

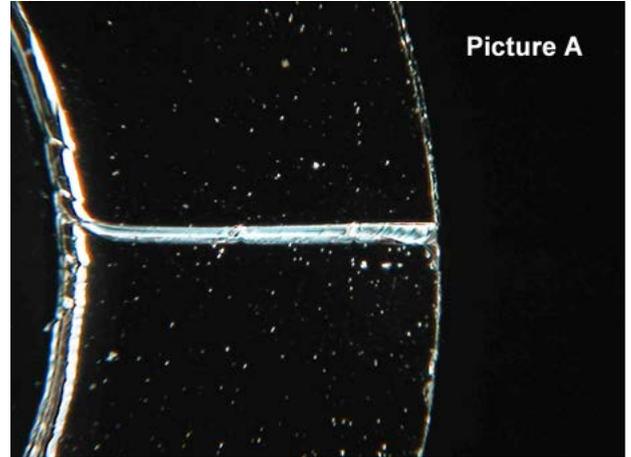
Spoke or Groove Depth on the Mesa Ring

1. This document describes the depth of the GROOVE or SPOKE on our Inverted Mesa blank.

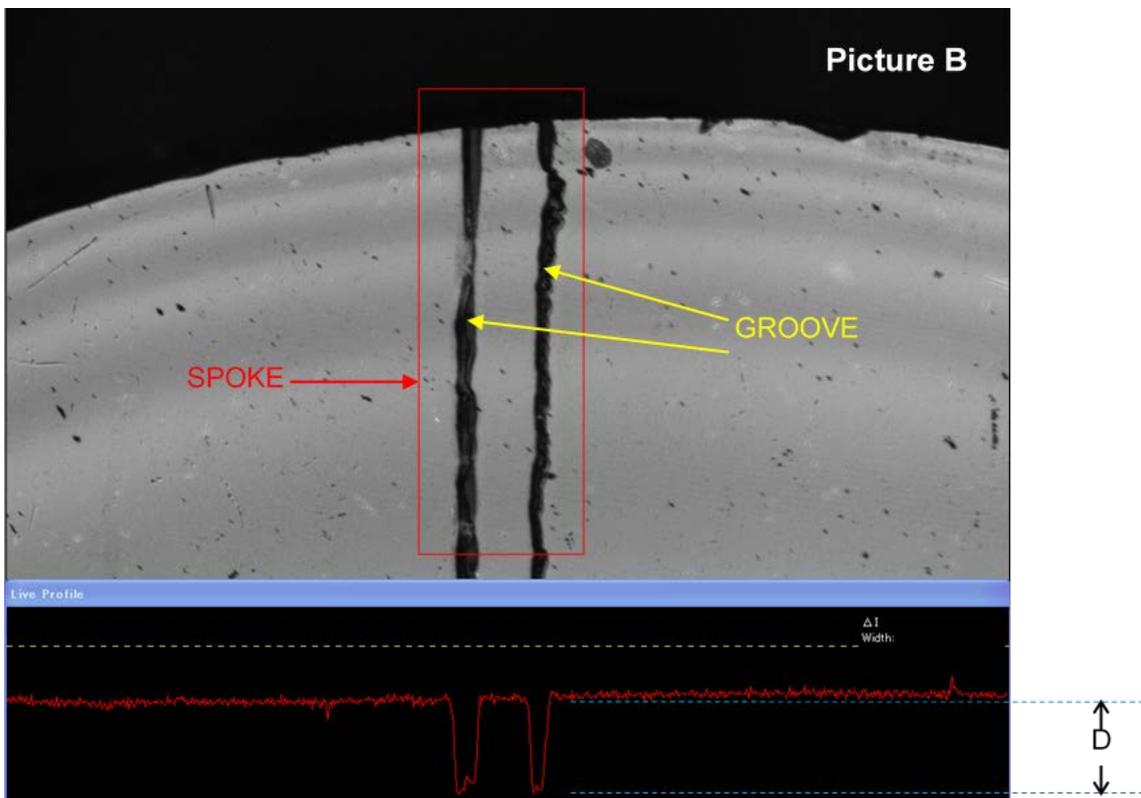
2. Our Process

First of all, we use the gold to plate the outer ring by using THREE SPOKE MASK. Then we wet-etch the Mesa area. After etching and stripping the gold. We see 3 SPOKES or GROOVE one each side of the blank. (See Picture A & DWG. 1)

During wet-etching, the etchant permeate into the blank from the edge even we also plate the gold on the SPOKE part. The etchant from the edge of the blank makes SPOKE or GROOVE on the outer ring.



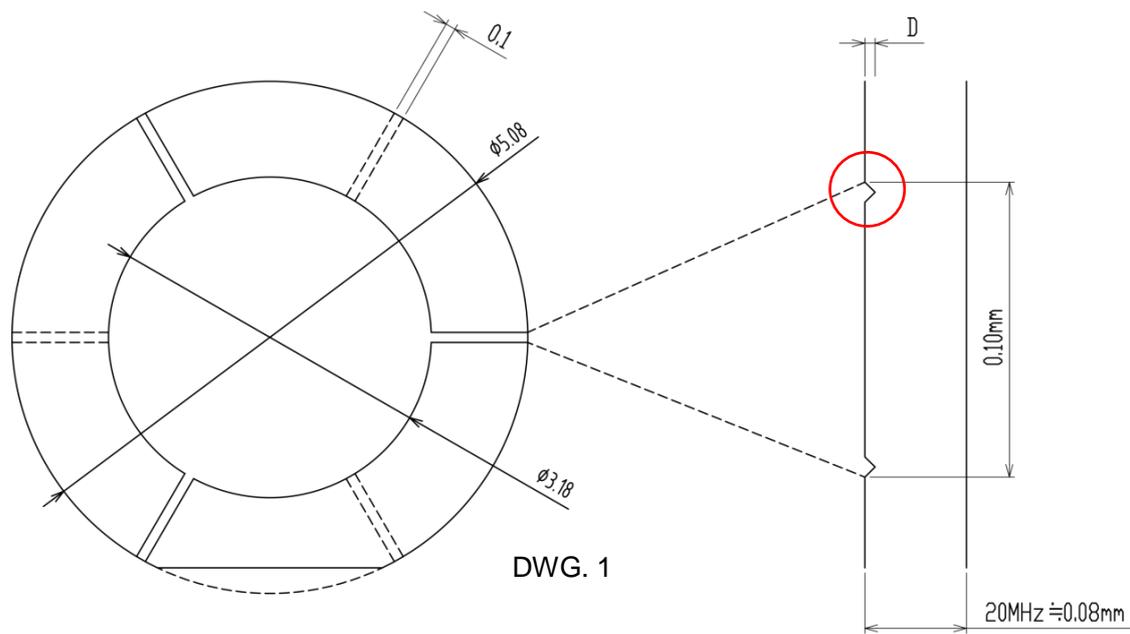
3. This SPOKE looks deep and wide on your naked eye but it is actually not. Refer to the Picture B, this picture tells you that there are two grooves on the both side of one spoke. The etchant etch the both side of the SPOKE, it **DOES NOT** etch whole SPOKE area. So it looks like spoke but it is actually like a line or groove



GLOBAL CO., LTD.

1160 Asari Chuo
Yamanashi 400-1514 Japan
+81-55-269-3311 info@global-j.com

4. We measure the depth of the red circle part (D) on DWG. 1 with laser microscope. Please refer the datasheet of DEPTH OF SPOKE next page, you can see the DEPTH(μm) 12.598 μm .



5. Needless to say, it doesn't mean our Inverted Mesa won't be broken. The SPOKE or GROOVE area is still weak if you try to break it. The blank thickness on the GROOVE area is still around $0.068\mu\text{m}$ ($0.08\mu\text{m} - 0.012\mu\text{m}$), which is around 24.500MHz. So we believe it is still enough thickness even there is SPOKE or GROOVE on our Inverted Mesa blank.



GLOBAL CO., LTD.

1160 Asari Chuo
Yamanashi 400-1514 Japan
+81-55-269-3311 info@global-j.com

