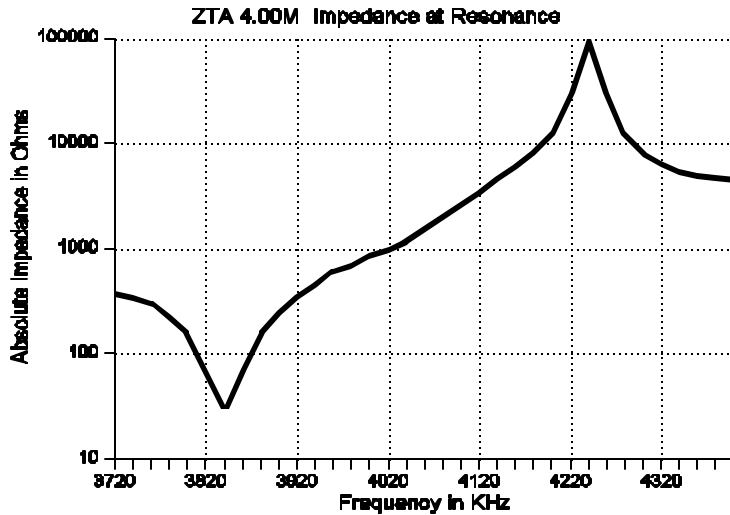


### ZTA 4.00M Ceramic Resonators Frequency vs Impedance Characteristics

The ZTS 4.00MHz internal PZT piezoceramic element is identical to ZTA 4.00MHz, except without the twin built-in load capacitors. The following is ZTA 4.00M PZT ceramic resonator's absolute impedance in logarithmic magnitude  $|Z|$  plotted as function of near resonant frequency. The frequency measured at low impedance is the resonance frequency and the frequency at high impedance is the antiresonance frequency.



### ZTA 4.00M Ceramic Resonators Frequency vs Temperature Characteristics

PZT Piezoceramic material has excellent temperature coefficient, typically at  $10^{-5}/^{\circ}\text{C}$  from  $-20^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ . The following is ZTA 4.00M resonant frequency measurements plotted at extended operating temperature in degree C from  $-40^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$ .

