Interface Materials
- Insulators
- Aluminum Oxide Ceramic
- Insulating Covers
- Bushings
- Mica
- Thermalsil
- Beryllium Oxide Ceramic
- Hard Anodized Aluminum

Beryllium Oxide Ceramic

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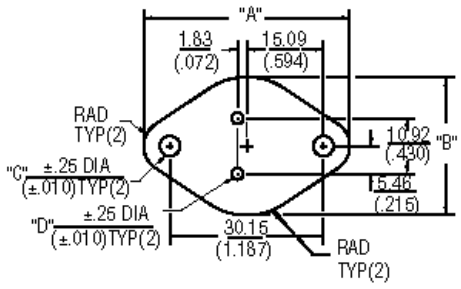
RoHS Compliant
MSDS Safety Sheet for Beryllium Oxide Ceramic in PDF format

Beryllium oxide insulators have a high dielectric strength, which allows safe operating voltages of 1500 volts or more. For applications involving high frequency or high pulse rate circuitry, the inherent low electrical capacitance of these insulators prevents circuit detuning and loss of signal power.

Beryllium oxide insulators have a dielectric strength of approximately 22.8 x 103 volts/mm for .81mm material (580 volts/mil for .032" material), and 17.7 x 103 volts/mm for 1.57mm material (450 volts/mil for .062 material). The thermal conductivity of beryllium oxide is 221.94 Wm-1 °C-1 (128.2 Btu/hr.ft.°F).
Beryllium oxide is chemically inert and completely safe to use in its fired state. Handling of finished parts presents absolutely no health hazards.

Beryllium oxide,however, is toxic when dust, mist or fumes containing particles small enough to enter the lungs are inhaled. Therefore, grindings, sanding, and pulverizing the material should be avoided.

For TO-3

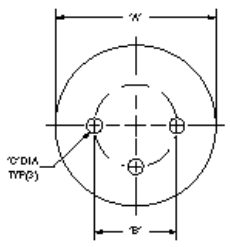


"A" = 39.65 (1.561)
"B" = 26.67 (1.050)
"C" = 3.68 (0.145)
"D" = 3.68 (0.145)

Part No. 4003G Thickness 0.062 (1.57) Download PCN

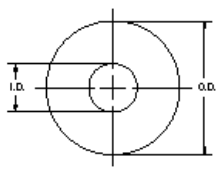
Part No. 4003-1 Thickness 0.032 (0.81)

For TO-5 and TO-18



Part No.	A	B	C	Thickness
4005G (TO-5)	9.14 (0.360)	5.08 (0.200)	1.02 (0.040)	0.76 (0.030)
4005-15 (TO-5)	9.14 (0.360)	5.08 (0.200)	1.02 (0.040)	0.38 (0.015)
4018G (TO-18)	5.59 (0.220)	2.54 (0.100)	1.02 (0.040)	0.76 (0.030)

Mounting Washers



Part No.	OD	ID	Thickness
B-250-130-62G	6.95±0.13 (0.250 ±0.005)	3.30±0.13 (0.130 ±0.005)	1.57±0.25 (0.062 ±0.010)
B-470-235-40G	11.94±0.13 (0.470 ±0.005)	5.97±0.13 (0.235 ±0.005)	1.02±0.13 (0.040 ±0.005)
B-510-200-40G	12.95±0.25 (0.510 ±0.010)	5.08±0.25 (0.200 ±0.010)	1.02±0.13 (0.040 ±0.005)
B-800-260-30G	20.32±0.25 (0.800 ±0.010)	8.80±0.13 (0.280 ±0.005)	.78±0.08 (0.030 ±0.003)
B-800-260-62G	20.32±0.25 (0.800 ±0.010)	6.60±0.13 (0.260 ±0.005)	1.57±0.25 (0.062 ±0.010)

Beryllium Oxide

PROPERTY	TYPICAL VALUE 25°C	TEST METHOD
CHEMICAL		
Be0 content	99.5% minimum	Spectograph Analysis (100%-% by wt. of total metallic impurity).
ELECTRICAL		
Dielectric Constant 25°C (77°F)	6.5 (1MHz) 6.6 (10GHz)	ASTM D150-70 ASTM D2520-70
Dissipation Factor 25°C (77°F)	.0004 (1MHz) .0004 (10GHz)	ASTM D150 ASTM D2520

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Electrical Resistivity 25°C (77°F)	>1015 ohm-cm	ASTM D150 ASTM D257-61
Dielectric Strength (AC)	22.8 x 103 volts/mm (.81mm) [580 volts/mil (0.32")]	ASTM D149-84
PHYSICAL		
Density	2.85 g/cm3(min) 177.93 Lb/ft3	ASTM C373-66 ASTM F77-671
Hardness	60 minimum (Rockwel 45N)	ASTM E18-67
MECHANICAL		
Flexural Strength 25°C (77°F)	2.27 x 108Pa (min.) (33,000 psi min.)	ASTM Microbar 8025 ASTM D2442-70A3
Modules of Elasticity	3.45 x 1011Pa (50 x 106psi)	ASTM D2442-70A4
Poisson's Ratio	0.26	ASTM D2442-70A4
Tensile Strength 25°C (77°F)	1.52 x 108Pa (22,000 psi)	ASTM 565-66T
Compressive Strength 25°C (77°F)	1.55 x 109 Pa (25,000 psi)	ASTM C528
THERMAL		
Coefficient of Thermal Expansion	9.0 x 10-6 /°C 5.0 x 10-6 /°F	ASTM E-228 ASTM C372-56 ASTM C327-56 ASTM C408-82
Thermal Conductivity	251.28 Wm-1°C-1(25°F) [145.14 Btu/hr.ft °F] (77°F) 186.44 Wm-1°C-1(100°F) [106.86 Btu/hr.ft °F] (212°F) 146.57 Wm-1°C-1(150°F) [84.67 Btu/hr.ft °F] (302°F)	ASTM C408-82
Specific Heat (180°C)	1.0 x 10-3 KJ/Kg°C [2.5 x 10-4 Btu/Lb °F]	ASTM C351-81
Melting Point	2552°C (4625°F)	
Maximum Temperature for Continuous Use	2149°C (3900°F)	

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