Dielectric Coaxial Ceramic Resonators

Token Ceramic Coaxial Resonators (DR) Is The Cornerstone of RF Microwave Communications

Preview

Dielectric ceramic resonator is a kind of microwave components, also known as coaxial resonator, Token electronics manufacturing dielectric resonator (cylindrical, ring), coaxial resonator (rectangular cavity, cylindrical cavity, coaxial cavity resonator), microwave resonator, etc. It is made high-Q dielectric ceramics, temperature coefficient is good, mainly used in microwave oscillators and filters.

Dielectric resonator size and dielectric material is inversely proportional to the square root of the dielectric constant, dielectric materials, dielectric constant the greater the required dielectric ceramic block the smaller, thus the smaller the resonator size. Another important parameter is the insertion loss, low dielectric loss microwave dielectric materials, dielectric filters that affect the insertion loss of a major factor. Microwave dielectric Q value and dielectric loss is inversely proportional to the relationship. Q value is greater the lower the filter insertion loss.

Therefore, the microwave dielectric ceramic materials of high dielectric constant is conducive to the miniaturization of microwave dielectric filters, can filter with the microwave tube, a microstrip line realization of microwave hybrid integrated circuit, so that the device dimensions to mm order of magnitude, the price is also much lower than the metallic cavity.

The coaxial resonator impedance used in TEM mode is direct function of its dimensions and of the dielectric material permittivity. Token coaxial ceramic resonators provide the customers with high Q higher parellel resonant impedance and better temperature characteristics than inductor coils and associated lumped constant elements used in RF amplifiers and oscillators circuits. According to dielectric resonator frequency stabilization mechanism, using dielectric resonator stabilized FET oscillator frequency (also referred to DRO) can be classified into 4 types, namely, reflective, band-reject type, transmission type and feedback type.

Coaxial Resonator named by the internal and external, between the inner and outer conductor filling a variety of dielectric ceramics to be dielectric ceramic coaxial resonator name. It is longer than the length of the unfilled resonator is much smaller. Coaxial resonator with two ports, depending on port different boundary conditions, in accordance with the basic structure of the resonator is divided into three types: half-wavelength type, quarter-wavelength type, and capacitive load type, each structure each with distinct characteristics.

TOKEN DR Dielectric Coaxial Ceramic Resonators

Token DR series features with small size, high temperature stability characteristics. Indirectly, DR series is suitable for a variety of microwave communications equipment, particularly suitable for PCS / PCN filters, base stations, radar detectors, satellite broadcast reception systems, military microwave facilities. Comply with RoHS standards.

Custom parts are available on request. Token will also produce devices outside these specifications to meet specific customer requirements,
please contact our sales for more information.

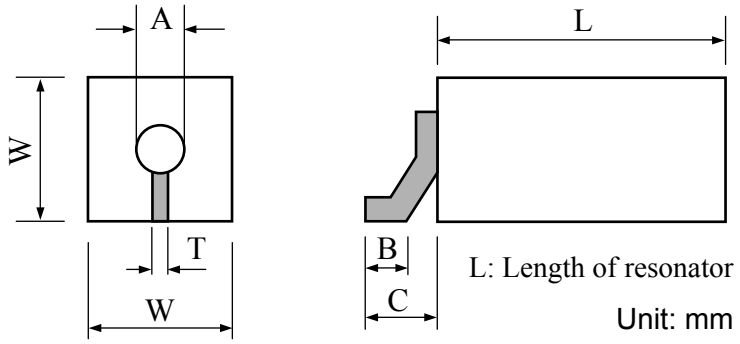
Features

- High quality factor
- High dielectric constant
- Low temperature coefficient
- Wide range of resonant frequency

Applications

- Filter and duplexer
- Oscillators (DRO/VCO)
- CDMA/PCS/WLL/IMT2000
- Wireless headphone, wireless security system
- 900MHz, 1.8GHz, 2.4GHz, 5.8GHz wireless phone

Dimensions



Part Number	W(O/D)	A(I/D)	B	C	T
D120	12.0±0.2	① Φ4.0±0.2	without tab	3.2	1.0
		② Φ3.55±0.2	1.5		
D100	10.0±0.2	① Φ3.3±0.2	1.3	3.0	1.0
D080	8.0±0.2	① Φ2.7±0.2	1.3	2.6	0.7
D060	6.0±0.2	① Φ2.5±0.2	without tab	2.4	0.7
		② Φ2.2±0.2	without tab		
		③ Φ2.0±0.2	1.2		
D050	5.0±0.2	① Φ1.8±0.2	1.0	2.2	0.6
		② Φ1.5±0.2	1.0		
D040	4.0±0.1	① Φ1.8±0.1	0.8	1.8	0.6
		② Φ1.5±0.1	without tab		
		③ Φ1.2±0.1	without tab		
D030	3.0±0.1	① Φ1.0±0.1	0.7	1.5	0.5
D020	2.1±0.1	① Φ0.6±0.1	0.5	1.2	0.5

Available Range of TEM Mode

Material	Dielectric Constant	Tf[1]	Type	Characteristic Impedance (Ω)	Wave Length	Frequency Range (MHz)	Q[2] (min)
A Series	21±1	0±10		①15 ②17	λ/4	800~1300	800
					λ/2	1600~2700	1000
			D100	16	λ/4	800~1300	700
					λ/2	1600~3200	800
			D080	15	λ/4	1000~3200	650
					λ/2	2000~3000	700
			D060	①12 ②14 ③15	λ/4	1000~2700	550
					λ/2	2000~3000	600
			D050	①14 ②17	λ/4	1300~3000	450
					λ/2	2500~4000	500
			D040	①11 ②14 ③17	λ/4	1300~4000	380
					λ/2	2500~4000	400
			D030	15	λ/4	1900~4000	320
			D020	17	λ/4	2800~5000	250
B Series	36±1	0±10	D120	①12 ②13	λ/4	600~1000	700
					λ/2	1200~2400	900
			D100	12	λ/4	600~1200	600
					λ/2	1200~2400	800
			D080	12	λ/4	800~1500	500
					λ/2	1600~3000	700
			D060	①10 ②11 ③12	λ/4	800~1800	450
					λ/2	1600~3500	550
			D050	①11 ②13	λ/4	800~1800	380
					λ/2	1600~3500	450
			D040	①9 ②11 ③13	λ/4	1000~2700	320
					λ/2	2000~4800	400
			D030	12	λ/4	1300~3000	220
			D020	13	λ/4	1300~3000	220

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Material	Dielectric Constant	Tf[1]	Type	Characteristic Impedance (Ω)	Wave Length	Frequency Range (MHz)	Q[2] (min)
C Series	90±2	0±10	D120	①7 ②8	λ/4	400~800	650
					λ/2	800~1500	700
			D100	7	λ/4	600~800	550
					λ/2	1200~2400	650
			D080	7	λ/4	440~1000	450
					λ/2	1000~1500	550
			D060	①6 ②7 ③7	λ/4	440~1300	400
					λ/2	1000~2200	470
			D050	①7 ②8	λ/4	500~1800	380
					λ/2	1000~3000	450
			D040	①6 ②7 ③8	λ/4	900~1600	200
					λ/2	2000~4800	300
			D030	7	λ/4	900~1600	250
			D020	8	λ/4	900~1600	150

Note:1.Frequency stability of temperature.

2.Q value depends on lower limit of frequency range.

How to Order

DR ❶ | 30 ❷ | A ❸ | 1 ❹ | W4 ❺ | 2533 ❻ | T ❼

❶ Dielectric Resonators

❷ Dimension

❸ Material

❹ Impedance

Code	Impedance
1	①
2	②
3	③

❺ Wave Length

Code	Wave Length
W2	λ/2
W4	λ/4

❻ Center Frequency (MHz)

❼ Configuration

Code	Configuration
T	tab
N	without tab

Back to 1st Page - Dielectric Resonators TEM Mode - DR