

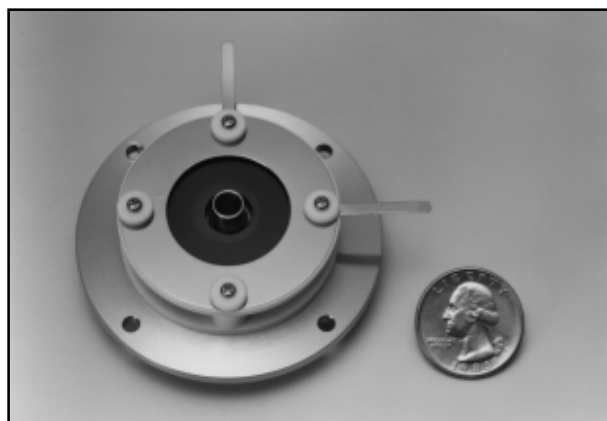
# HAMAMATSU

PRELIMINARY DATA  
MAY 1998

## MCP ASSEMBLY WITH CENTER HOLE FOR REFLECTRON MS F4294-09

### Ideally suited for reflectron mass spectrometer

The F4294-09 is an MCP assembly developed for reflectron mass spectrometers. In spite of having a center hole for beam line, the F4294-09 eliminates ringing phenomena which have been a problem with conventional MCP assemblies with a center hole. The F4294-09 thus makes high-speed ion detection possible. This allows a significant size reduction in the TOF mass spectrometer and a dramatic improvement in mass resolution.



TMCPF0090

### FEATURES

- Center hole for beam line
- High-speed response
- Good output waveform with negligible ringing

### APPLICATION

- Reflectron mass spectrometer

### SPECIFICATIONS

#### GENERAL

Parameter	Value	Unit
Assembly Outer Diameter	69.0	mm
Effective Diameter	27.0	mm
Maximum Height	26.4	mm
MCP Channel Diameter	12	μm
Number of MCP Stages	2	-
Center Hole Diameter	6.0	mm
Center Dead Space Diameter	12.0	mm

#### MAXIMUM RATINGS (Absolute values)

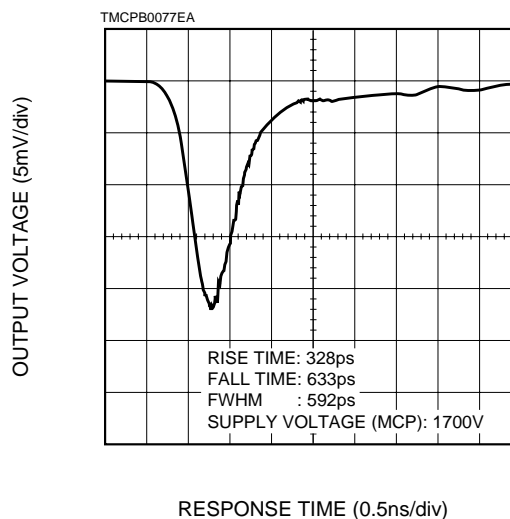
MCP Supply Voltage (In-Out)	2	kV
MCP-Out to Anode Voltage	0.5	kV
Electric Potential at Each Terminal	MCP-In: -2.5 MCP-Out: -0.5 Anode: GND	kV
Operating Vacuum Condition	$6.7 \times 10^{-4}$ ( $5 \times 10^{-6}$ ) Max.	Pa (Torr)
Baking Temperature	- *	°C
Baking Time	- *	h
Baking Vacuum Condition	- *	Pa (Torr)

\* Baking cannot be performed.

#### CHARACTERISTICS (at $1.3 \times 10^{-4}$ Pa ( $1 \times 10^{-6}$ Torr), $T_a = +25^\circ\text{C}$ )

Gain at 2.0kV	$1 \times 10^6$	-
Plate Resistance per MCP	10 to 100	MΩ
Dark Count at 2.0kV	5	cps/cm <sup>2</sup>

Figure 1: Typical Output Waveform

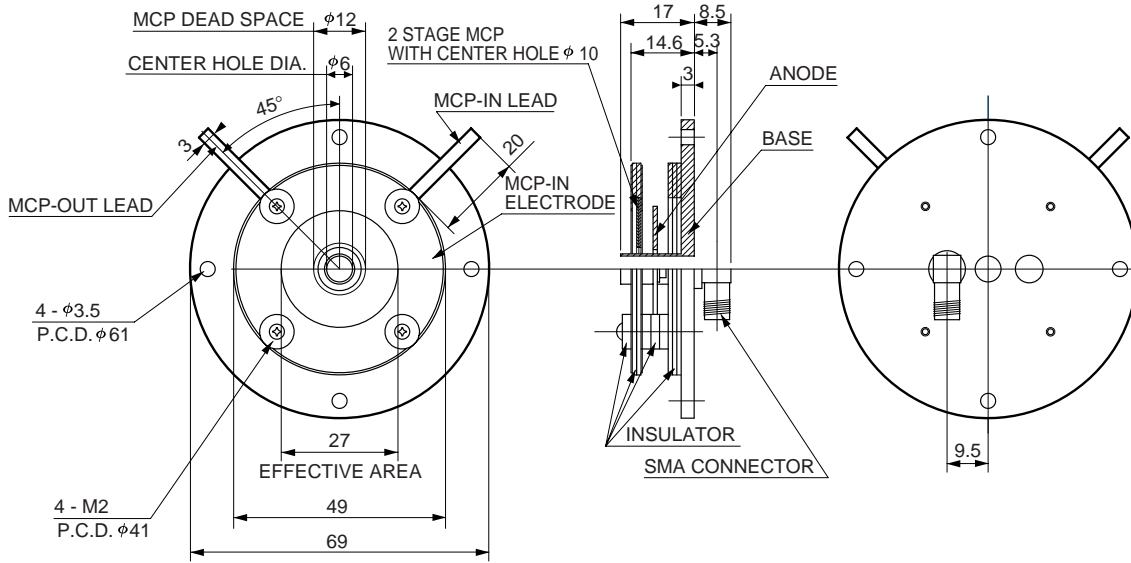


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Figure 2: Dimensional Outlines (Unit: mm)



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