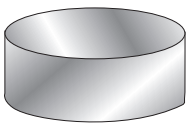


DATA SHEET

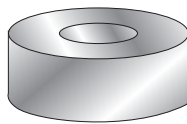
Dielectric and Alumina Supports

Dielectric Supports

Dielectric supports can be used with all disc or cylinder type dielectric resonators to improve coupling and temperature stability. Contact Trans-Tech for other support configurations



Disk Type



Cylinder Type

For disk type support, use D_s & L_s dimension only.

Dielectric Support Dimensions

D _S (± 0.005)	d _S (± 0.004)	L _S (± 0.001) Increments of 0.010	Available Mat'ls
0.472	0.158	0.040–0.410	D4, D6
0.394	0.158	0.040–0.315	D4, D6
0.315	0.158	0.040–0.150	D4, D6
0.236	0.118	0.050–0.100	D4, D6
0.138	0.079	0.020–0.100	D4, D6
0.120	0.079	0.020–0.090	D4, D6

D _S (± 0.002)	d _S (± 0.004)	L _S (± 0.002) Increments of 0.005	Available Mat'ls
0.120	–	0.020–0.100	Alumina
0.142	0.075	0.039	Alumina
0.170	0.098	0.059	Alumina
0.317 (± 0.005)	0.125	0.080	Alumina

Alumina Supports for High Frequency Applications

For high frequency application (above 6 GHz) we offer a special grade of alumina with the following properties.

Material Characteristics

CompositionAlumina
 Dielectric constant7.6
 Dielectric loss<0.0006
 Volume resistivity (ohm cm) at 20 °C2 x 10¹⁰
 Thermal conductivity (cal/cm°C sec) at 25°C0.042
 Water absorption (%)<0.04

Alumina Supports for Cellular and PCS Applications

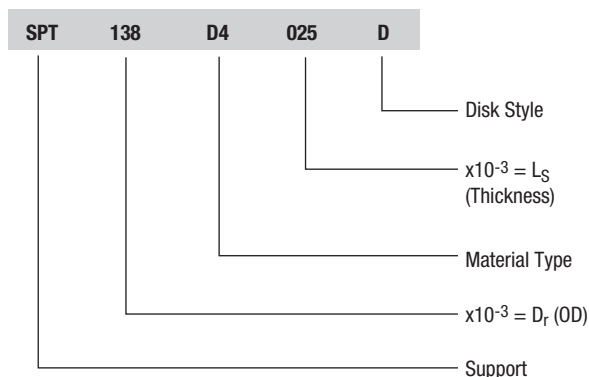
For cellular and PCS frequencies we offer a different grade of alumina, with the following properties. Contact factory for available sizes.

Material Characteristics

CompositionAlumina
 Dielectric constant9.5
 Dielectric loss<0.001
 Temperature coefficient of (τ_f) (ppm/°C)114
 Volume resistivity (ohm cm) at 20 °C10¹⁶
 Coefficient of thermal expansion (ppm/°C) (25–200 °C)6.5
 Thermal conductivity (cal/cm°C sec) at 25 °C0.08
 Water absorption (%)<0.01

D4 and D6 Supports for High Frequency Applications Ordering Information

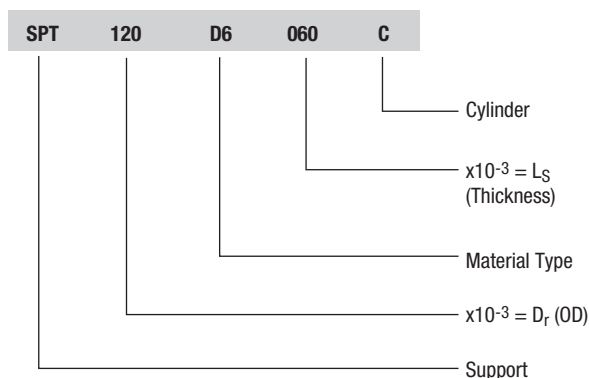
Disk Type Example: SPT-138-D4-025D



Material Characteristics (D4)

Composition	.Cordierite (Mg, Al, Silicate)
Dielectric constant	.4.5
Dielectric loss	<0.0002
Temperature coefficient of (τ_f) (ppm/°C)	.110
Volume resistivity (ohm cm) at 20 °C	$\cdot 10^{14}$
Coefficient of thermal expansion (ppm/°C) (25–200 °C)2.4
Thermal conductivity (cal/cm°C sec) at 25 °C	.0.10
Water absorption (%)	<0.01

Cylinder Type Example: SPT-120-D6-060-C



Material Characteristics (D6)

Composition	.Forsterite (Mg, Silicate)
Dielectric constant	.6.3
Dielectric loss	<0.0002
Temperature coefficient of (τ_f) (ppm/°C)	.107
Volume resistivity (ohm cm) at 20 °C	$\cdot 10^{14}$
Coefficient of thermal expansion (ppm/°C) (25–200 °C)2.4
Thermal conductivity (cal/cm°C sec) at 25 °C	.0.09
Water absorption (%)	<0.6

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