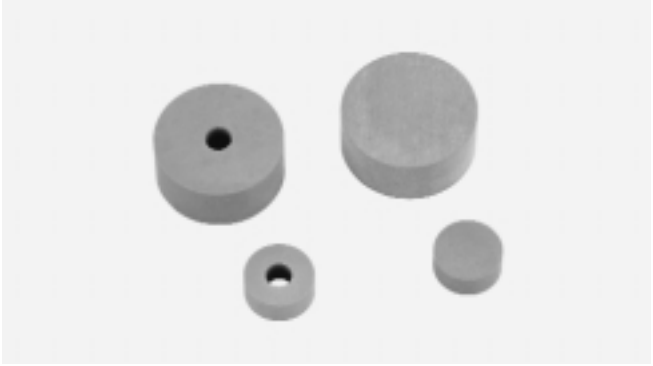
muRata
Innovator in Electronics

U Series



GENERAL CHARACTERISTICS

- High unloaded Q — 6,000 min. at 7GHz.
- High dielectric constant — $\varepsilon_r \approx 38$.
- Resonant frequency temperature coefficient from –4 to +10ppm/°C.
- Accurate and repeatable dielectric constant (±0.5).
- Improved spurious response (spurious modes are further removed from fundamental resonant frequency).
- Decoupled mounting on supports above substrate maximizes operational Q.

CONFIGURATION

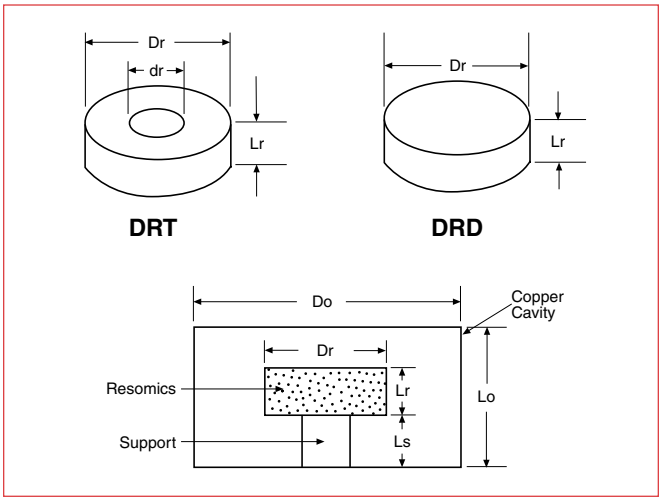


TABLE 1: Q & τ_f

Type	Temp. Coeff. τ_f (ppm/°C)	Dielectric Constant εr (±0.5)	Unloaded Q (at 7GHz)
A	–4	36.6	6000 min.
B	–2	37.0	
C	0	37.4	
D	2	37.7	
E	4	38.0	
F	6	38.3	
G	8	38.6	
H	10	38.9	

Q can be approximated by: $Q \geq \dfrac{100{,}000}{2.0 \times fo + 2.6}$, fo = [GHz]

TABLE 2: τ_f TOLERANCE

Identification	τ_f Tol. (ppm/°C)
—	±2
A	±1
B	±0.5

DIMENSIONS & FREQUENCY RANGE

Part Number	Dr ± 0.05 (mm)	Lr ± 0.05 (mm)	Frequency Range* (GHz)
DRD046U□021	4.65	2.08	11.46 to 12.45
DRD051U□022	5.06	2.24	10.54 to 11.45
DRD055U□024	5.50	2.44	9.69 to 10.53
DRD060U□027	5.98	2.65	8.91 to 9.68
DRD065U□029	6.50	2.88	8.20 to 8.90
DRD071U□031	7.07	3.14	7.54 to 8.19
DRD077U□034	7.69	3.41	6.93 to 7.53
DRD084U□037	8.36	3.71	6.38 to 6.92
DRD091U□040	9.09	4.03	5.87 to 6.37
DRD099U□044	9.88	4.38	5.40 to 5.86
DRD107U□048	10.75	4.77	4.96 to 5.39
DRD117U□052	11.68	5.18	4.56 to 4.95
DRD127U□056	12.70	5.63	4.20 to 4.55
DRD138U□061	13.81	6.13	3.86 to 4.19
DRD150U□067	15.02	6.66	3.55 to 3.85
DRD163U□072	16.33	7.24	3.27 to 3.54
DRD178U□079	17.76	7.88	3.00 to 3.26
DRD193U□088	19.31	8.56	2.76 to 2.99
DRD210U□093	21.00	9.31	2.54 to 2.75
DRD228U□101	22.83	10.13	2.34 to 2.53
DRD248U□110	24.82	11.01	2.15 to 2.33
DRD270U□120	26.99	11.97	1.98 to 2.14
DRD293U□130	29.35	13.02	1.82 to 1.97
DRD319U□142	31.91	14.15	1.67 to 1.81
DRD347U□154	34.70	15.39	1.54 to 1.66

DIMENSIONS & FREQUENCY RANGE

Part Number	Dr ± 0.05 (mm)	dr ± 0.1 (mm)	Lr ± 0.05 (mm)	Frequency Range* (GHz)
DRT051U020□022	5.06	2.0	2.24	10.54 to 11.45
DRT055U020□024	5.50		2.44	9.69 to 10.53
DRT060U020□027	5.98		2.65	8.91 to 9.68
DRT065U020□029	6.50		2.88	8.20 to 8.90
DRT071U020□031	7.07		3.14	7.54 to 8.19
DRT077U020□034	7.69		3.41	6.93 to 7.53
DRT084U030□037	8.36	3.0	3.71	6.38 to 6.92
DRT091U030□040	9.09		4.03	5.87 to 6.37
DRT099U030□044	9.88		4.38	5.40 to 5.86
DRT105U030□046	10.50		4.60	5.08 to 5.51
DRT107U040□048	10.75	4.0	4.77	4.96 to 5.39
DRT117U040□052	11.68		5.18	4.56 to 4.95
DRT127U040□056	12.70		5.63	4.20 to 4.55
DRT138U040□061	13.81		6.13	3.86 to 4.19
DRT150U040□067	15.02		6.66	3.55 to 3.85
DRT163U040□072	16.33		7.24	3.27 to 3.54
DRT178U040□079	17.76		7.88	3.00 to 3.26
DRT193U040□086	19.31		8.56	2.76 to 2.99
DRT200U040□086	20.00		8.63	2.67 to 2.89
DRT200U040□086	20.00	6.0	8.63	2.66 to 2.88

Note: *Frequency is measured under the condition: Lr/Lo = 0.33.

PART NUMBERING

DRT	055	U	020	□	024	A
DRD = disk type DRT = cylindrical type	★Outside diameter (Dr)	Material type	★Inside diameter (dr) for DRT only	τ_f (Resonant Freq., T.C.) as shown in Table 1	★Thickness (Lr)	τ_f tolerance as shown in Table 2

★**Note:** For actual dimension in mm, divide number by 10.