

## Micro cantilever

### Product name

#### OMCL-AC240TM-W2

Platinum coated Silicon cantilever with tetrahedral tip

|  |                    |                    |
|--|--------------------|--------------------|
| Product name<br><b>Micro Cantilever</b>    |                    |                    |
| OMCL-AC240TM-W2                            |                    |                    |
| LotNo.                                     |                    |                    |
| Typical Value                              | Inspection result  | Quality inspection |
| Resonant frequency<br>70 (kHz)             | -                  |                    |
| Spring constant<br>2 (N/m)                 | (Calculated Value) |                    |
| http://www.olympus.co.jp/probe/<br>OLYMPUS |                    |                    |

Inspection result

### OMCL - AC 240 T M - W 2

OMCL : Olympus Micro Cantilever  
 AC : main application is AC mode measurement  
 240 : Lever length of 240  $\mu\text{m}$   
 T : Tetrahedral tip  
 M : Platinum coated on Tip side  
 W : 375 chips / unit  
 2 : Chip thickness 0.3 mm

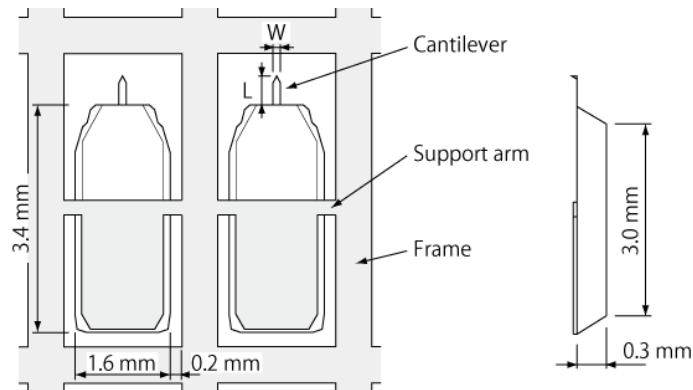
### Chip

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

#### Dimension

tip side view

side view

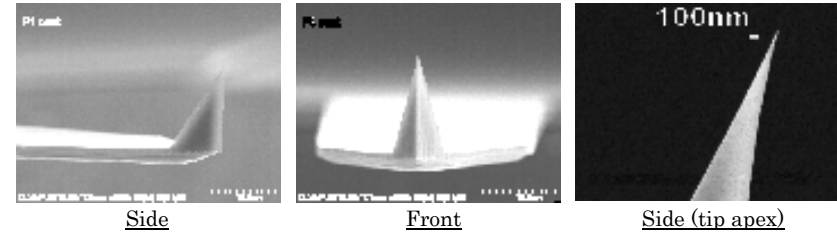


### Material

|                           |   |
|---------------------------|---|
| Tip & Lever               | Silicon (4 - 6 ohm.cm)                    |
| Metal coating (tip side)  | Platinum / Titanium on Silicon cantilever |
| Metal coating (back side) | Aluminum on Silicon cantilever            |
| Chip                      | Silicon (4 - 6 ohm.cm)                    |

### Tip

The tip is a sharpened tetrahedral. The tip is fabricated on the exact end of each cantilever.



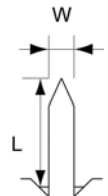
#### Dimension

|                                 | Typical value | Typical range                               |
|---------------------------------|---------------|---|
| Tip height<br>( $\mu\text{m}$ ) | 15            | 9 - 19                                      |
| Tip radius<br>(nm)              | 15            | less than 25                                |
| Tip angle<br>(deg.)             |               | (side) less than 35<br>(front) less than 35 |

### Cantilever

#### Dimension

|  |   |
|--|---|
| Cantilever length<br>L ( $\mu\text{m}$ )     | 240 ( $\pm 20$ )  |
| Cantilever width<br>W ( $\mu\text{m}$ )      | 30 ( $\pm 2$ )  |
| Cantilever thickness<br>t ( $\mu\text{m}$ )  | 2.8 ( $\pm 0.8$ )   |
| Metal coat thickness<br>tm ( $\mu\text{m}$ ) | Platinum 0.02 ( $\pm 0.01$ )<br>Aluminum 0.1 ( $\pm 0.04$ ) |



#### Calculated mechanical properties

|                          | Typical value | Typical range |
|--------------------------|---------------|---------------|
| Resonant frequency (kHz) | 70            | 45 - 95       |
| Spring constant (N/m)    | 2             | 0.5 - 4.4     |

**OLYMPUS**

OMCL-AC240TM-W2

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