

DATA SHEET

2150 Series: Temperature-Stable Dielectric Resonators

Applications

- Base station filters and combiners
- Microwave filters and oscillators
- All cellular platforms

Features

- Robust TM resonator material
- Small size
- Repeatability of design
- Low insertion loss
- High-volume manufacturing capability

Description

Trans-Tech offers the 2150 series of temperature-stable dielectric resonators, designed for frequency operation from 700 MHz to 13.8 GHz. This series offers a reduced size while maintaining high Q.



Material Characteristics

Characteristic	Value
Dielectric constant	21.5 ±1.0
Temperature coefficient of resonant frequency (τ_f) (ppm/°C) ¹	-2 to +2
Q (1/tan δ) min ¹	6000 @ 5.5 GHz, (8500 typical)
Thermal expansion (ppm/°C) (20 to 200 °C)	9.1
Thermal conductivity (Cal/(cm*sec*°C)) @25 °C	0.010
Non-linear coefficient (τ_f')(ppm/°C ²) ¹	-0.09
Density (g/cc)	3.80
Water absorption (%)	<0.01
Flexural strength MPa	225
Compressive strength MPa	1486
Tensile strength MPa	101
Elastic modulus GPa	230
Shear modulus (psi x 10 ⁶)	13.29
Poisson ratio	0.27
Rockwell hardness (R45N)	63
Fracture toughness MPa*m ^{1/2}	2.7

¹ These measurements are made in TE₀₁ δ mode.



Trans-Tech products are compliant with all applicable legislation and are halogen-free.



For additional information, refer to *Trans-Tech's* document RFC-F0028, RFC-F0029, and RFC-F0022

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