



# MODEL 1914

Miniature OCXO 9x14mm

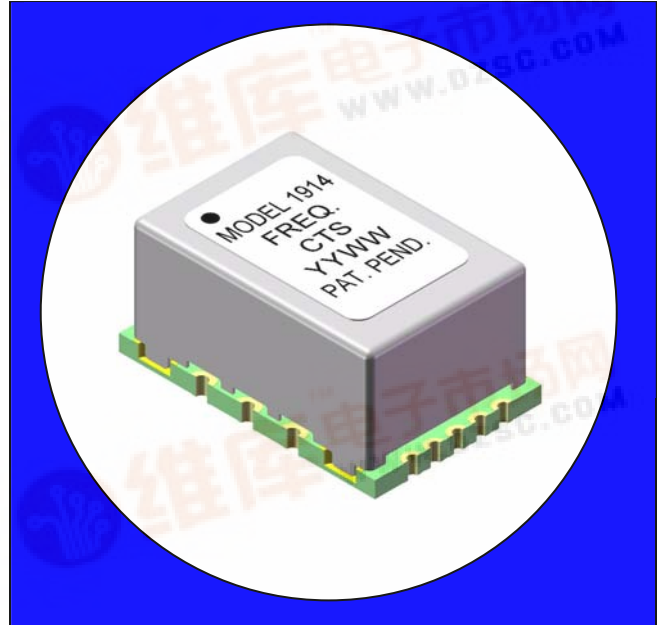
## FEATURES

- Industry Standard 9x14mm SMT Footprint
- 3.3V or 5.0V operation
- Commercial and Industrial temp. range
- LVCMOS output
- Frequency Stability and Holdover to Stratum 3 requirements of GR-1244
- Low Phase Noise
- Tape & Reel Packaging
- Optional Voltage Control
- Fully compliant to RoHS Directive 2002/95/EC

## DESCRIPTION

The CTS model 1914 is a low cost, small size, high performance SMT OCXO.

**APPLICATIONS:** Telecom Switching  
Wireless Communication



## ELECTRICAL SPECIFICATIONS

Parameter	Conditions & Remarks	Min	Typical	Max	Unit
<b>Operating Conditions</b>					
Operating Temperature Range	T <sub>OP</sub>	-40	-	+85	°C
Supply Voltage	3.3V – Standard 5.0V – Available	3.135 4.75	3.300 5.0	3.465 5.25	Vdc
Supply Power:					
Warm-Up:	P <sub>max</sub>	-	-	2.4	W
Steady State:	P <sub>SS</sub> @ +25°C (still air)	-	-	0.7	W
Output Load		5	-	15	pF
<b>Frequency Stability</b> (Specifications noted apply for 3.3V supply and at +25°C (still air) unless otherwise noted)					
Standard Frequencies (Consult factory for different frequencies)	f <sub>NOM</sub>	-	10, 12.8, 16.384, 19.2, 19.44, 20	-	MHz
Initial Frequency Tolerance	@ 25°C, at time of shipment	-	± 0.100	± 0.200	ppm
Freq. vs Temperature (pk-pk)	0°C to 70°C - Standard -40°C to 85°C - Available	-	-	0.100 0.280	ppm
Freq. vs Supply Voltage	V <sub>CC</sub> ± 5%	-	± 0.030	-	ppm
Freq. vs Load	For ± 5% change	-	± 0.005	-	ppm
Freq. vs Time (Aging)	per day (after 30 days)	-	± 0.005	-	ppm
	15 years	-	± 2.500	-	ppm
Holdover Stability (pk-pk)	Standard: All causes, 24hrs	-	-	0.370	ppm
	Available: (Constant voltage)				
	30 to 50°C (24 hrs) (5 days)			0.040 0.100	ppm
	0 to 70°C (14 days)			0.250	





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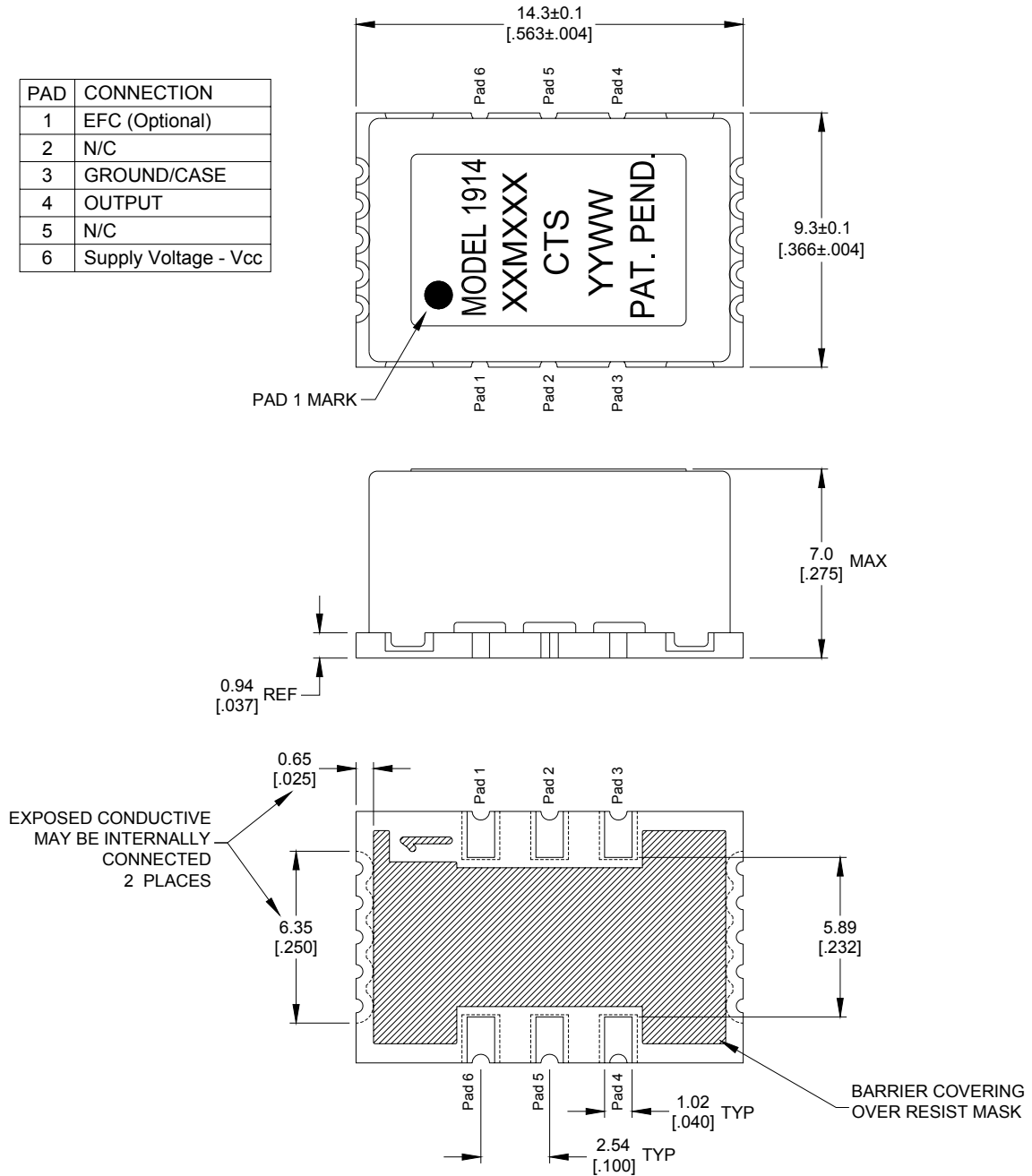
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Parameter	Conditions & Remarks	Min	Typical	Max	Unit
Total Free-Running Accuracy	all causes for 15 years ( $\Delta f/f_{NOM}$ )	-	-	$\pm 4.600$	ppm
Short Term Frequency Stability	Allan Deviation 0.1 sec tau 1.0 sec tau			0.1 0.1	ppb
Warm-Up Time	@ 25°C, to final frequency	-	2	5	minutes
<b>Output Parameters</b>					
Output Signal		LVCMOS Square Wave			
Amplitude	$V_{OL}$	-	-	10% $V_{CC}$	Vdc
	$V_{OH}$	90% $V_{CC}$	-	-	
Rise/Fall Times	20% to 80% @ 15pf load	-	-	3	ns
Duty Cycle	@ 50% of output signal	45	50	55	%
Spurious		-	-	-80	dBc
Non and Sub-harmonics		-	-	-100	dBc
Phase Noise (Typical @ 10 Mhz)	10Hz	-	-95	-80	dBc/Hz
	100Hz	-	-125	-115	dBc/Hz
	1kHz	-	-145	-135	dBc/Hz
	10kHz	-	-154	-145	dBc/Hz
	100kHz	-	-154	-145	dBc/Hz
Integrated jitter	$\Delta f = 12$ KHz thru 20 MHz	-	0.3	1.0	psec
<b>Electronic Frequency Adjustment (Optional)</b>					
Control voltage	$V_C$ : Standard Available	0.3 0.5	1.65 2.5	3.0 4.5	volts
Range		$\pm 9.6$	-	-	ppm
Slope	Positive, monotonic	-	-	-	
Input Impedance	$Z_{IN}$	-	1.0	-	M ohms
Linearity		-	-	10	%

## MECHANICAL SPECIFICATIONS

### PACKAGE DRAWING

PAD	CONNECTION
1	EFC (Optional)
2	N/C
3	GROUND/CASE
4	OUTPUT
5	N/C
6	Supply Voltage - Vcc



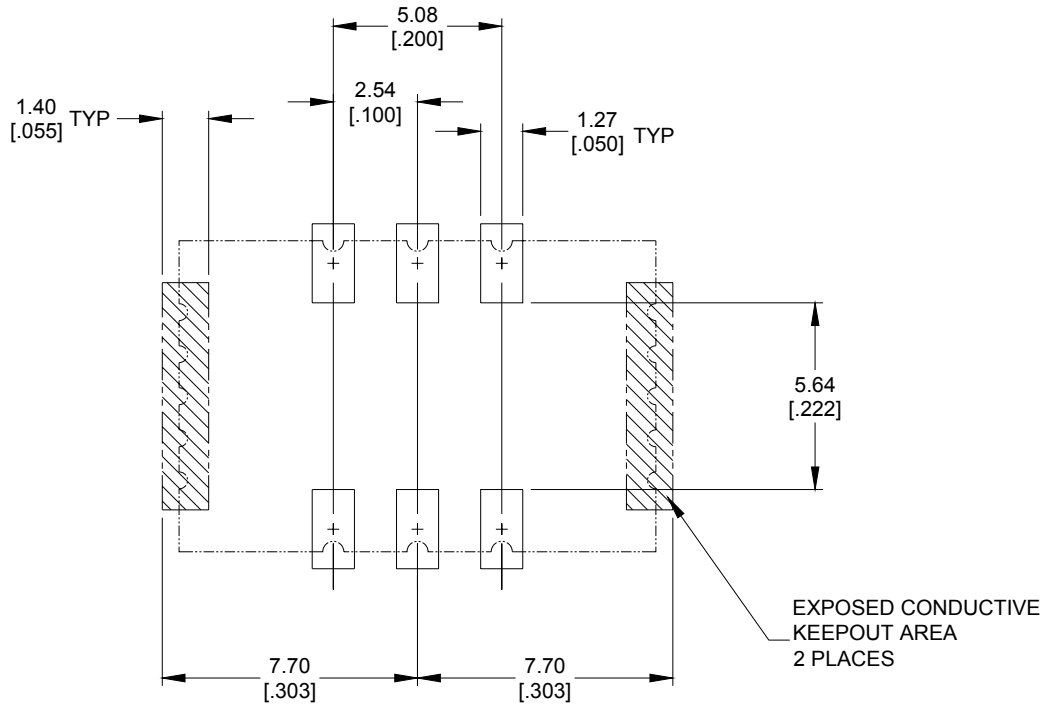
ALL DIMENSIONS ARE IN MM [INCHES].

ALL DIMENSIONS ARE NOMINAL UNLESS OTHERWISE SPECIFIED.

LEAD TERMINATION FINISH: GOLD FLASH, <10 MICRO INCH, OVER Ni PLATED Cu.

## MECHANICAL SPECIFICATIONS (Continued)

### SUGGESTED SOLDER PAD GEOMETRY



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### MAXIMUM SOLDERING PROFILE

Temperature	>217°C	260°C (Absolute max temperature)
Time	2.5min	10 sec

Note: Part is not designed to be reflowed in an inverted position.

- ◆ Fully compliant to RoHS Directive 2002/95/EC
- ◆ Co-Planarity (from seating plane): max. 0.1mm
- ◆ MSL: level 1
- ◆ Device quantity is 500 pcs maximum per 330 mm reel

