

## ■ Photointerrupter Lineup

### <Transmissive type>

Output type	Package type		Outline	Mounting method	Model No. (series)	Page
Single phototransistor	Compact			PWB mounting type	GP1S396HCP0F / GP1S09xHCZ0F / GP1S19xHCZ0F	21
				Surface-mount type	GP1S396HCPSF / GP1S296HCPSF / GP1S092HCPIF / GP1S19xHCxSF	21
	Case type			PWB mounting type	GP1S5x series	22
	With connector	General purpose		Snap-in	GP1S173LCS2F / GP1S273LCS1F	22
Digital output						
(OPIC output)	Case type			PWB mounting type	GP1A5x series	23
		Wide gap		PWB mounting type	GP1A57HRJ00F	23
	With connector	General purpose		Snap-in	GP1A173LCS5F	24

### <Reflective type>

Output type	Package type	Outline	Mounting method	Model No. (series)	Page
Single phototransistor	Leadless	Long focal distance	Surface-mount type	GP2S700HCP	24
High response speed	Compact, thin (leadless)	General purpose	Surface-mount type	GP2S60	24
				GP2A25 series / GP2A28 series / GP2A200LCS0F / GP2A230LRS0F / GP2A230LRS0F / GP2A230LRS0F / GP2A430LCS0F / GP2A430LCSAF / ☆GP2A431LCSAF / GP2A240LCS0F / GP2A250LCS0F	
OPIC output	With connector	Light modulation type, Sensitivity adjusted	Screw mounting type/ Compact snap-in/ Inverter light countermeasures		25

## ■ Photointerrupters

### <Transmissive type>

#### ◆ Single Phototransistor Output

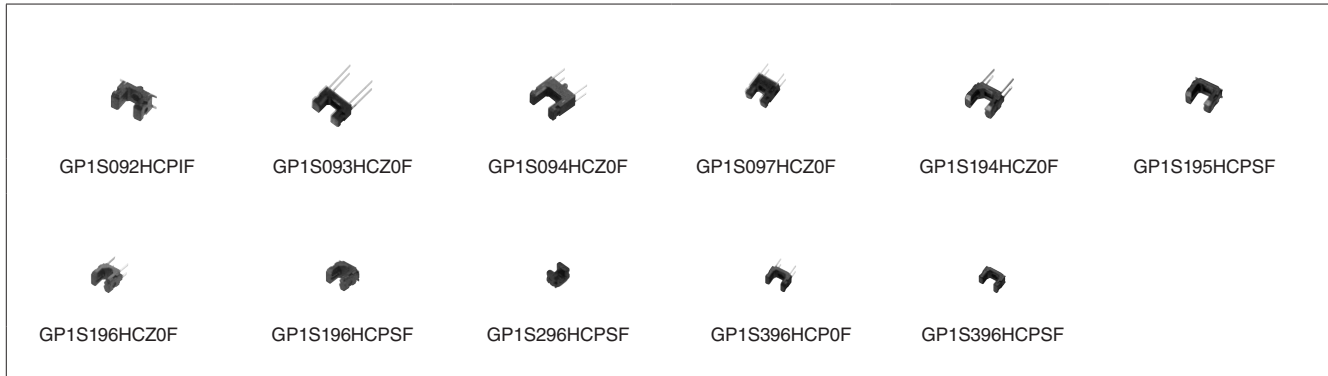
### <Compact type>

(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
GP1S097HCZ0F		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
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

Note: Topr: -25 to +85°C

GP1SxxxHCZxF: Sleeve package, GP1SxxxHCPxF: Taped package



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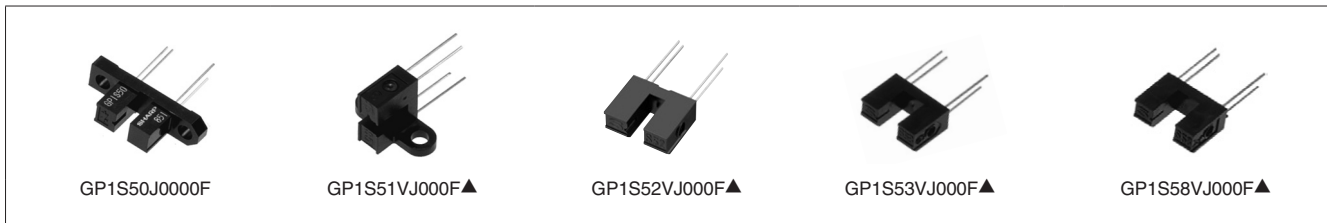
## <Case type>

(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
GP1S58VJ000F▲		High resolution, with positioning pin, PWB mounting type	5.0	0.5	2.5	20	5	3	2	100	2

Note: Topr: -25 to +85°C

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

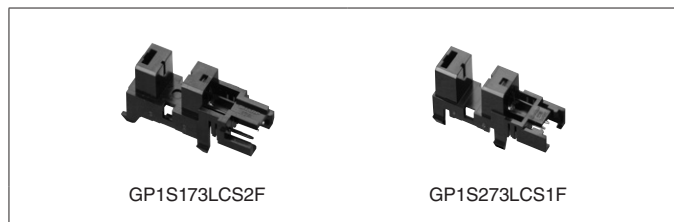


## <With connector>

(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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

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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.)

## <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				
					I <sub>FLH</sub> (mA) MAX.	I <sub>FHL</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)
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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<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 <sub>CC</sub> (V)		Low level output voltage			
					MIN.	MAX.	V <sub>OL</sub> (V) MAX.	Light cut-off	I <sub>OL</sub> (mA)	V <sub>CC</sub> (V)
GP1A173LCS5F		Snap-in mounting integrated connector type <sup>*1</sup> 3.3 V / 5 V operation enforced electrostatic discharge (ESD) increased power line noise tolerance	5.0	0.5	3.0	5.5	0.35	No	4	3.3 5.0

Note: Topr: -30 to +95°C

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




## ■ Photointerrupters

<Reflective type>

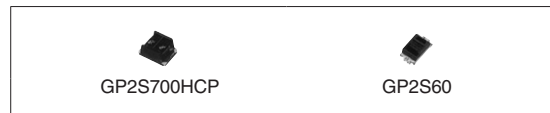
◆**Single Phototransistor Output**

<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 <sub>F</sub> (mA)	V <sub>CE</sub> (V)	t <sub>r</sub> (μs) TYP.	I <sub>C</sub> (mA)	R <sub>L</sub> (kΩ)	V <sub>CE</sub> (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 Vcc (V)		Dissipation current Icc (mA)		Low level output voltage VOL (V)	
				MIN.	MAX.	MAX.	Vcc (V)	MAX.	Vcc (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
GP2A230LRS0F		Compact, hook type, multiple types of paper detectable, light modulation type, with connector		4.75	5.25	20*1	5	0.4	5
GP2A430LCS0F	(Following diagram [C])	Compact, screw-clamp 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		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
☆GP2A431LCSAF		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
GP2A25NJJ00F	(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

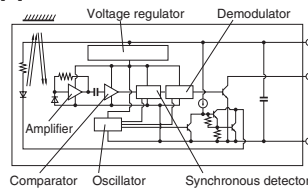
Note: Topr: -10 to +60°C (GP2A25J0000F, etc.)

-10 to +70°C (GP2A200LCS0F, GP2A240LCS0F, GP2A250LCS0F, GP2A230LRS0F, GP2A230LRS0F, GP2A430LCS0F, GP2A430LCSAF, GP2A431LCSAF)

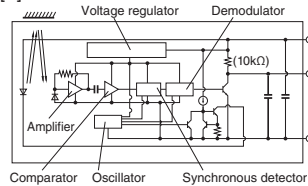
\*1 Smoothing value RL = ∞

[Internal connection diagram]

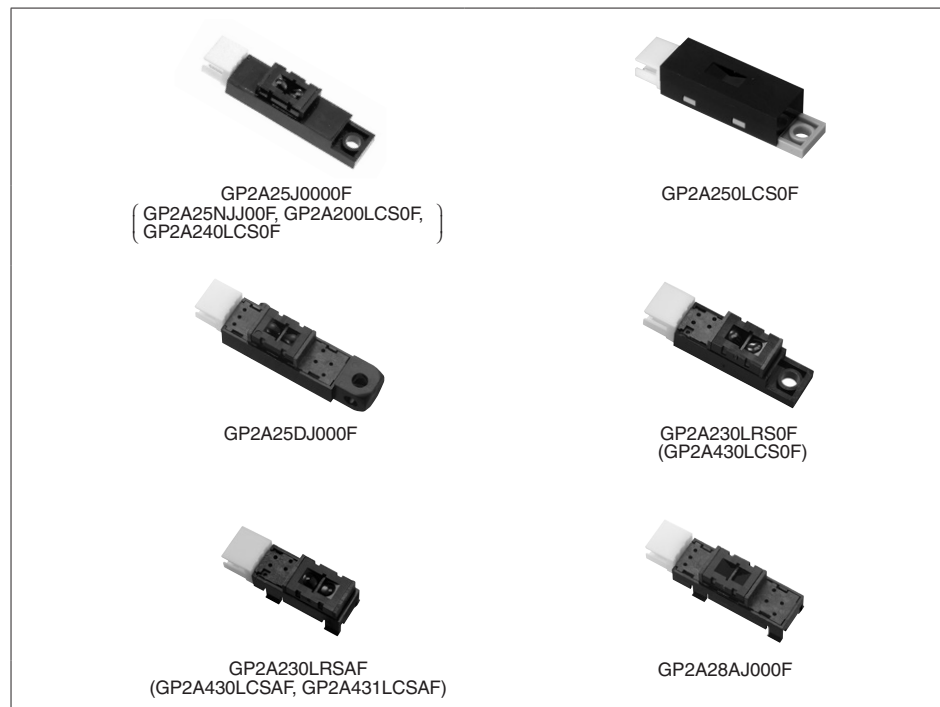
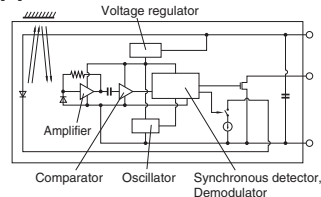
[A]



[B]



[C]



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