

- **Ideal for 433.92 MHz Transmitters**
- **Very Low Insertion Loss**
- **Quartz Stability**
- **Ultra Miniature Ceramic SMD Package (QCC8C)**

# SR5517

Absolute Maximum Rating (Ta=25°C)		
Parameter	Rating	Unit
CW RF Power Dissipation	$P$	0
DC Voltage	$V_{DC}$	±30
Operating Temperature Range	$T_A$	-10 ~ +60
Storage Temperature Range	$T_{stg}$	-40 ~ +85

Electronic Characteristics						
Parameter	Sym	Minimum	Typical	Maximum	Unit	
Frequency (25°C)	Nominal Frequency	$f_c$	NS	433.92	NS	MHz
	Tolerance from 433.92 MHz	$\Delta f_c$	-	-	± 75	KHz
Insertion Loss		$IL$	-	2.0	2.6	dB
Quality Factor	Unloaded Q-Value	$Q_u$	-	6,300	-	-
	50Ω Loaded Q-Value	$Q_L$	-	1,300	-	-
Temperature Stability	Turnover Temperature	$T_o$	25	-	55	°C
	Turnover Frequency	$f_o$	-	$f_c$	-	KHz
	Frequency Temperature Coefficient	$FTC$	-	0.032	-	ppm/°C <sup>2</sup>
Frequency Aging	Absolute Value during the First Year	$ f_A $	-	-	10	ppm/yr
DC Insulation Resistance Between any Two Pins		-	1.0	-	-	MΩ
RF Equivalent RLC Model	Motional Resistance	$R_M$	-	26	35	Ω
	Motional Inductance	$L_M$	-	60.1097	-	μH
	Motional Capacitance	$C_M$	-	2.2404	-	fF
	Shunt Static Capacitance	$C_o$	3.50	3.75	4.00	pF

NS = Not Specified

**Note:**

- The frequency  $f_c$  is the frequency of minimum IL with the resonator in the specified test fixture in a 50Ω test system with VSWR ≤ 1.2:1.
- Unless noted otherwise, case temperature TC = +25°C±2°C.
- Frequency aging is the change in fC with time and is specified at +65°C or less. Aging may exceed the specification for prolonged temperatures above +65°C. Typically, aging is greatest the first year after manufacture, decreasing in subsequent years.
- Turnover temperature, T<sub>0</sub>, is the temperature of maximum (or turnover) frequency, f<sub>0</sub>. The nominal frequency at any case temperature, TC, may be calculated from:  $f = f_o [1 - FTC (T_o - T_o)^2]$ .
- This equivalent RLC model approximates resonator performance near the resonant frequency and is provided for reference only. The capacitance C<sub>0</sub> is the measured static (nonmotional) capacitance between input terminal and ground or output terminal and ground.
- The measurement includes case parasitic capacitance.
- Derived mathematically from one or more of the following directly measured parameters:  $f_c$ , IL, 3 dB bandwidth,  $f_c$  versus T<sub>C</sub>, and C<sub>0</sub>.
- The specifications of this device are based on the test circuit shown above and subject to change or obsolescence without notice.
- Typically, equipment utilizing this device requires emissions testing and government approval, which is the responsibility of the equipment manufacturer.
- Our liability is only assumed for the Surface Acoustic Wave (SAW) component(s) per se, not for applications, processes and circuits implemented within components or assemblies.
- For questions on technology, prices and delivery, please contact our sales offices or e-mail to sales@vanlong.com.

Package Dimensions (QCC8C)



Electrical Connections

Terminals	Connection
2	Terminal 1
6	Terminal 2
4,8	Case-Ground
1,3,5,7	NC

Package Dimensions

Dimensions	Nom (mm)	Dimensions	Nom (mm)
A	2.08	E	1.20
B	0.60	F	1.35
C	1.27	G	5.00
D	2.54	H	5.00

Marking



1. R5517 - Part Code
2. Frequency in MHz
3. Date Code:  
 Y : Last digit of year  
 WW : Week No.

Equivalent LC Model and Test Circuit



Equivalent LC Model



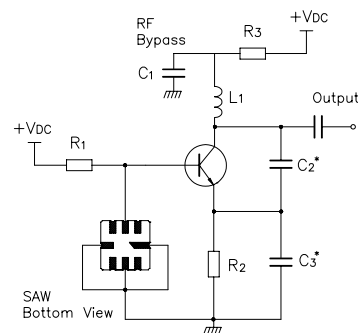
Test Circuit

Typical Application Circuit

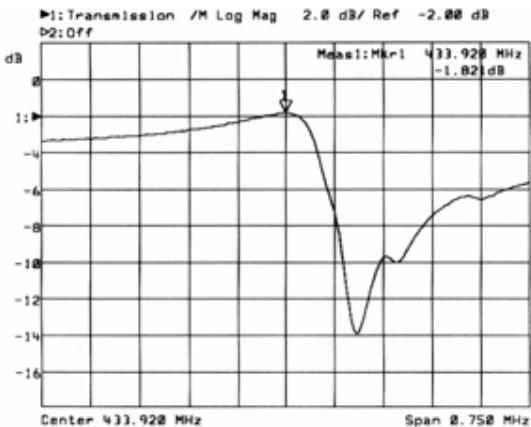
Low Power Transmitter Application



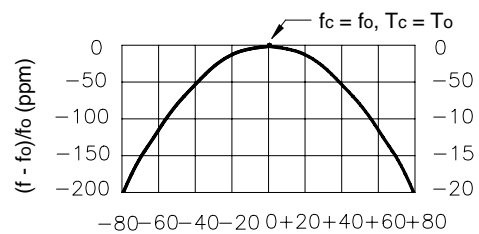
Local Oscillator Application



Typical Frequency Response



Temperature Characteristics



The curve shown above accounts for resonator contribution only and does not include oscillator temperature characteristics.