupter Lineup

<Transmissive type>

Output type	Package type	Outline	Mounting method	Model No. (series)	Page	
Single phototransistor	Compact		PWB mounting type	GP1S396HCP0F / GP1S09xHCZ0F / GP1S19xHCZ0F	33	
			Surface-mount type	GP1S396HCPSF / GP1S296HCPSF / GP1S092HCPIF / GP1S19xHCxSF	33	
	Case type		PWB mounting type	GP1S5x series	34	
			Horizontal slit	PWB mounting type	GP1S59J0000F	34
			General purpose	Snap-in	GP1S173LCS2F / GP1S273LCS1F	34
With connector						
Digital output (OPIC output)	Compact	High resolution	PWB mounting type	★GP1A396HCP0F	35	
	Case type		Surface-mount type	★GP1A396HCPSF	35	
			PWB mounting type	GP1A5x series	35	
	With connector	Wide gap	PWB mounting type	GP1A57HRJ00F	35	
		General purpose	Snap-in	GP1A173LCS3F / GP1A173LCSVF	36	

<Reflective type>

Output type	Package type	Outline	Mounting method	Model No. (series)	Page
Single phototransistor	Leadless	Long focal distance	Surface-mount type	GP2S700HCP	36
High response speed	Compact, thin (leadless)	General purpose	Surface-mount type	GP2S60	36
OPIC output	With connector	Light modulation type, Sensitivity adjusted	Screw mounting type/ Compact snap-in/ Inverter light countermeasures	GP2A25 series / GP2A28 series / GP2A200LCS0F / GP2A230LRS0F / GP2A230LRS0F / ★GP2A430LCSAF / GP2A240LCS0F / GP2A250LCS0F	37

The model marked with ▲ may not be available in the near future. Contact with SHARP for details before use.



■ Photointerrupters

<Transmissive type>

◆Single Phototransistor Output

<Compact type>

(Ta = 25°C)

Model No.	Internal connection diagram	Features	Detecting and emitting gap (mm)	Slit width (mm)	Electro-optical characteristics						
					Current transfer ratio			Response time			
					CTR (%) MIN.	IF (mA)	VCE (V)	tr (μs) TYP.	IC (mA)	RL (kΩ)	VCE (V)
GP1S092HCPIF		Wide gap, for soldering reflow, surface mount compatible, with positioning boss (4.5 × 2.6 × 2.9 [height] mm)	2.0	0.3	2.0	5	5	50	0.1	1	5
GP1S093HCZ0F		Wide gap (4.5 × 2.6 × 2.9 [height] mm)	2.0	0.3	2.0	5	5	50	0.1	1	5
GP1S094HCZ0F		Wide gap, with positioning pin, (5.5 × 2.6 × 4.8 [height] mm)	3.0	0.3	0.8	5	5	50	0.1	1	5
GP1S194HCZ0F		Compact, wide gap, size: 3.6 × 2.0 × 2.7 (height) mm	1.7	0.3	3.0	5	5	50	0.1	1	5
GP1S195HCPSF		Compact, wide gap, surface mount compatible, size: 3.4 × 2.0 × 2.7 (height) mm	1.5	0.3	3.0	5	5	50	0.1	1	5
GP1S196HCZ0F		Compact, low profile (3.1 × 2.0 × 2.7 [height] mm)	1.1	0.3	2.0	5	5	50	0.1	1	5
GP1S196HCPSF		Surface mount, for soldering reflow, compact, low profile (3.1 × 2.0 × 2.7 [height] mm)	1.1	0.3	2.0	5	5	50	0.1	1	5
GP1S296HCPSF		Surface mount, for soldering reflow, compact, low profile (2.5 × 1.8 × 1.9 [height] mm)	1.0	0.2	3.0	5	5	50	0.1	1	5
GP1S396HCP0F		Straight lead type, compact, low profile (2.26 × 1.4 × 1.6 [height] mm)	1.2	0.12	2.0	5	5	30	0.1	1	5
GP1S396HCPSF		Surface mount, for soldering reflow, compact, low profile (2.26 × 1.4 × 1.6 [height] mm)	1.2	0.12	2.0	5	5	30	0.1	1	5
GP1S097HCZ0F		High resolution, wide gap, with mounting hole (4.5 × 2.6 × 4.5 [height] mm)	2.0	0.3	2.0	5	5	50	0.1	1	5

Note: Topr: -25 to +85°C

GP1SxxxHCZxF: Sleeve package, GP1SxxxHCPxF: Taped package



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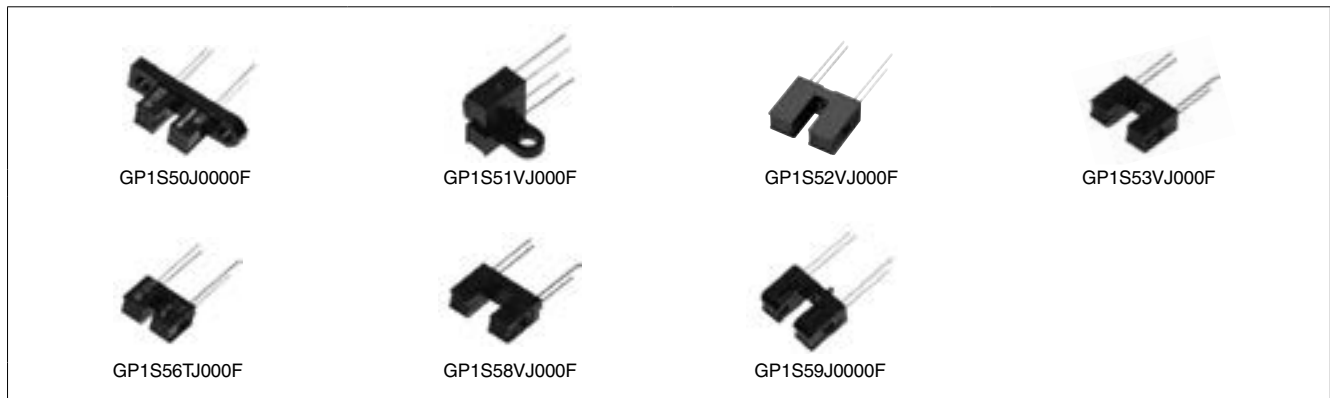
<Case type>

(Ta = 25°C)

Model No.	Internal connection diagram	Features	Detecting and emitting gap (mm)	Slit width (mm)	Electro-optical characteristics						
					Current transfer ratio			Response time			
					CTR (%) MIN.	IF (mA)	VCE (V)	tr (μs) TYP.	IC (mA)	RL (Ω)	VCE (V)
GP1S50J0000F		High resolution, both-side mounting type	3.0	0.5	2.5	20	5	3	2	100	2
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
GP1S56TJ000F▲		High resolution, with positioning pin, PWB mounting type	2.0	0.15	2.0	20	5	38	0.5	1 000	2
GP1S58VJ000F		High resolution, with positioning pin, PWB mounting type	5.0	0.5	2.5	20	5	3	2	100	2
GP1S59J0000F		High resolution, horizontal slit, with positioning pin, PWB mounting type	4.2	0.5	2.5	20	5	3	2	100	2

Note: Topr: -25 to +85°C

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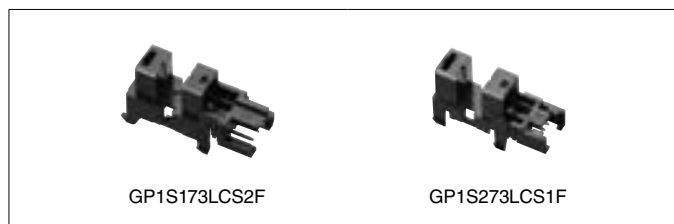


<With connector>

(Ta = 25°C)

Model No.	Internal connection diagram	Features	Detecting and emitting gap (mm)	Slit width (mm)	Electro-optical characteristics						
					Current transfer ratio			Response time			
					CTR (%) MIN.	IF (mA)	VCE (V)	tr (μs) TYP.	IC (mA)	RL (Ω)	VCE (V)
GP1S173LCS2F		Snap-in mounting integrated connector type Applicable to 3 kinds of thickness of mounting boards	5.0	0.5	2.5	20	5	3	2	100	2
GP1S273LCS1F		Snap-in mounting integrated connector type Applicable to 3 kinds of thickness of mounting boards Compact (Compatible with 1.5 mm pitch connector)	5.0	0.7	2.5	20	5	3	2	100	2

Note: Topr: -30 to +95°C



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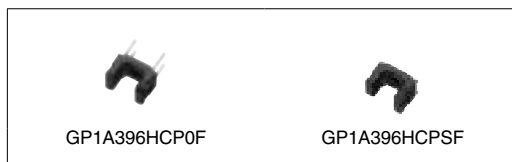
◆OPIC Type (“OPIC” (Optical IC) is a trademark of SHARP Corporation. An OPIC consists of a light-detecting element and signal-processing circuit integrated onto a single chip.)

<Compact type>

(Ta = 25°C)

Model No.	Internal connection diagram	Features	Detecting and emitting gap (mm)	Slit width (mm)	Electro-optical characteristics								
					Threshold input current				Propagation delay time				
					IFLH (mA) MAX.	IFHL (mA) MAX.	VCC (V)	RL (kΩ)	tPLH (μs) TYP.	tPHL (μs) TYP.	IF (mA)	RL (kΩ)	VCC (V)
★GP1A396HCP0F		Compact, high response speed, digital output, PWB mounting	1.2	0.12	2.85	–	2.5 to 5.5	24 to 30	15	15	5	24	3.3
★GP1A396HCP5F		Compact, high response speed, digital output, surface mount	1.2	0.12	2.85	–	2.5 to 5.5	24 to 30	15	15	5	24	3.3

Note: Topr = –25 to +85°C



<Case type>

(Ta = 25°C)

Model No.	Internal connection diagram	Features	Detecting and emitting gap (mm)	Slit width (mm)	Electro-optical characteristics							
					Threshold input current			Propagation delay time				
					IFLH (mA) MAX.	IFHL (mA) MAX.	VCC (V)	tPLH (μs) TYP.	tPHL (μs) TYP.	IF (mA)	RL (Ω)	VCC (V)
GP1A50HRJ00F		Both-side mounting, with screw hole	3.0	0.5	5	–	5	3	5	5	280	5
GP1A51HRJ00F		Side mounting, with screw hole	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
GP1A58HRJ00F		PWB mounting type, with positioning pin	5.0	0.5	8	–	5	3	5	8	280	5
GP1A52LRJ00F		PWB mounting type	3.0	0.5	–	5	5	5	3	5	280	5

Note: Topr = –25 to +85°C



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◆**OPIC Type** (“OPIC” (Optical IC) is a trademark of SHARP Corporation. An OPIC consists of a light-detecting element and signal-processing circuit integrated onto a single chip.)

<With 3-pin connector terminal>

(Ta = 25°C)

Model No.	Internal connection diagram	Features	Detecting and emitting gap (mm)	Slit width (mm)	Electro-optical characteristics					
					Supply voltage V _{CC} (V)		V _{OL} (V) MAX.	Low level output voltage		
					MIN.	MAX.		Light cut-off	I _{oL} (mA)	V _{CC} (V)
GP1A173LCS3F		3 V operation, snap-in mounting integrated connector type ^{*1}	5.0	0.5	2.7	5.5	0.35	No	4	3.3
GP1A173LCSVF		Snap-in mounting integrated connector type ^{*1} , enforced electrostatic discharge (ESD) type	5.0	0.5	4.5	5.5	0.35	No	4	5

Note: Topr: -30 to +95°C

*1 Applicable to 3 kinds of thickness of mounting boards.



■ Photointerrupters

<Reflective type>

◆**Single Phototransistor Output**

<Compact>

(Ta = 25°C)

Model No.	Internal connection diagram	Features	Optimum detecting distance (mm)	Electro-optical characteristics						
				Current transfer ratio			Response time			
				CTR (%) MIN.	I _F (mA)	V _{CE} (V)	t _r (μs) TYP.	I _C (mA)	R _L (kΩ)	V _{CE} (V)
GP2S700HCP		Compact (4 × 3 × 2 [height] mm), long focal distance, surface mounting leadless type	4	1.5	4	2	20	0.1	1	2
GP2S60		Thin (3.2 × 1.7 × 1.1 [height] mm), surface mounting leadless type	1	1.0	4	2	20	0.1	1	2

Note: Topr: -25 to +85°C



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◆ **OPIC Output** (“OPIC” (Optical IC) is a trademark of SHARP Corporation. An OPIC consists of a light-detecting element and signal-processing circuit integrated onto a single chip.)
<With 3-pin connector terminal>

(Ta = 25°C)

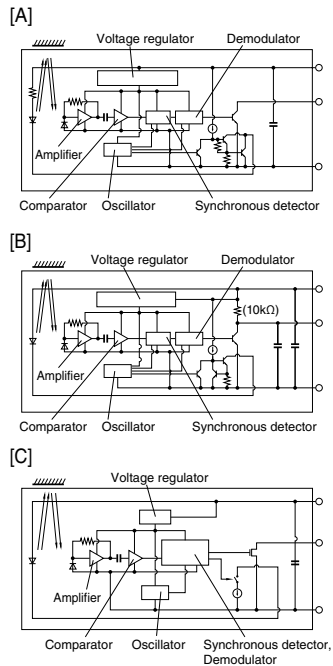
Model No.	Internal connection diagram	Features	Optimum detecting distance (mm)	Electro-optical characteristics					
				Supply voltage V _{CC} (V)		Dissipation current I _{CC} (mA)		Low level output voltage V _{OL} (V)	
				MIN.	MAX.	V _{CC} (V)	MAX.	V _{CC} (V)	V _{CC} (V)
GP2A200LCS0F	(Following diagram [A])	Multiple types of paper detectable, light modulation type, with connector, sensitivity adjusted	5 to 15	4.75	5.25	30*1	5	0.4	5
GP2A240LCS0F		Applicable to inverter fluorescent lamp, light modulation type, with connector, sensitivity adjusted	5 to 15	4.75	5.25	30*1	5	0.4	5
GP2A250LCS0F		Static electricity resistant, applicable to inverter fluorescent lamp, light modulation type, with connector, sensitivity adjusted	2.5 to 12.5	4.75	5.25	30*1	5	0.4	5
GP2A25J0000F	(Following diagram [B])	Multiple types of paper detectable, light modulation type, with connector, sensitivity adjusted	3 to 7	4.75	5.25	30*1	5	0.4	5
GP2A230LRS0F		Compact, screw-clamp type, multiple types of paper detectable, light modulation type, with connector	3 to 7	4.75	5.25	20*1	5	0.4	5
GP2A230LRSAF		Compact, hook type, multiple types of paper detectable, light modulation type, with connector		3.0	5.5	10*1	3.3 to 5	0.4	3.3 to 5
★ GP2A430LCSAF	(Following diagram [C])	Multiple types of paper detectable, light modulation type, with connector, sensitivity adjusted, hook type	3 to 7	4.75	5.25	30*1	5	0.4	5
GP2A25NJ000F	(Following diagram [A])	Multiple types of paper detectable, light modulation type, sensitivity adjusted, improved light-resistance characteristic for inverter lighting, built-in visible light cut filter	3 to 7	4.75	5.25	30*1	5	0.4	5
GP2A25DJ000F		Multiple types of paper detectable, light modulation type, with connector, sensitivity adjusted	3 to 7	4.75	5.25	30*1	5	0.4	5
GP2A28AJ000F		Multiple types of paper detectable, light modulation type, with connector, sensitivity adjusted, hook type	3 to 7	4.75	5.25	30*1	5	0.4	5

Note: Topr: -10 to +60°C (GP2A25J0000F, etc.)

-10 to +70°C (GP2A200LCS0F, GP2A240LCS0F, GP2A250LCS0F, GP2A230LRS0F, GP2A230LRSAF, GP2A430LCSAF)

*1 Smoothing value R_L = ∞

[Internal connection diagram]



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