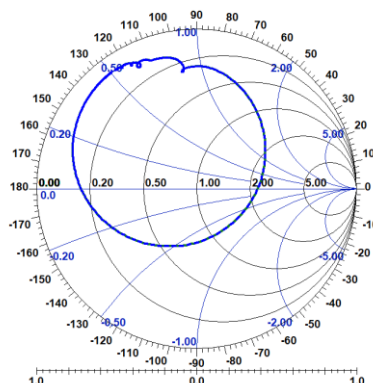


SS24xxBO2 Temperature Sensor (1-port Resonator)

This product is in compliance with RoHS 2011/65/EU and REACH.

Typical performance: S11 @ 23°C



Test Conditions:

RF power	-10 dBm
Temperature	23 °C
DC Voltage	0 V
Terminating source impedance (Z_s):	50 Ω
Terminating load impedance (Z_L):	50 Ω

		minimum	typical	maximum	unit
Nominal frequency *1	f_n	$f_n - 500$	see table 2	$f_n + 500$	kHz
Maximum Impedance value $\text{Re}(Z_{11})_{\max}$	$Z_{\max}$	90	110	130	Ω
Unloaded quality factor	Q_u	5300	6300	7300	
Maximum Impedance value spurious modes	Z_s		15	25	Ω
Ageing @200°C				0,5	K/1000h
Equivalent Circuit elements					
Motional capacitance	C_1	9.8	10.2	10.6	fF
Motional inductance	L_1	$L_1 - 20$	see table 2	$L_1 + 20$	nH
Motional resistance	R_1	0.9	1.0	1.15	Ω
Parallel capacitance	C_0	6.5	7.0	7.5	pF
Operating temperature range		-40		200	°C
Storage temperature range		-40		200	°C
Temperature coefficient of frequency	TC_F				
X3			-1.8967 E-4		ppm/K ³
X2			-6.6742 E-2		ppm/K ²
X1			-2.2589 E+1		ppm/K
X0			+6.0937 E+2		ppm

Electrostatic Sensitive Device

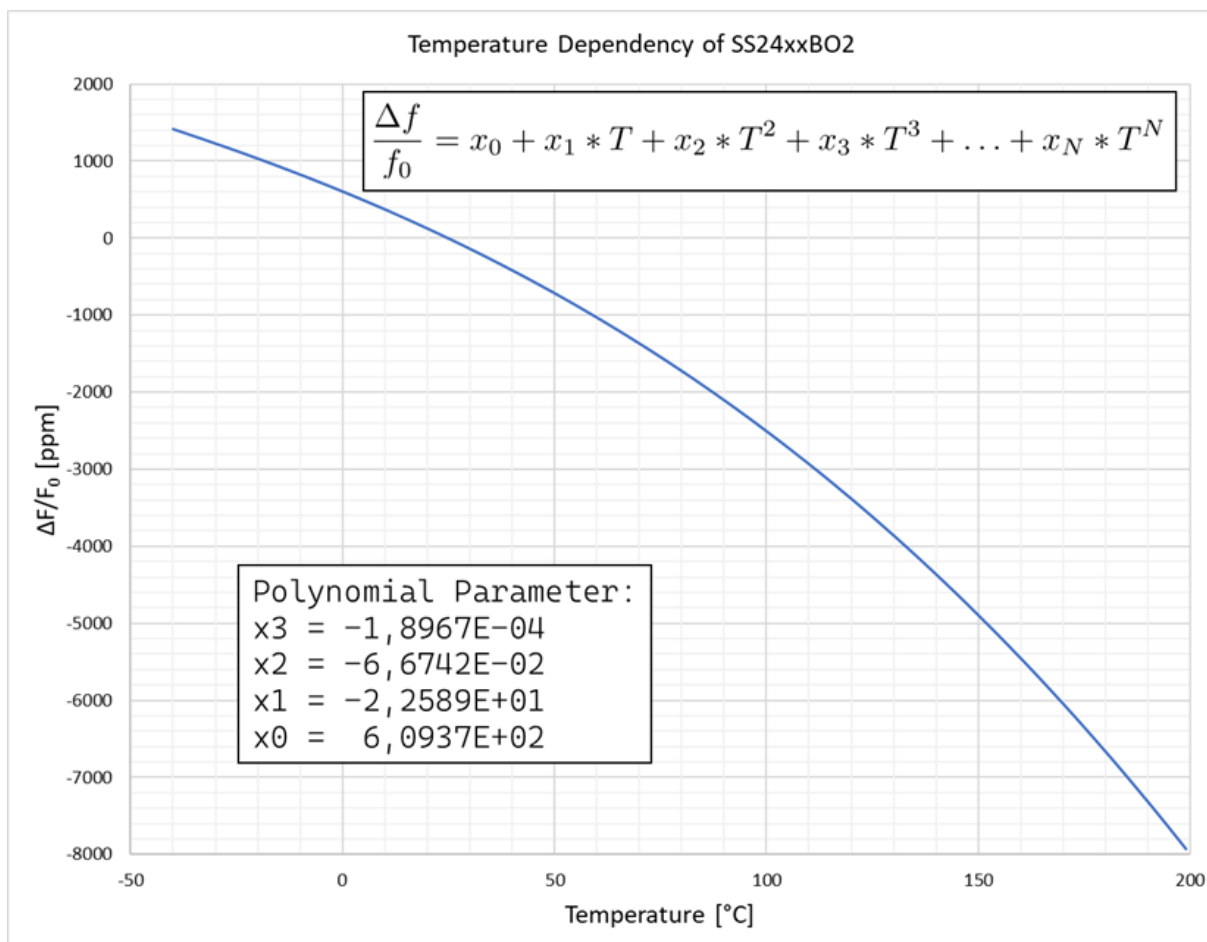
*1 Defined at maximum of real part of impedance $\text{Re}(Z_{11})_{\max}$

Table 1: Frequency and equivalent circuit

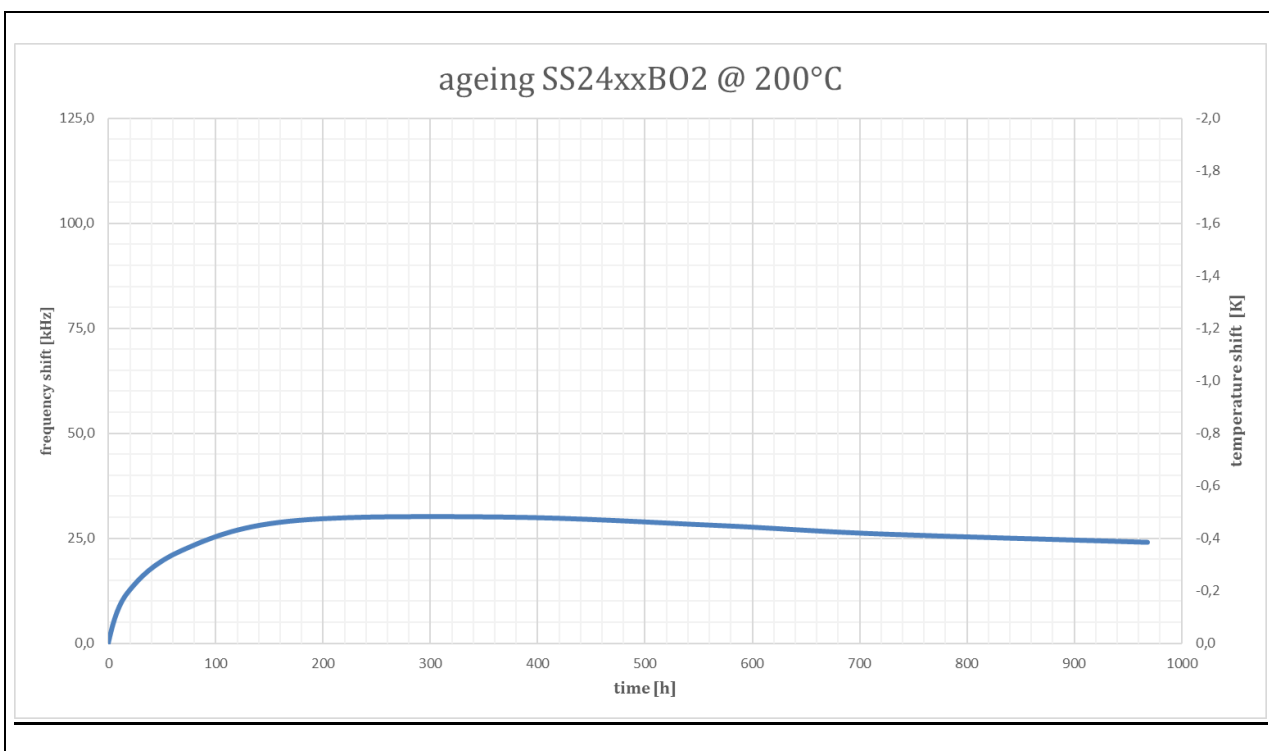
		Equivalent Circuit elements
Order Number	Nominal frequency f_n [MHz] *1	Motional inductance $L_1 = 1 / (2\pi F_n)^2 C_1$
SS2422BO2	2422.00	423 nH
...		
SS2430BO2	2430.00	420 nH
SS2445BO2	2445.00	415 nH
SS2458BO2	2458.00	411 nH
SS2459BO2	2459.00	410 nH
SS2474BO2	2474.00	405 nH
SS2476BO2	2476.00	405 nH
...		

Temperature coefficient of frequency

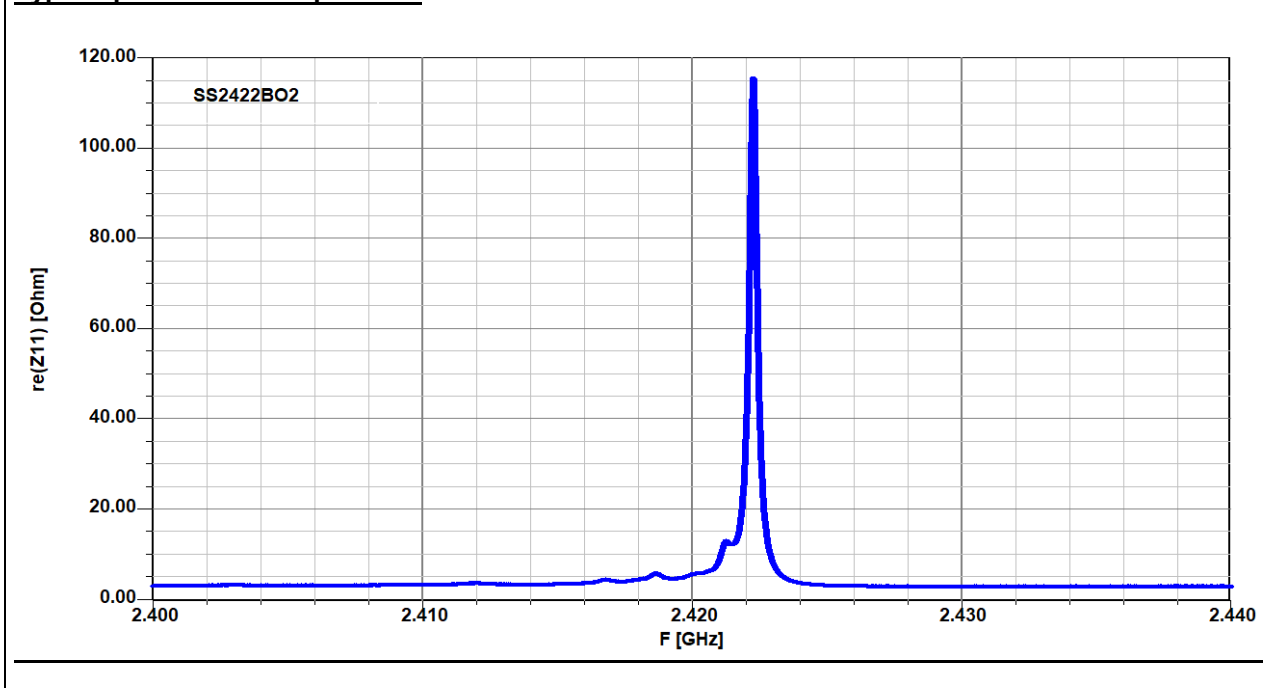
$$\Delta F/F_n = x_0 \cdot T^4 + x_1 \cdot T^3 + x_2 \cdot T^2 + x_3 \cdot T \quad \text{with } T \text{ in } ^\circ\text{C}$$

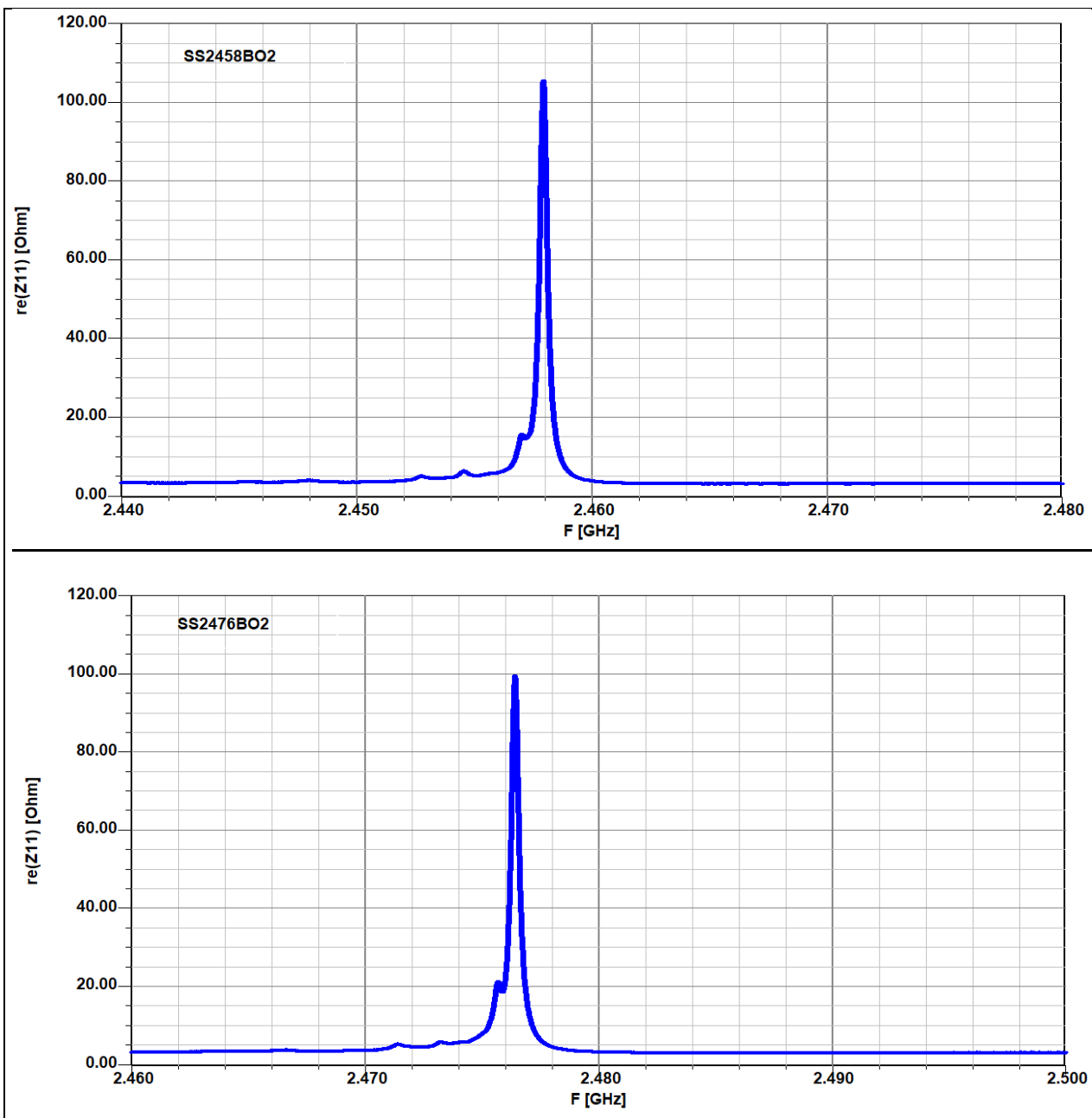


Ageing

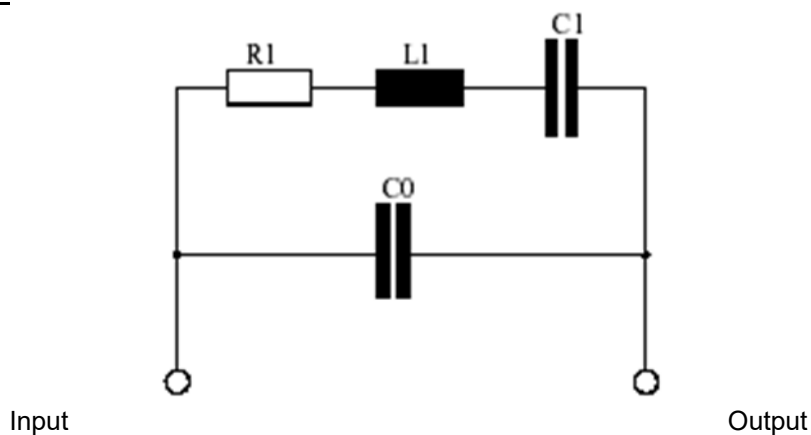


Typical performance Impedance

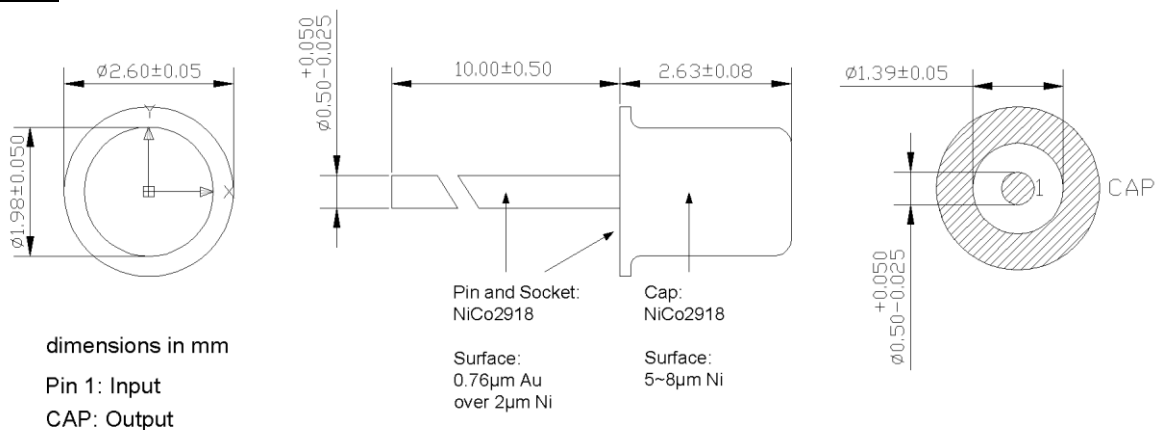




Equivalent Circuit



Package: TO25



Marking

The marking is located on the cap of the package: figures indicate last digits of the nominal resonance frequency in MHz, e.g. "44" in case of 2444 MHz.
Product ID, Lot Number, delivery date and other information is submitted on a label on transfer package.

