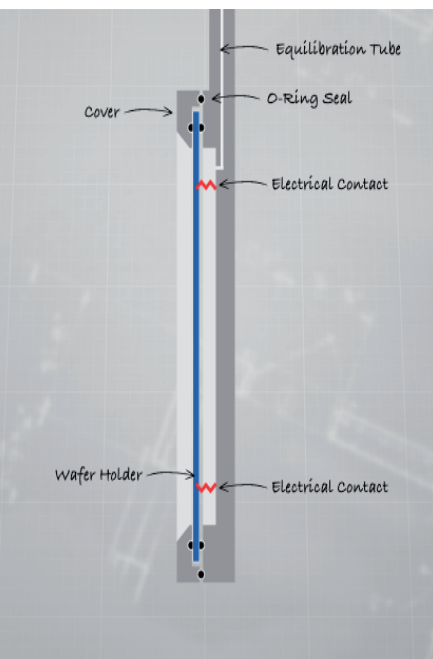


WAFER HOLDER — SINGLE EC WITH ELECTRICAL CONTACTS

PRODUCT INFORMATION SHEET
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Schematic diagram
of the Single EC wafer holder



The Single EC wafer holders are based on the regular Single wafer holders which are in use for more than 15 years in MEMS industry and research. Wafer holders are available for wafers with 3", 4", 5", 6", and 8" diameters. The Single EC series wafer holder protects the wafer's back side and the edge from the etchant solution while allowing to electrically contact the wafers back-side. Should etching capabilities for more than one wafer be required, AMMT offers the Tandem series of holders, which holds two wafers back to back.

All holders are made entirely from PEEK, they are suitable for nearly all etchants (KOH, TMAH, HF, H₃PO₄, etc.) over an extended temperature range. The wafer is sealed by a double precision O-ring system that reduces mechanical stress on the wafer to a minimum. The cover-ring on the front side holds the wafers in place, fixed by six screws. Since the customer-specific wafer thickness is manufactured as a recess into the cover-ring, all screws can be tightened using a regular wrench, regardless of the applied torque. This ensures a minimum mechanical stress on the fragile wafer.

Upon ordering the holder, the wafer thickness machined as a recess into the cover-ring needs to be specified.

The holder tolerates wafers with a thickness of +/- 80 µm around the specified target thickness. If more flexibility is required, additionally cover-rings with different recesses can always be ordered.

Furthermore, the volume between the wafer and holder body is connected by a venting tube to the ambient atmosphere in order to avoid pressure caused by temperature changes.

The regular Single EC series is designed for single-side etching processes that do require electrical contacts to the wafers back-side, e. g. electrochemical etch-stop processes or porous silicon formation. Therefore it is equipped with two gold-plated, spring mounted electrical contacts that are placed according to user requirements. In order to keep maintenance costs low, all O-rings have dimensions in accordance with the American AS-568 standards.

TECHNICAL SPECIFICATIONS

Product code	Single 3 EC	Single 4 EC	Single 5 EC
Wafer size	3"	4"	5"
Internal dimensions			
Width of the O-ring seal	1.8 mm	1.8 mm	1.8 mm
Recommended edge exclusion width	7 mm	7 mm	7 mm
Diameter of usable area	61 mm	86 mm	105 mm
External dimensions			
Diameter	114 mm	140 mm	158 mm
Thickness	26 mm	27 mm	27 mm
Electrical contacts			
Spring loaded pins (gold-plated)	2 contacts (more up request)		
Etchant compatibility	KOH, TMAH, HF and various acids		
Temperature range	5° C - 150 °C		

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Product code	Single 6 EC	Single 6 EC LAA	Single 8
Wafer size	6"	6"	8"
Internal dimensions			
Width of the O-ring seal	1.8 mm	2.62 mm	2.62 mm
Recommended edge exclusion width	7 mm	5.5 mm	5.5 mm
Diameter of usable area	130 mm	140.5 mm	189 mm
External dimensions			
Diameter	186 mm	185 mm	240 mm
Thickness	28 mm	28 mm	30 mm
Electrical contacts			
Spring loaded pins (gold-plated)	2 contacts (more up request)		
Etchant compatibility	KOH, TMAH, HF and various acids		
Temperature range	5° C - 150 °C		

NOTE AMMT manufactures wafer holders for all sizes of wafers. Holders for single chips and rectangular substrates are available as well. Please inquire for specifications and prices.