

S7141-10

Photo IC for 50 Mbps optical link

Features

- DC to 50 Mbps data transmission
- Miniature size due to monolithic IC structure
- Inversion logic
- Digital output
- Designed to be used with L8045

Applications

- Data transmission in FA or OA applications subject to large amounts of electro magnetic noise
- High-speed, short distance data transmission
- Burst data transmission

Absolute maximum ratings (Ta=25 °C)

| Parameter | Symbol | Value | Unit |
|-----------------------|--------|--|------|
| Power supply | Vcc | -0.5 to +7 | V |
| Output current | Ioh | 10 | mA |
| Power dissipation*1 | P | 250 | mW |
| Operating temperature | Topr | -10 to +70 | °C |
| Storage temperature | Tstg | -40 to +85 | °C |
| Soldering | - | 230 °C, 5 s, at least 1.5 mm away from package surface | - |

*1: Power dissipation decreases at a rate of 1.75 mW/°C above Ta=25 °C

Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

Electrical and optical characteristics (Ta=25 °C)

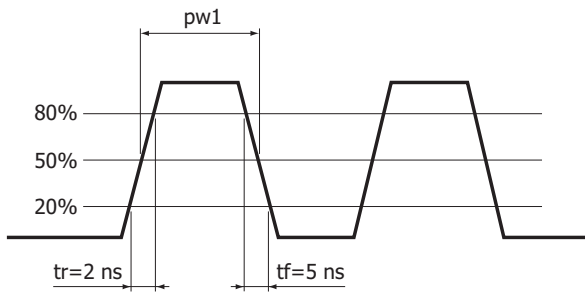
| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|------------------------------|--------|---------------------|------|------|-------|------|
| Data rate | fD | | DC | | 50 | Mbps |
| Supply voltage | Vcc | | 4.75 | - | 5.25 | V |
| Current consumption | Icc | Without light input | - | - | 32 | mA |
| Pulse width distortion | ΔT | | -6 | - | +6 | ns |
| Minimum overload | Pimax | *2 *3 | -5 | - | - | dBm |
| Minimum receiver input power | Pimin | *2 *3 | - | - | -17.5 | dBm |
| Rise time | tr | *3 | - | - | 7 | ns |
| Fall time | tf | *3 | - | - | 7 | ns |
| Output voltage | Voh | Ioh=20 μA | 2 | - | - | V |
| | Vol | Iol=-0.6 mA*4 | - | - | 1 | V |

*2: Output from a 1 meter long plastic fiber (GH4001 made by Mitsubishi Rayon) set close to the molded lens.

*3: Evaluated based on the input/output waveforms shown below. Measured with a low-capacitance FET probe (3 pF or less).

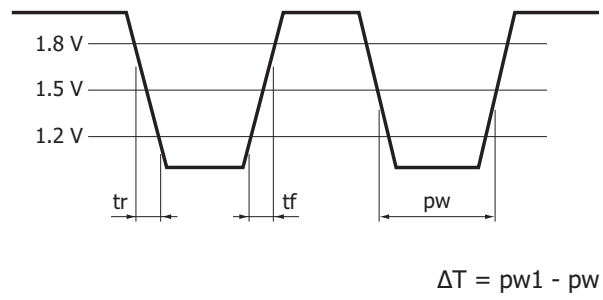
*4: Output is the "L" level (inversion logic) when light is input.

Input optical waveform definition



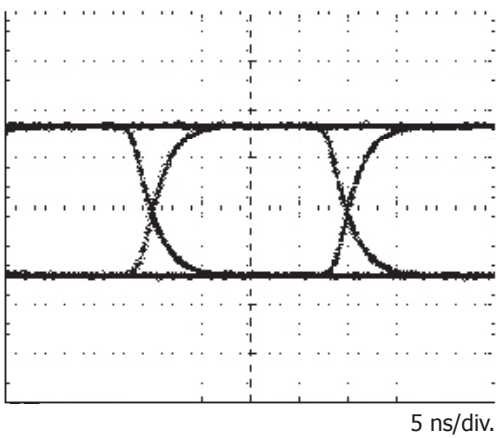
KPIC0022EA

Output optical waveform definition



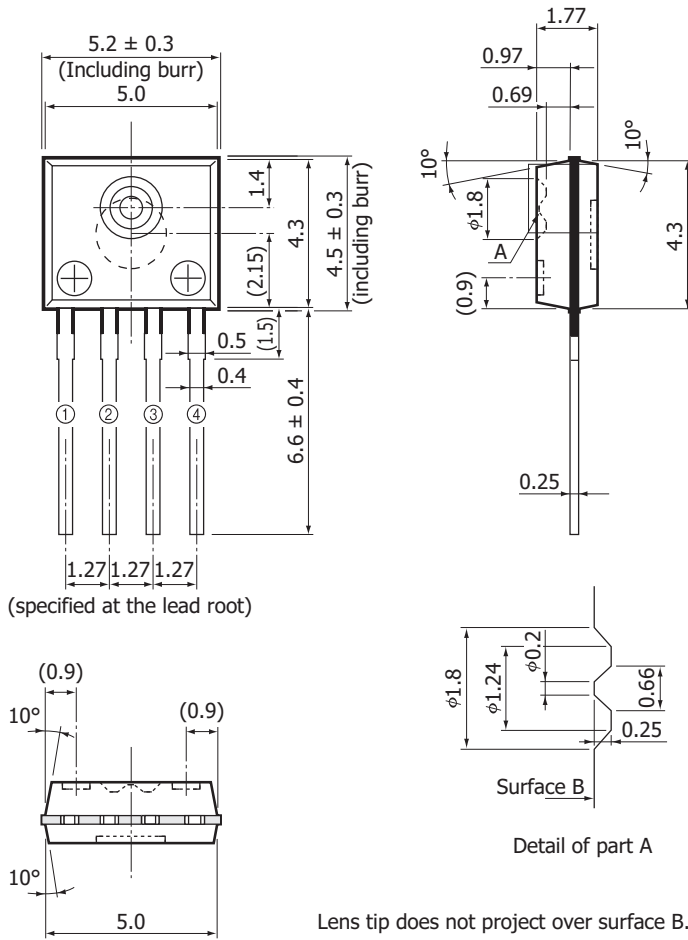
KPIC0023EB

S7141-10 output waveform example
($T_a=25\text{ }^\circ\text{C}$, $P_i=-16\text{ dBm}$, $V_{cc}=5.0\text{ V}$)



KPIC0068EA

Dimensional outline (unit: mm)



- ① GND
- ② OUT
- ③ GND
- ④ Vcc

Tolerance unless otherwise noted: ±0.1, ±2°
 Shaded area indicates burr.
 Values in parentheses indicate reference value.

KP1CA0043EF

Related information

www.hamamatsu.com/sp/ssd/doc_en.html

■ Precautions

- Disclaimer
- Metal, ceramic, plastic products

Information described in this material is current as of October 2017.

Product specifications are subject to change without prior notice due to improvements or other reasons. This document has been carefully prepared and the information contained is believed to be accurate. In rare cases, however, there may be inaccuracies such as text errors. Before using these products, always contact us for the delivery specification sheet to check the latest specifications.

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HAMAMATSU

www.hamamatsu.com

HAMAMATSU PHOTONICS K.K., Solid State Division

1126-1 Ichino-cho, Higashi-ku, Hamamatsu City, 435-8558 Japan, Telephone: (81) 53-434-3311, Fax: (81) 53-434-5184

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, Bridgewater, N.J. 08807, U.S.A., Telephone: (1) 908-231-0960, Fax: (1) 908-231-1218, E-mail: usa@hamamatsu.com

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49) 8152-375-0, Fax: (49) 8152-265-8, E-mail: info@hamamatsu.de

France: Hamamatsu Photonics France S.A.R.L.: 19, 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, E-mail: infos@hamamatsu.fr

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, E-mail: info@hamamatsu.co.uk

North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 16440 Kista, Sweden, Telephone: (46)8-509 031 00, Fax: (46)8-509 031 01, E-mail: info@hamamatsu.se

Italy: Hamamatsu Photonics Italia S.r.l.: Strada della Moia, 1 int. 6, 20020 Arese (Milano), Italy, Telephone: (39)02-93 58 17 33, Fax: (39)02-93 58 17 41, E-mail: info@hamamatsu.it

China: Hamamatsu Photonics (China) Co., Ltd.: B1201, Jiaming Center, No.27 Dongsanhuan Beilu, Chaoyang District, Beijing 100020, China, Telephone: (86) 10-6586-6006, Fax: (86) 10-6586-2866, E-mail: hpc@hamamatsu.com.cn

Taiwan: Hamamatsu Photonics Taiwan Co., Ltd.: 8F-3, No. 158, Section2, Gongdao 5th Road, East District, Hsinchu, 300, Taiwan R.O.C. Telephone: (886)03-659-0080, Fax: (886)03-659-0081, E-mail: info@tw.hpik.co.jp