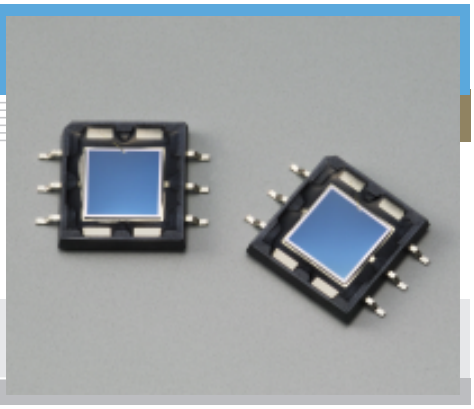
Si PIN photodiode
S7478 series

Large active area (5 × 5 mm) photosensor with high reliability



S7478 series is a PIN photodiode having a large active area (5 × 5 mm) and surface-mount flat package with leads. S7478 series offers high sensitivity and improved characteristics in temperature cycle tests.

Features

- Surface-mount plastic package (9 × 9.6 mm)
- Large active area: 5 × 5 mm
- Operating temperature range: -40 to +100 ˚C
  Storage temperature range : -40 to +125 ˚C
- High sensitivity: 0.72 A/W (λ=960 nm)
- Visible-cut type (S7478-01) available

Applications

- Automobile sensor
  (Vehicle and traffic information system, laser radar, front window frost sensor, rain sensor)
- Spatial light transmission

■ Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Value	Unit
Reverse voltage	V_R Max.	20	V
Operating temperature	Topr	-40 to +100	°C
Storage temperature	Tstg	-40 to +125	°C

■ Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	S7478			S7478-01			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Spectral response range	λ		-	320 to 1100	-	-	780 to 1100	-	nm
Peak sensitivity wavelength	λp		-	960	-	-	960	-	nm
Photo sensitivity	S	λ=λp	0.6	0.72	-	0.6	0.7	-	A/W
Short circuit current	Isc	100 lx, 2856 K	-	26	-	-	16	-	μA
Dark current	I_D	V_R=10 V	-	0.4	5	-	0.4	5	nA
Cut-off frequency	fc	V_R=10 V, R_L=50 Ω -3 dB *	10	20	-	8	15	-	MHz
Terminal capacitance	Ct	V_R=10 V, f=1 MHz	-	40	80	-	40	80	pF

* S7478 : λ=780 nm
S7478-01: λ=850 nm

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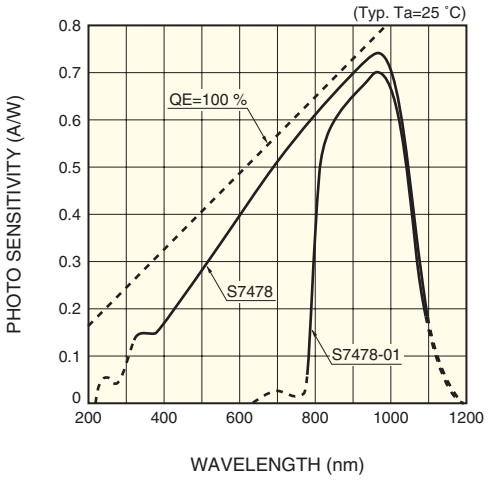
■ Spectral response



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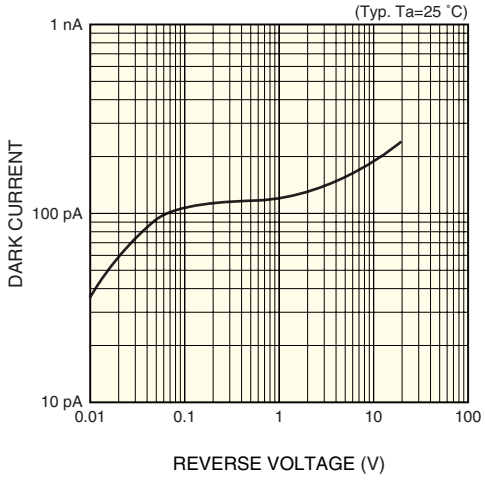
■ Dark current vs. reverse voltage



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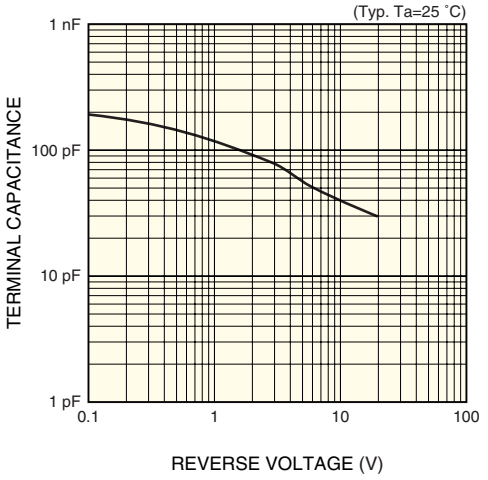
■ Terminal capacitance vs. reverse voltage



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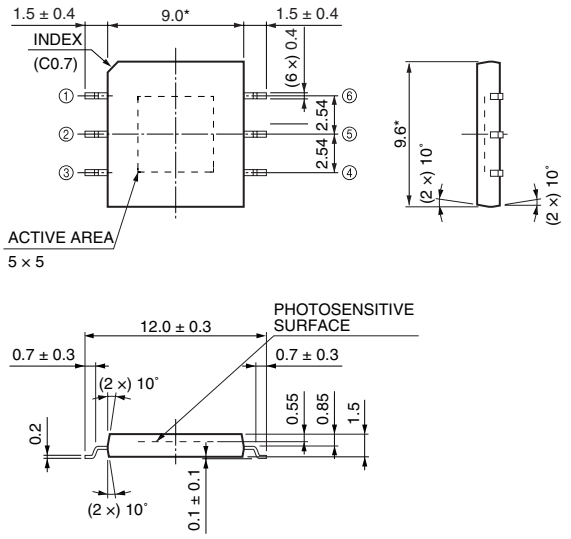
■ Dimensional outline (unit: mm)



① ANODE
② CATHODE
③ NC
④ NC
⑤ CATHODE
⑥ NC

Tolerance unless otherwise noted: ±0.1
Chip position accuracy
with respect to the
package dimensions marked *
X, Y ≤ ±0.2
θ ≤ ±2˚

KPINA0062EA

HAMAMATSU PHOTONICS K.K., Solid State Division
1126-1 Ichino-cho, Hamamatsu City, 435-8558 Japan, Telephone: (81) 053-434-3311, Fax: (81) 053-434-5184, http://www.hamamatsu.com
U.S.A.: Hamamatsu Corporation: 360 Foothill Road, P.O.Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1) 908-231-0960, Fax: (1) 908-231-1218
Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49) 08152-3750, Fax: (49) 08152-2658
France: Hamamatsu Photonics France S.A.R.L.: 8, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: 33-(1) 69 53 71 00, Fax: 33-(1) 69 53 71 10
United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, United Kingdom, Telephone: (44) 1707-294888, Fax: (44) 1707-325777
North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171 41 Solna, Sweden, Telephone: (46) 8-509-031-00, Fax: (46) 8-509-031-01
Italy: Hamamatsu Photonics Italia S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39) 02-935-81-733, Fax: (39) 02-935-81-741

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