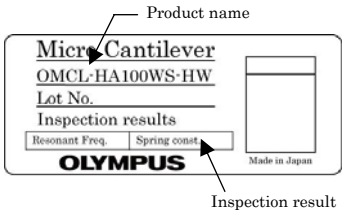
Micro cantilever

Product name

OMCL-HA100WS-HW

Silicon nitride Rectangular cantilever with Sharpened twin tip



OMCL - HA 100 W S - HW

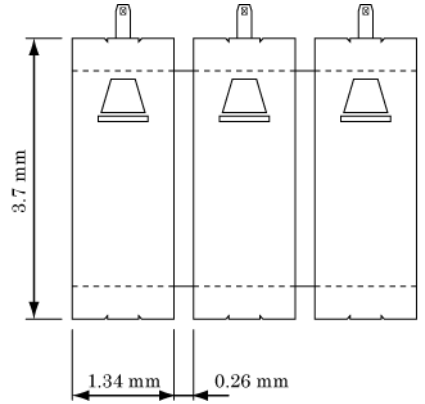
OMCL : Olympus Micro Cantilever
HA : Triangular cantilever
100 : Lever length, 100 μm (rough value)
W : Wedge shape (twin tip)
S : Single side metal coating (reflex coat)
HW: Half wafer (7 strips ,245 chips) / unit

Chip

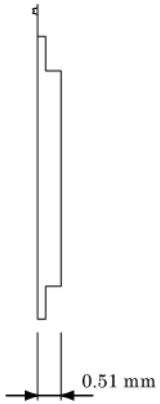
There is a rectangular cantilever on one side of the glass chip.

Dimensions

tip side view



side view



Material

Lever	Silicon nitride (Silicon rich)
Tip	Silicon nitride (Si_3N_4)
Metal coating	Gold / Chromium
Chip	Pyrex glass

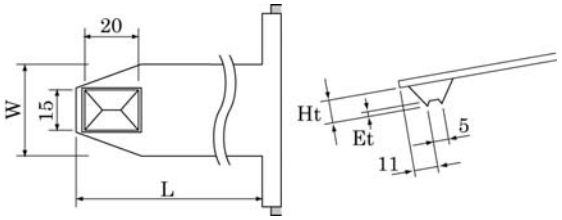
Si3N4, tip material is hard to wear compared with silicon rich silicon nitride, lever material.

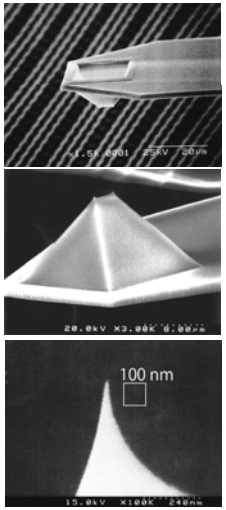
Tip

The tip is a hollow pyramid with oxide sharpened tips (twin tip).
The protrusion on the wedge tip in the side of cantilever free end is surely terminated at one point and will act as a substantial probe.

Dimensions

	Typical value
Whole Tip height Ht (μm)	12
Effective Tip height Et (nm)	0.4
Tip radius (nm)	15(typ.)



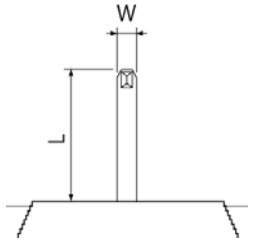


SEM micrograph around the tip apex

Cantilever

Dimensions

	Typical value
Cantilever length L (μm)	108
Cantilever width W (μm)	50
Cantilever thickness t (μm)	2
Metal coat thickness tm (μm)	0.1 (Reflex)



Calculated mechanical properties

	Typical value	Typical range
Resonant frequency (kHz)	160	130 - 220
Spring constant (N/m)	15	7.7 - 23