

# ULTRA HIGH-PURITY POROUS CERAMIC FLOW PLUGS FOR ELECTROSTATIC CHUCKS (ESC)



## IMPROVE YOUR PROCESS TOOL PRODUCTIVITY WITH EXTENDED ELECTROSTATIC CHUCK LIFETIME AND BETTER FULL WAFER TEMPERATURE UNIFORMITY

Mott's novel and patented porous ceramic flow plugs are custom-made with tunable porosity characteristics, low part-to-part variability and high-purity (up to 5 nines or 99.999%) for high dielectric breakdown strength and better fluid flow and thermal uniformity. Our unique designs typically incorporate a thin and dense outer sleeve, which gives mechanical robustness compared to monolithic porous components and prevents radial leaks that can minimize breakdown strength and affect thermal uniformity.

When it comes to manufacturability, our 3D print capabilities provide production accuracy and unparalleled freedom in structural design. We can help your unique idea become reality with our customization expertise. In the event your application requires a different ceramic material, just ask us!

### KEY BENEFITS

- » High dielectric breakdown strength, especially for high voltage applications
- » Superior cleanliness with high-purity materials
- » Better thermal uniformity for consistent wafer critical features/dimensions

### DIMENSIONS

Mott leverages both conventional and 3D printing methods to satisfy customer requirements on part geometry and dimensions

#### Part Size Ranges

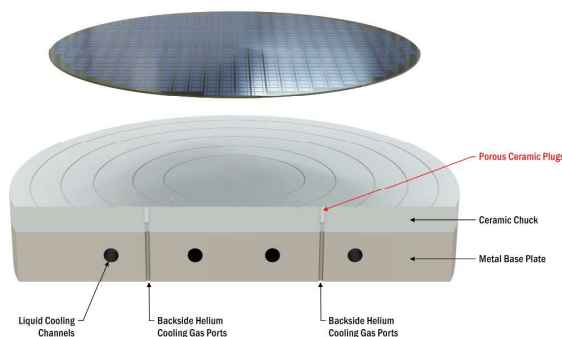
- » Diameter: 0.5mm-55mm
- » Length: 0.5mm-100mm

#### Achievable Tolerances

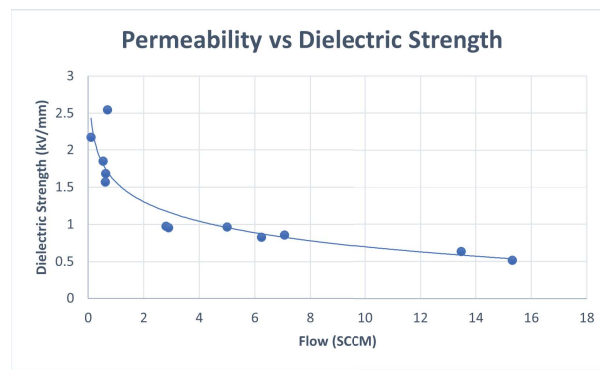
- » Diameter: +/- .05mm
- » Length: +/- .05mm
- » Chamfers: +/- .127mm
- » Radii: +/- .127mm

### SPECIFICATIONS

Dielectric Strength Ranges	0.5 - 2.0 kV/mm
Material Purity	Up to 99.999% (5N) Available
Porosity Ranges	10% - 65%
Flow Range	0.5 SCCM - 40 SLPM
Flux Range	0.010 - 500 SLPM/cm <sup>2</sup>
Cleanliness & Particle Shedding	Testing Available



Conventional & 3D Printed Designs



Mott can optimize flow and dielectric strength by engineering porous characteristics of the flow plug.

Contact us if you have a need for porous ceramic components for semiconductor applications such as filters for particle capture, vacuum break filters for gas diffusion and substrates for wafer handling.