

MCP

MCP ASSEMBLY

F14844

FEATURES

- MCP-based ion detector (Triode type)
- Compact size
for miniature mass spectrometer
- High pressure operation:
up to 1 Pa
- Effective area: $\phi 14.5$ mm
- Long life characteristic:
3 Coulomb/cm² or more

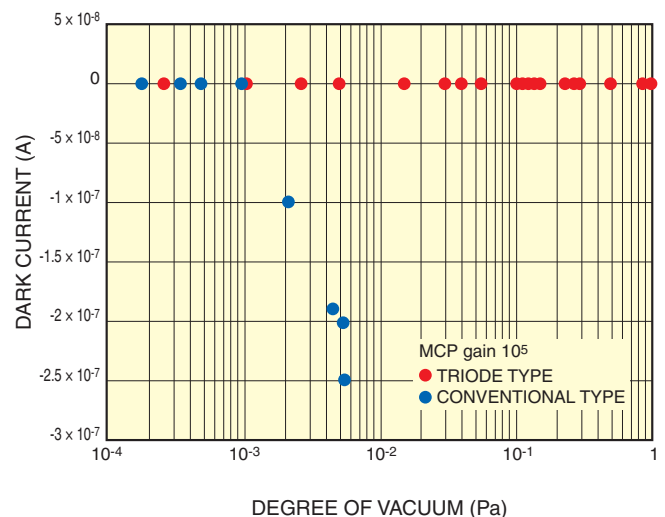


OVERVIEW

Usually MCP-based ion detectors and electron multipliers cannot be operated at high pressure (more than 10^{-2} Pa) because of ion feedback, which causes discharge and a decrease in S/N. However, HAMAMATSU offers a novel MCP-based ion detector for higher pressure operation up to 1 Pa.

This detector combines a triode structure with a novel potential mode, and it has a gain of 1×10^6 at 1 Pa.

OUTPUT STABILITY (Typ.)



SPECIFICATIONS

GENERAL

| Parameter | Value | Unit |
|------------------------|-------|--------|
| MCP channel diameter | 12 | μm |
| Bias angle | 8 | degree |
| Effective area | φ14.5 | mm |
| Number of MCPs | 2 | — |
| Open area ratio (Typ.) | 60 | % |

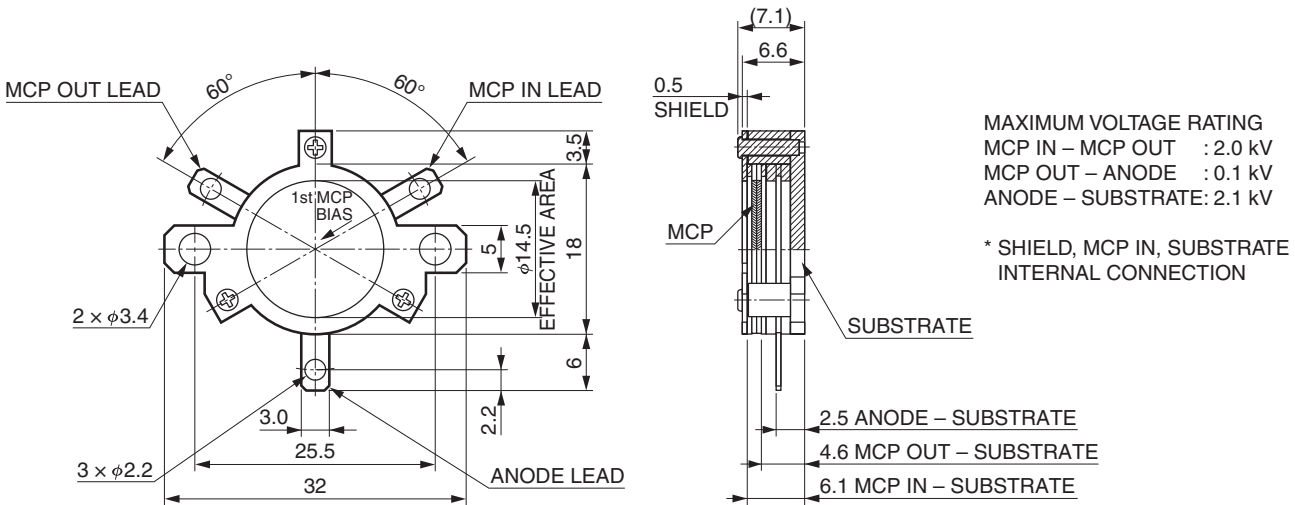
ELECTRICAL CHARACTERISTICS

| Parameter | Value | Unit |
|----------------------------------|-------------------------------------|-----------------------------------|
| Gain (Min.) [Ⓐ] | 1×10^6 | — |
| Resistance (Typ.) [Ⓐ] | 300 to 600 | MΩ |
| Dark Count (Max.) [Ⓐ] | 3 | s ⁻¹ .cm ⁻² |
| Max. operating pressure | 1 | Pa |
| Operating temperature | 0 to 50 | °C |
| Typical capacitance [Ⓑ] | Between MCP IN LEAD and ANODE LEAD | 5.0 |
| | Between MCP OUT LEAD and ANODE LEAD | 4.0 |

NOTE: [Ⓐ]Supply voltage: 1.0 kV/1 MCP, Vacuum pressure: 1.3×10^{-4} Pa, Operating ambient temperature: +25 °C

[Ⓑ]Measured by A4261A [Hewlett packard]

DIMENSIONAL OUTLINES (Unit: mm)



TMCPA0088EA

Subject to local technical requirements and regulations, availability of products included in this promotional material may vary. Please consult with our sales office.
Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications are subject to change without notice. No patent rights are granted to any of the circuits described herein. ©2019 Hamamatsu Photonics K.K.

HAMAMATSU PHOTONICS K.K. www.hamamatsu.com

HAMAMATSU PHOTONICS K.K., Electron Tube Division

314-5, Shimokanzo, Iwata City, Shizuoka Pref., 438-0193, Japan, Telephone: (81)539/62-5248, Fax: (81)539/62-2205

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, Bridgewater, NJ 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, UK, 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.: 1201 Tower B, Jiaming Center, 27 Dongsanhuan Beilu, Chaoyang District, 100020 Beijing, P.R.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)3-659-0080, Fax: (886)3-659-0081 E-mail: info@hamamatsu.com.tw

TMCP1044E01
AUG. 2019 IP