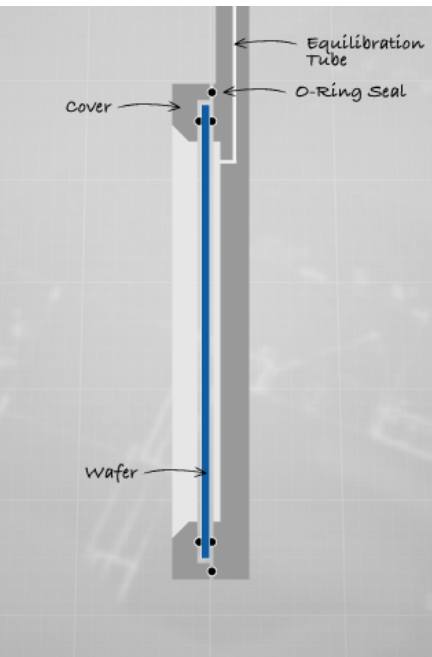


WAFER HOLDER — SINGLE WITH BACKSIDE PROTECTION

PRODUCT INFORMATION SHEET



Single 12 (300 mm) , Single 6 (150 mm) and Single 4 (100 mm)

The Single wafer holders have been used 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 series wafer holder protects the wafer's back side and the edge from the etchant solution. 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, in order to avoid any risk of etchant contamination by metal parts. 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 um 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 series is designed for single-side etching processes that do not require electrical contacts, e. g. time based etching, etch-stop on oxide or nitride layers, SOI wafers, glass/quartz etching in HF, etc.

In order to keep maintenance costs low, all O-rings have dimensions in accordance with the American AS-568 standards.

TECHNICAL SPECIFICATIONS

Product code	Single3	Single4	Single4 LAA*	Single5
Wafer size	3" or 75 mm	4" or 100 mm	4" or 100 mm	5" or 125 mm
Internal dimensions				
Width of the O-ring seal	1.78 mm	1.78 mm	1.78 mm	1.78 mm
Recommended edge exclusion width	7 mm	7 mm	3.75 mm	10 mm
Diameter of usable area	61 mm	86 mm	92.5 mm	105 mm
External dimensions				
Diameter	114 mm	140 mm	140 mm	158 mm
Thickness	26 mm	27 mm	27 mm	28 mm
Materials				
Main Body and cover-ring material	PEEK			
O-ring material	EPDM 70 - upon request FPM (Viton®) or FFPM (Kalrez®)			
Etchant compatibility	KOH, TMAH, HF, H ₃ PO ₄ and various acids			
Temperature range	5° C - 150° C			



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	Single6	Single6 LAA*	Single8
Wafer size	6" or 150 mm	6" or 150 mm	8" or 200 mm
Internal dimensions			
Width of the O-ring seal	1.78 mm	2.62 mm	2.62 mm
Recommended edge exclusion width	10 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
Materials			
Main Body and corver-ring material	PEEK		
O-ring material	EPDM 70- upon request FPM (Viton®) or FFPM (Kalrez®)		
Etchant compatibility	KOH, TMAH, HF, H ₃ PO ₄ and various acids	KOH, TMAH, HF, H ₃ PO ₄ and various acids	KOH, TMAH, HF, H ₃ PO ₄ and various acids
Temperature range	5° C - 150° C	5° C - 150° C	5° C - 150° C



* Wafer holder with enlarge active area option (LAA), the o-ring shape is adapted to wafers flat.



Standard configuration the o-ring shape is fully around.

OPTIONS

The handle length is customer specific. Please inquire for customer specific mounting options.

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.