



Figure 1 DuraBeryllium X-ray Window



Figure 2 DuraBeryllium Plus X-ray Window

Mounting Options

Moxtek offers these mounting services for DuraBeryllium windows.

- Epoxy adhesive (polymeric)
- Metal diffusion bond

Moxtek can supply mounts. Please provide a drawing with specific geometry and detail.

Moxtek® DuraBeryllium® windows are the highest performing beryllium x-ray windows available. DuraBeryllium windows are light tight, have high x-ray transmission, are vacuum tight, and corrosion resistant. DuraBeryllium windows can be attached with a high temperature metal diffusion bond or using a vacuum compatible epoxy. DuraBeryllium windows are used in a variety of applications including microanalysis, EDXRF, WDXRF, and XRD.

This Technical Note provides general guidelines for designing frames for Moxtek DuraBeryllium windows.

Table 1 Standard Window Sizes

Standard window sizes are shown in the following table:

| Thickness (µm) | Diameter (mm) |
|----------------|---------------|
| 8.0 | 4.9 |
| 8.0 | 5.7 |
| 8.0 | 7.9 |
| 8.0 | 9.2 |
| 8.0 | 12.0 |
| 12.5 | 12.0 |
| 12.5 | 16.0 |
| 25.0 | 9.2 |
| 25.0 | 16.0 |

For custom window sizes please contact Moxtek.

Mounting

Moxtek offers a mounting service for DuraBeryllium windows. Two types of bonding are used for mounting DuraBeryllium windows: epoxy adhesive and metal diffusion bond. Typical attachment of windows for both methods are shown in Figure 3 and 4 respectively.

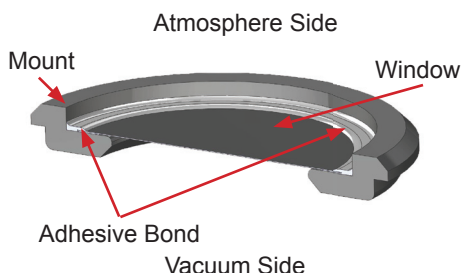


Figure 3 Typical Epoxy Adhesive Attachment of Beryllium Window

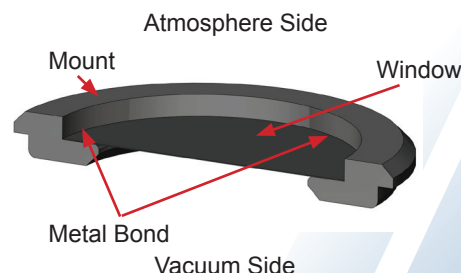


Figure 4 Typical Metal Diffusion Bond Attachment of Beryllium Window

Window Mount Design Guidelines

Please use the recommended design guidelines when designing a window mount for DuraBeryllium windows. See Table 2 when designing a mount for metal diffusion bonding and Table 3 when designing for epoxy bonding.

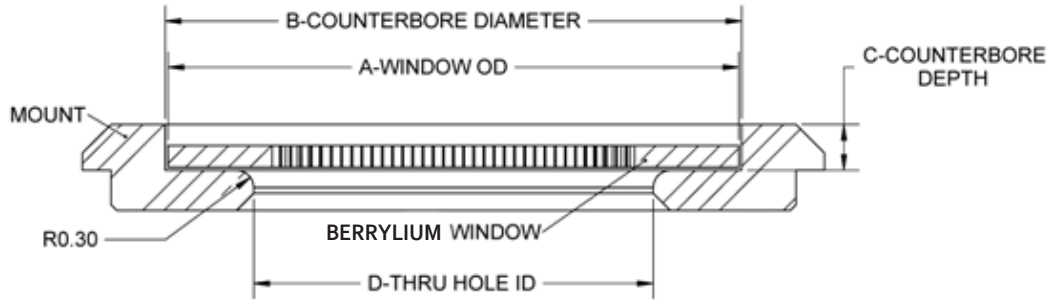


Figure 5 Recommended Window Frame Design Guidelines

Table 2 Design Guidelines for Metal Diffusion Bonding

| WINDOW OD | | COUNTERBORE DIAMETER (mm)- B X.XX ±.05 | COUNTERBORE DEPTH- C | | MAXIMUM THRU HOLE ID (mm)- D |
|----------------|------------------|---|----------------------|--------------|------------------------------|
| Thickness (µm) | Diameter (mm)- A | | MAXIMUM (mm) | MINIMUM (mm) | |
| 8.0 | 9.20 | 9.45 | 0.70 | 0.50 | 7.00 |
| 8.0 | 12.00 | 12.25 | | | |
| 12.5 | 12.00 | 12.25 | | | |
| 12.5 | 16.00 | 16.25 | | | |
| 25.0 | 9.20 | 9.45 | | | 7.00 |
| 25.0 | 12.00 | 12.25 | | | 9.00 |
| 25.0 | 16.00 | 16.25 | | | 13.00 |

Table 2 Design Guidelines for Metal Diffusion Bonding

Table 3 Design Guidelines for Epoxy Bonding

| Foil Dimensions | | COUNTERBORE DIAMETER (mm)- B X.XX ±.05 | MINIMUM COUNTERBORE DEPTH (mm)- C | MAXIMUM THRU HOLE ID (mm)- D |
|-----------------|------------------|---|-----------------------------------|------------------------------|
| Thickness (µm) | Diameter (mm)- A | | | |
| 8.0 | 4.90 | 5.90 | 1.00 | 4.00 |
| 8.0 | 5.70 | 6.70 | | 5.00 |
| 8.0 | 7.90 | 8.90 | | 7.00 |
| 8.0 | 9.20 | 10.20 | | |
| 8.0 | 12.00 | 13.00 | | 8.00 |
| 12.5 | 12.00 | 13.00 | | |
| 12.5 | 16.00 | 17.00 | | 7.00 |
| 25.0 | 9.20 | 10.20 | | 9.00 |
| 25.0 | 12.00 | 13.00 | | 13.00 |
| 25.0 | 16.00 | 17.00 | | |

Table 3 Design Guidelines for Epoxy Bonding



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