

### FEATURES

- **Ultra Thin Type: 2.5 mm (Max.)**
  - Detection at closed distance from samples
- **Flexible Lead Out (polyimide film)**
  - Easy system design with a flexible wiring
  - Low outgassing for high vacuum operation
- **Light Weight**

### APPLICATIONS

- SEM
- FIB System
- Mask Aligner
- Electron Beam Measuring System



TMCPF0083

### SPECIFICATIONS

Parameter		Value	Unit
<b>GENERAL</b>			
Assembly Outer Diameter		28.0	mm
Effective Diameter		11.0	mm
Maximum Height		2.5	mm
MCP Channel Diameter		12	μm
MCP Stage Number		2	stage
Centerpipe Inner Diameter		1	mm
Dead Area around Center Hole		4	mm
Electrical Potential	MCP-in	-0.4 to +0.4	kV
	Anode	+2.4 (Max.)	

### MAXIMUM RATINGS

MCP Supply Voltage (In-Out)	2.0	kV
MCP Out-Anode Voltage	0.4	kV
Anode-Substrate Voltage	2.4	kV
Operating Vacuum Condition	Less than $6.7 \times 10^{-4}$ ( $5 \times 10^{-6}$ )	Pa (Torr)
Ambient Temperature	-50 to +70	°C
Baking Temperature	200	°C
Baking Time	8	hours
Vacuum Condition for Baking	Less than $6.7 \times 10^{-4}$ ( $5 \times 10^{-6}$ )	Pa (Torr)

- Not allowed to be baked.

### CHARACTERISTICS

Gain at 1.8kV	$1 \times 10^6$ Min.	—
Plate Resistance	50 to 200	MΩ/MCP
Maximum Linear Output	7% of strip current under uniform input into whole MCP effective area	μA
DC Dark Current at 2kV	$1 \times 10^{-10}$	A
Dark Count at 2kV	3	cps

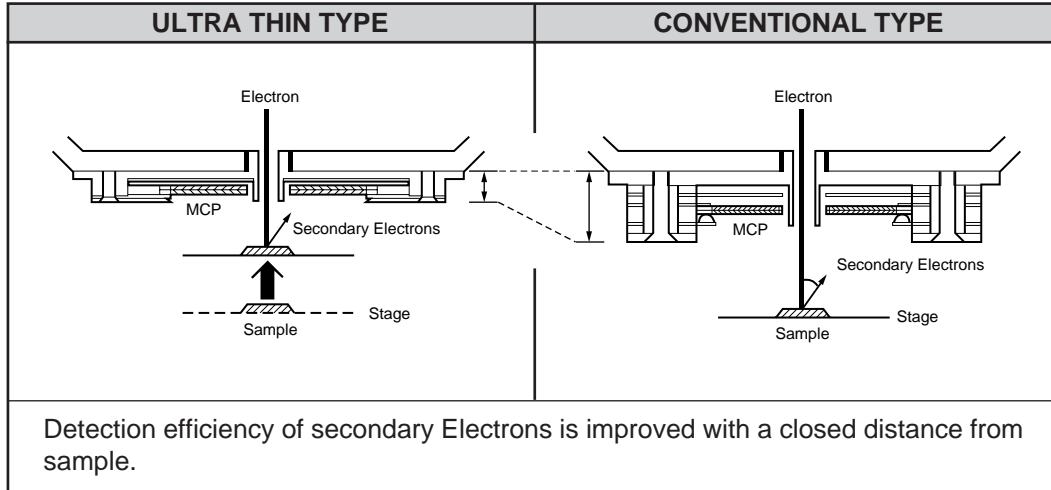
Subject to local technical requirements and regulations, availability of products included in this promotional material may vary. Please consult with our sales office.

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. © 1997 Hamamatsu Photonics K. K.

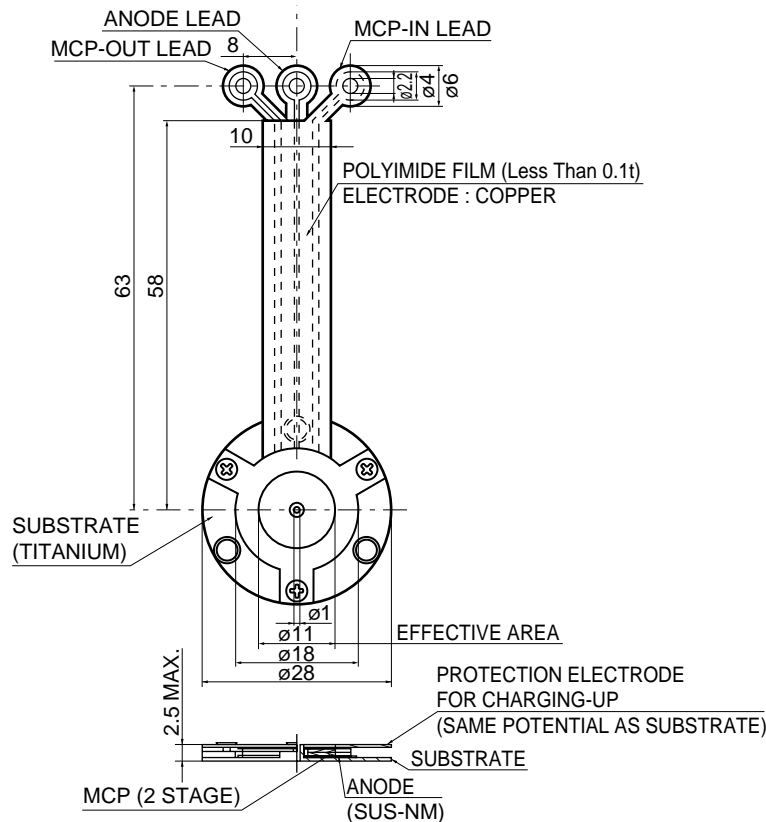
# ULTRA THIN MCP ASSEMBLY WITH CENTER HOLE F6589

Figure 1: Merit of Ultra Thin MCP Assembly with Center Hole



TMCP0039EA

Figure 2: Dimensional Outline (Unit: mm)



TMCPA0031EA

# HAMAMATSU

HAMAMATSU PHOTONICS K.K., Electron Tube Center

314-5, Shimokanzo, Toyooka-village, Iwata-gun, Shizuoka-ken, 438-0193, Japan, Telephone: (81)539/62-5248, Fax: (81)539/62-2205

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, 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)8152-375-0, Fax: (49)8152-2658

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: Lough Point, 2 Gladbeck Way, Windmill Hill, Enfield, Middlesex EN2 7JA, United Kingdom, Telephone: (44)181-367-3560, Fax: (44)181-367-6384

North Europe: Hamamatsu Photonics Norden AB: Färögatan 7, S-164-40 Kista, Sweden, Telephone: (46)8-703-29-50, Fax: (46)8-750-58-95

Italy: Hamamatsu Photonics Italia S.R.L.: Via Della Moia, 1/E 20020 Arese, (Milano), Italy, Telephone: (39)2-935 81 733, Fax: (39)2-935 81 741

TMCP1011E03  
MAR. 1998. CR (9705)  
Printed in Japan