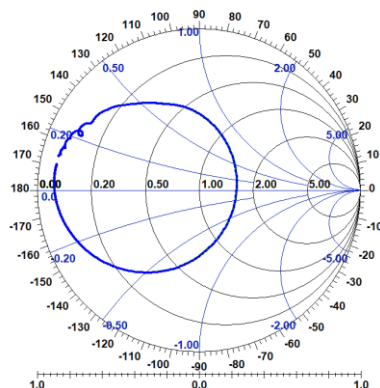


SS24xxBB3 Temperature sensor (1-port Resonator)

This product is compliant with RoHS 2011/65/EU.

Typical performance: S11 @ 23°C



Test Conditions:

RF power	-10 dBm
Temperature	23.0 °C
DC Voltage	0 V
Terminating source impedance (Z_s):	50 Ω
Terminating load impedance (Z_L):	50 Ω

		min	typical	max	unit
Nominal frequency *1	f_n	$f_n - 500$	see table 2	$f_n + 500$	kHz
Maximum Impedance value $\text{Re}(Z_{11})_{\text{max}}$	Z_{max}	64	80	95	Ω
Unloaded quality factor	Q_u	3200	3800	4400	
Maximum Impedance value spurious modes	Z_s		7	10	Ω
Ageing @275°C				2.5	K/1000h
Equivalent Circuit elements					
Motional capacitance	C_1	14.7	15.1	15.5	fF
Motional inductance	L_1	$L_1 - 20$	see table 2	$L_1 + 20$	nH
Motional resistance	R_1	0.95	1.1	1.25	Ω
Parallel capacitance	C_0	6.5	7.0	7.5	pF
Operating temperature range		-40		275	°C
Storage temperature range		-40		275	°C
Temperature coefficient of frequency	TCF				
X3			-1.086 10^{-4}		ppm/K ³
X2			-7.046 10^{-2}		ppm/K ²
X1			-2.244		ppm/K
X0			606.93		ppm

Electrostatic Sensitive Device

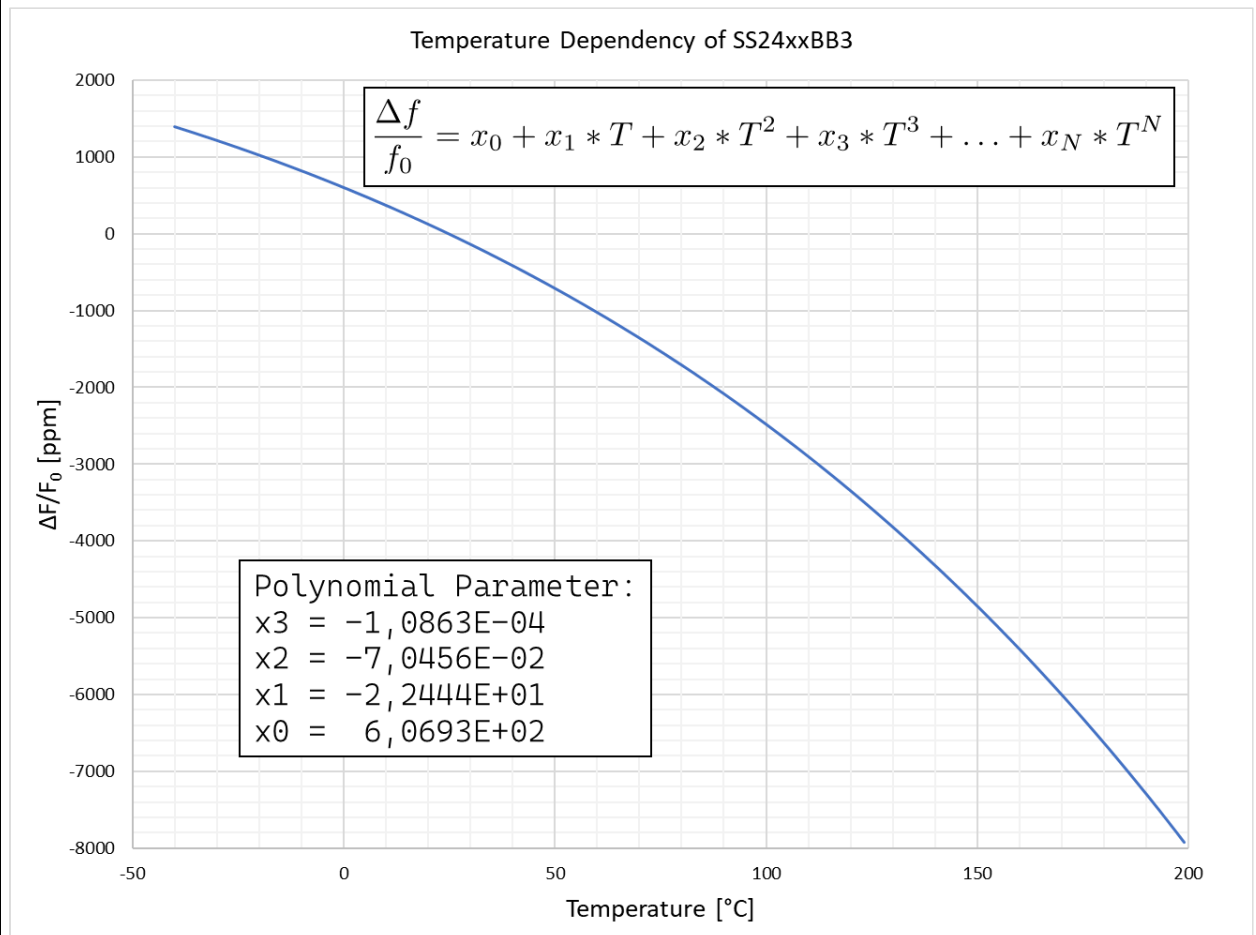
*1 Defined at maximum of real part of impedance $\text{Re}(Z_{11})_{\text{max}}$

Table 2: Frequency and equivalent circuit

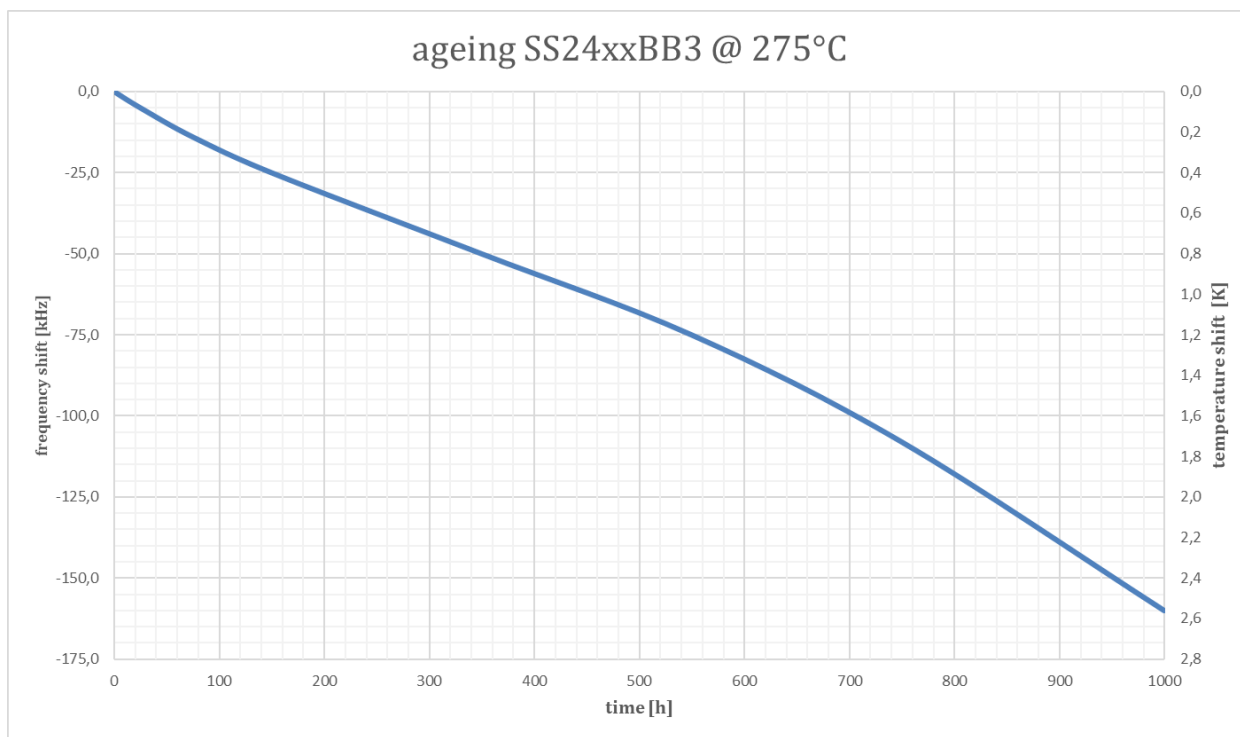
		Equivalent Circuit elements
Order Number	Nominal frequency f_n [MHz] *1	Motional inductance $L_1 = 1 / (2\pi F_n)^2 C_1$
...		
SS2430BB3	2430.00	284 nH
SS2445BB3	2445.00	280 nH
SS2455BB3	2455.00	278 nH
SS2462BB3	2462.00	276 nH
SS2474BB3	2474.00	274 nH
...		

Temperature coefficient of frequency

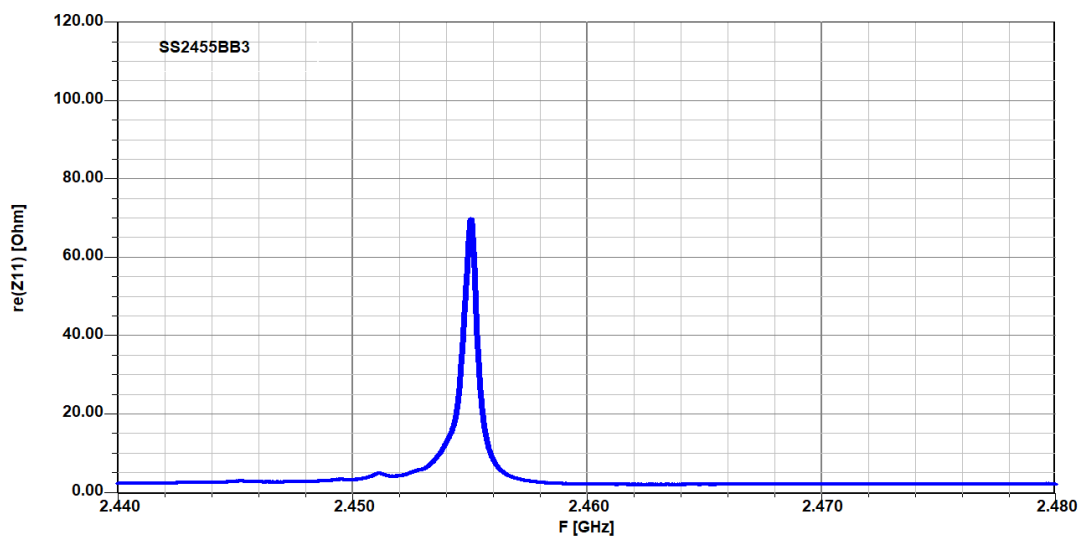
$$\Delta F/F_n = x_4 \cdot T^4 + x_3 \cdot T^3 + x_2 \cdot T^2 + x_1 \cdot T \quad \text{with } T \text{ in } ^\circ\text{C}$$

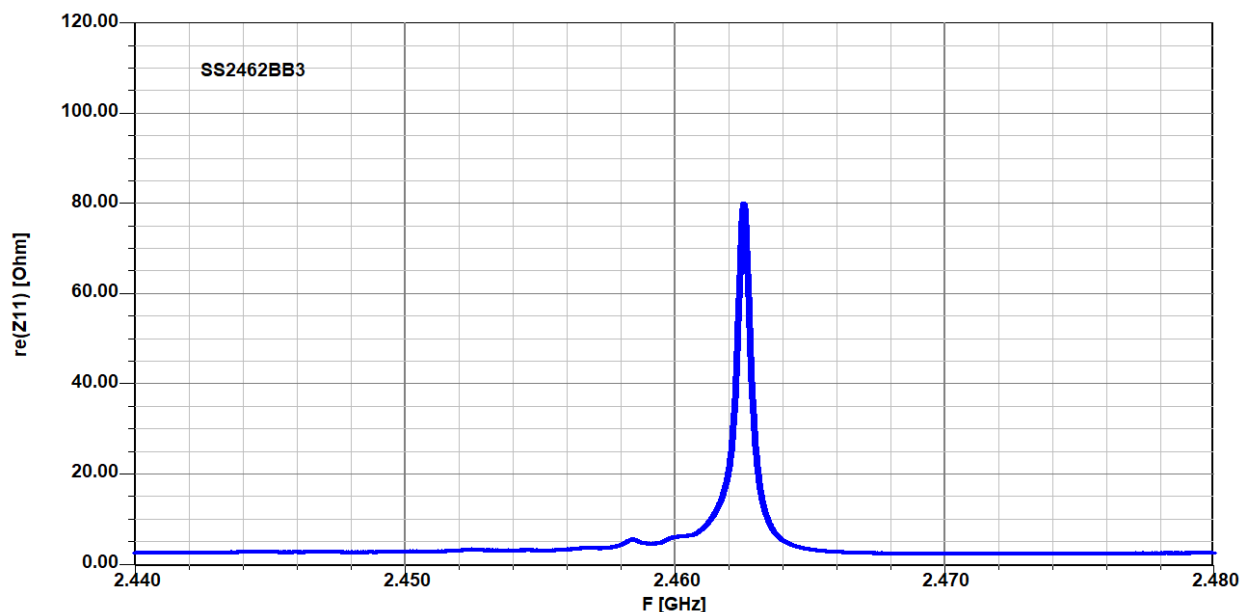


Ageing

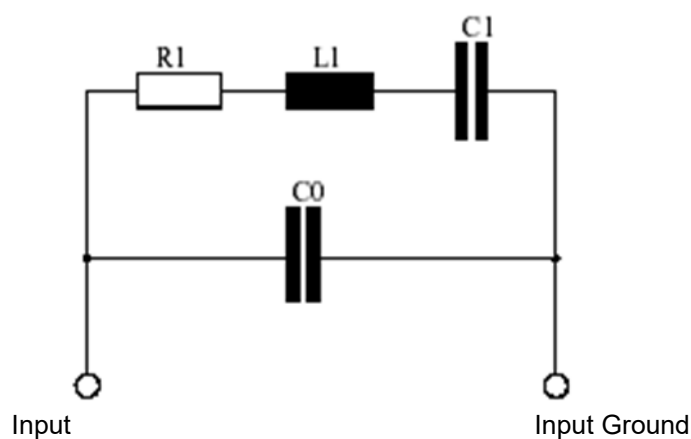


Typical performance Impedance

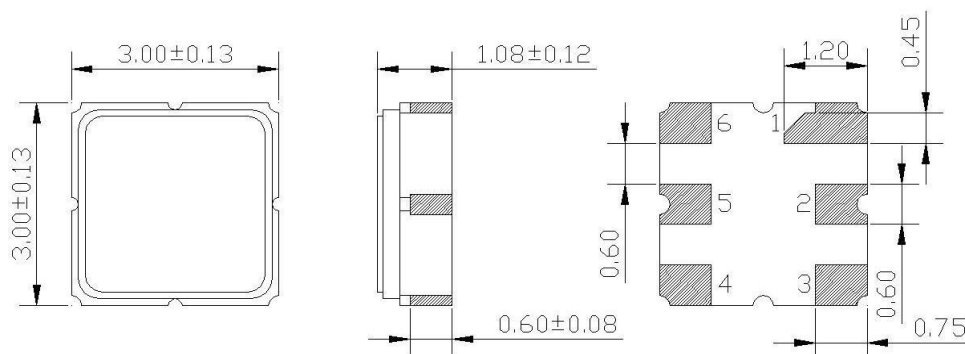




Equivalent Circuit



Package: S25 / 3.0*3.0mm²



All dimensions in mm

Pin 1	Case ground	Pin 6	not connected
Pin 2	Antenna (Input/Ground)	Pin 5	Antenna (Ground/Input)
Pin 3	not connected	Pin 4	Case ground

Data Sheet Preliminary

Marking

S...	Type
XXZZLL	Date code
XX	Year
ZZ	Calendar week
LL	Lot Number

