

Coaxial Resonators & Inductors

(300 MHz - 6.0 GHz)

Trans-Tech offers ceramic coaxial line elements in seven sizes and four dielectric constants to span applications from 300 MHz to 6 GHz. The VHF/UHF frequency bands are traditionally awkward for realizing discrete inductors and capacitors. Metallized ceramics provide an attractive alternative, since the wireless communication market now forces a continuous trade-off between performance and miniaturization.

Trans-Tech's ceramic solution offers advantages of high Q, reduced size, better shielding, and temperature performance superior to that obtainable from conventional L-C circuits or microstrip construction.

Two types of coaxial resonators are offered by Trans-Tech, a quarter-wave short (1/4) and a half-wave open (1/2). The quarter-wave has thick-film silver applied to one end. The half-wave has both ends un-metallized.

Trans-Tech's four dielectric materials are briefly summarized in Figure 3 along with their recommended frequencies of use. The Material Selection Chart (Figure 4) can be used to determine the optimum material necessary for an application.

Materials Selection Chart

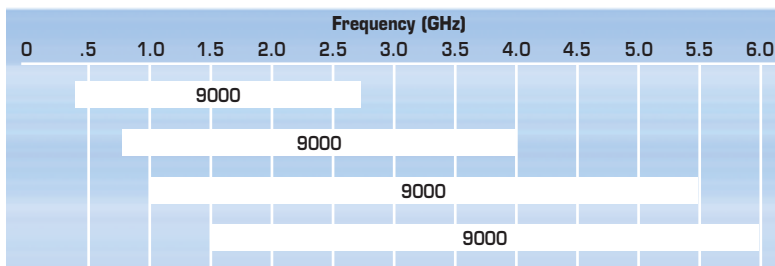


Figure 3 - Frequency Chart of Resonator Applications



Material Properties

	Material Type			
	4500	2000	8800	9000
Dielectric Constant	10.3±0.5	20.5±1.0	39±1.5	90±3
Temperature Coefficient of Resonant Frequency π (ppm°C)	0±10	0±10	+4±2	0±10

Properties given for the ceramic materials used to produce the coaxial line elements are measured for internal quality control purposes. The electrical quality factor (Q) of the coaxial line elements is determined primarily by the metallization. Guaranteed properties of the coaxial line elements are listed on pages 2-40 & 2-41.