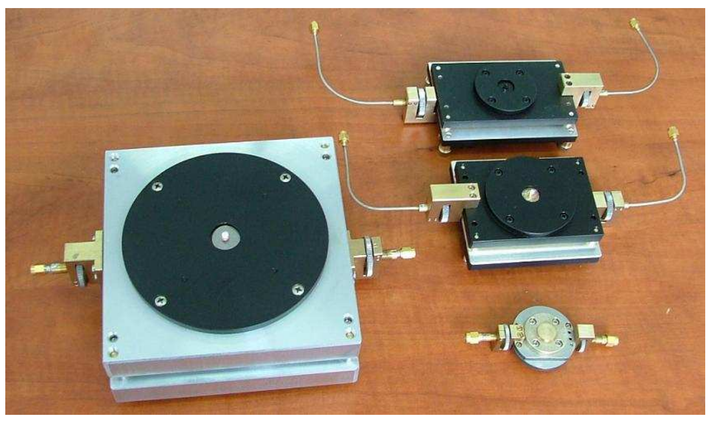
Warsaw University of Technology
Faculty of Electronics and Information Technology
ul. Nowowiejska 15/19, 00 – 665 Warszawa
POLAND
tel.: (+48) 22 234 – 76 – 93
email: J.Krupka@imio.pw.edu.pl

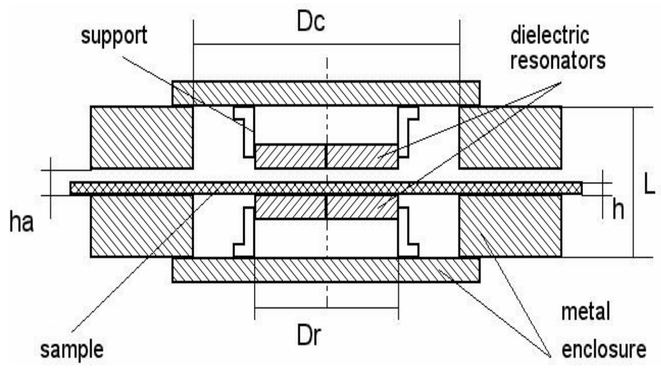
QWED Sp. z o.o.
ul. Nowowiejska 28 m. 32, 02 – 010 Warszawa
POLAND
tel.: (+48) 22 625 – 73 – 19
www: www.qwed.eu
email: info@qwed.eu

Split Post Dielectric Resonators



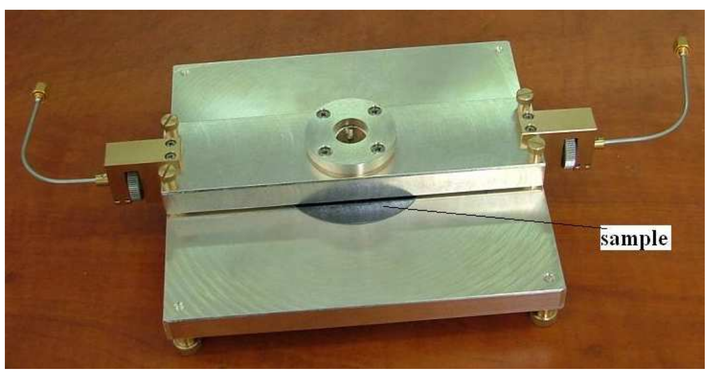
Family of Split Post Dielectric Resonators

Application:	measurements of laminar dielectric materials and LTCC substrates
Operational frequency range:	1 GHz ÷ 20 GHz
Operational temperature range:	-200 ^{0}C ÷ 120 ^{0}C
Accuracy:	$\Delta\varepsilon/\varepsilon=\pm(0.0015+\Delta h/h)$ $\Delta\tan\delta=\pm 2\cdot 10^{-5}$ or ± 0.03 tanδ

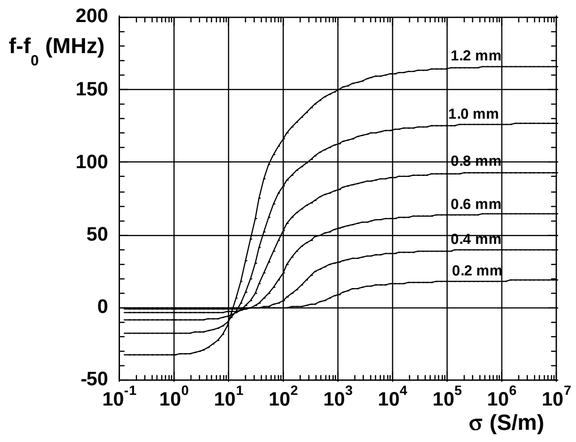


Cross section of Split Post Dielectric Resonator

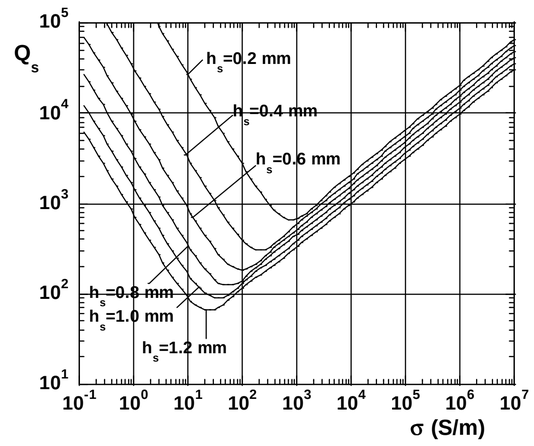
Single Post Dielectric Resonators



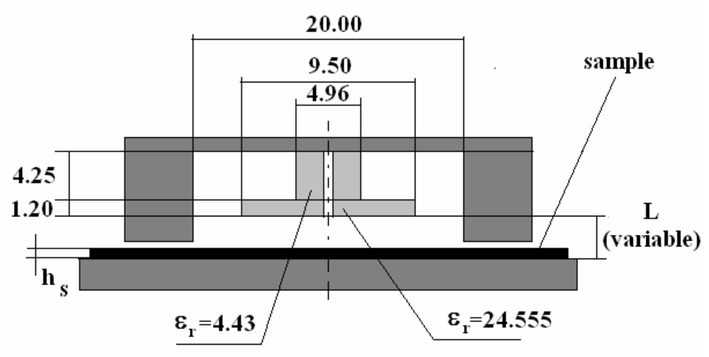
General view of single post-dielectric resonator operating at frequency about 10.8 GHz



Computed resonant frequency shifts with L=4.3 mm. Computations have been performed for ε_r=11.65 (Silicon) assuming negligible dielectric losses in the sample.



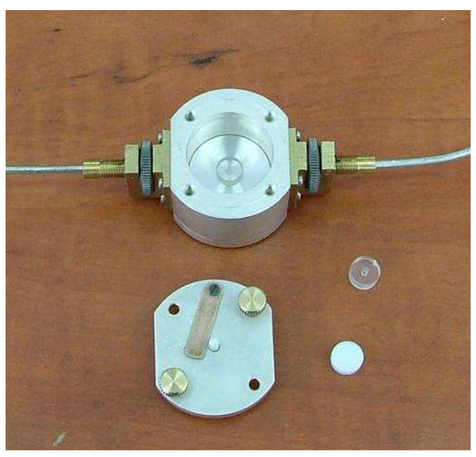
Computed Q-factors due to conductor losses in the sample, with L=4.3 mm. Computations have been performed for ε_r=11.65 (Silicon) assuming negligible dielectric losses in the sample.



Schematic diagram of single post-dielectric resonator operating at frequency about 10.8 GHz

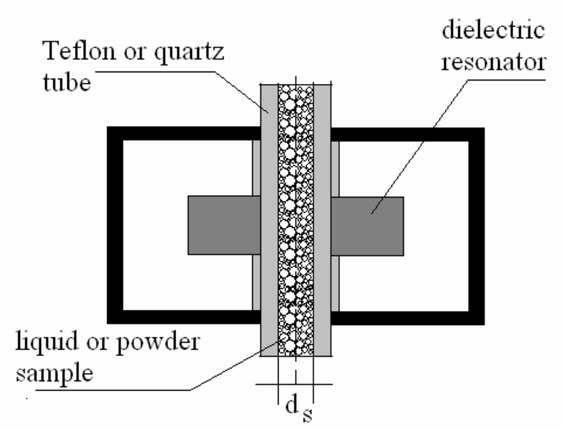
Application:	measurements of the surface resistance (or effective conductivity) of conductors and superconductors
Operational frequency range:	2 GHz ÷ 20 GHz
Operational temperature range:	-270 ^{0}C ÷ 120 ^{0}C
Accuracy:	surface resistance is determined with accuracy about ±2%

$TE_{01\delta}$ mode Dielectric Resonators

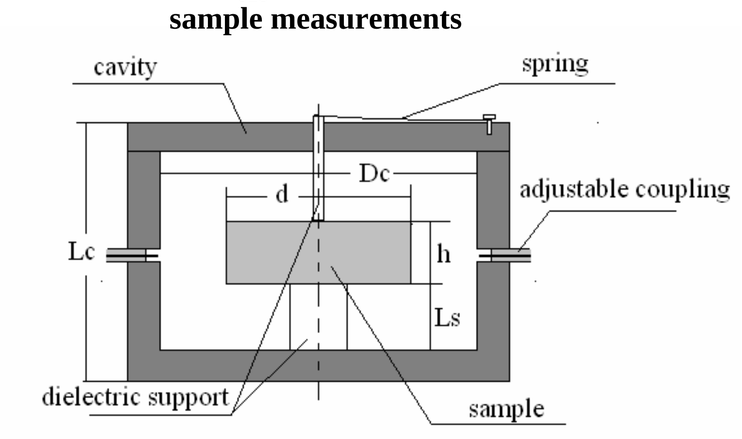


General view of $TE_{01\delta}$ dielectric resonator for solid sample measurements

General view of $TE_{01\delta}$ dielectric resonator for liquid or powder sample measurements



Cross section of $TE_{01\delta}$ dielectric resonator for liquid or powder sample measurements



Cross section of $TE_{01\delta}$ dielectric resonator for solid sample measurements

Application:	measurements of permittivity and dielectric loss tangent of low loss dielectric
Operational frequency range:	1 GHz ÷ 20 GHz
Operational temperature range:	-270 ^{0}C ÷ 120 ^{0}C
Accuracy:	$\Delta\varepsilon/\varepsilon=\pm(0.0015+\Delta h/h)$ $\Delta\tan\delta=\pm 2\cdot 10^{-5}$ or ± 0.03 tanδ

ASSOCIATION OF POLISH INVENTORS AND RATIONALIZERS

Ul. Rydygiera 8, 01 – 793 Warszawa
POLAND
tel.: (+48) 22 633 – 84 – 82
email: spwir@poczta.onet.pl