

# 7200 & 8200 SERIES – DIELECTRIC RESONATOR OSCILLATORS

## TECHNICAL FEATURE

### FEATURES

- High stability, fundamental oscillator
- Excellent phase noise characteristics
- Low spurious under vibration
- Mechanical tuning
- Electronic tuning (option)
- 7200 Series for harsh, military environments
- 8200 series for low cost industrial applications
- Compact size

Frequency Range (GHz)		3 to 4	4 to 5	5 to 7	7 to 9	9 to 15	15 to 20	20 to 26
Mechanical Tuning		0.5% (typ)						
RF Output Power (dBm)		+10 (min) to 13 (typ)			+10 (min) to 13 (typ)			+10 (min)
Frequency Accuracy		±1 MHz (typ)						
Frequency Stability <sup>(3)</sup>		550 ppm (max)						
Harmonic Levels		-20 dBc (max)						
Spurious Levels		-70 dBc (max)						
Phase Noise	Offset Freq.	@3.5	@4.5	@6.0	@8.0	@12.0	@17.0	@22.0
(SSB) dBc/Hz	10 kHz	-92	-91	-90	-90	-87	-84	-70
(typ)	100 KHz	-122	-121	-120	-115	-112	-109	-95
	1 MHz	<-140	<-140	<-140	<-130	<-130	<-130	-115
Load Pulling into 1.5:1 VSWR		0.02% (typ)						
Pushing		2 kHz/Volt (typ)						
Electronic Tuning (option)								
Tuning Range		0.2% (typ)						
Tuning Voltage		+1 to +10 Vdc						
DC Current @ +15V		60 to 150 mA <sup>(1)</sup>			80 to 200 mA <sup>(1)</sup>			
Operating Temperature Range		-20°C to +70°C (industrial grade) (8200 series) -45°C to +85°C (military grade) (7200 series) <sup>(2)</sup>						
Mechanical Dimensions (inches)		2.0 x 2.5 x 1.0	1.25 x 1.75 x 0.65 or 0.75 x 1.50 x 0.48			0.75 x 1.5 x 0.48	0.70 x 1.06 x 0.35	

(1) Depends on frequency and RF output power level chosen.

(2) Hermetically sealed

(3) Stability is typically ±25 PPM for optional temperature compensated version

## 7200 & 8200 SERIES – DIELECTRIC RESONATOR OSCILLATORS

- Low Noise, Dielectric Resonator Oscillator (DRO) or Coaxial Resonator Oscillator (CRO)
- Analog phase-locked loop using a high performance sampling phase detector
- Internal voltage regulator
- High stability, low noise crystal reference oscillator
- Military designs for Hi-Rel, harsh environment applications

Frequency Coverage	.75 GHz to 18.0 GHz
Power Output	+10 dBm nominal
Harmonics	-30 dBc, maximum
Spurious	-80 dBc, maximum
Frequency Stability	Same as external reference
Phase Noise	Reference noise plus 20 log (N) +3 dB (Note 1)
Lock Alarm	TTL
DC Power	+15 Volts @ 350 mA (max)
Temperature Range	-40° C to +85°C
RF Connectors	SMA female
DC Connectors	Feedthru
Dimensions	7505 Series: 3.0" x 4.0" x 1.0" 7515 Series: 2.5" x 3.0" x 1.0"
<b>EXTERNAL REFERENCE INPUT</b>	
Frequency Range	100 MHz nominal (Note 2)
Power Input	0 dBm nominal
Input Impedance	50 ohms

### NOTES:

1. Where "(N)" equals output frequency divided by input frequency. Formula valid except  $\pm$  decade of LBW it is typically  $20 \text{ Log } N + 6 \text{ dB to } 10 \text{ dB}$ .
2. Depending on final multiplication required, reference frequency may vary from 5 MHz to 300 MHz.
3. Improved performance available – consult your factory representative.