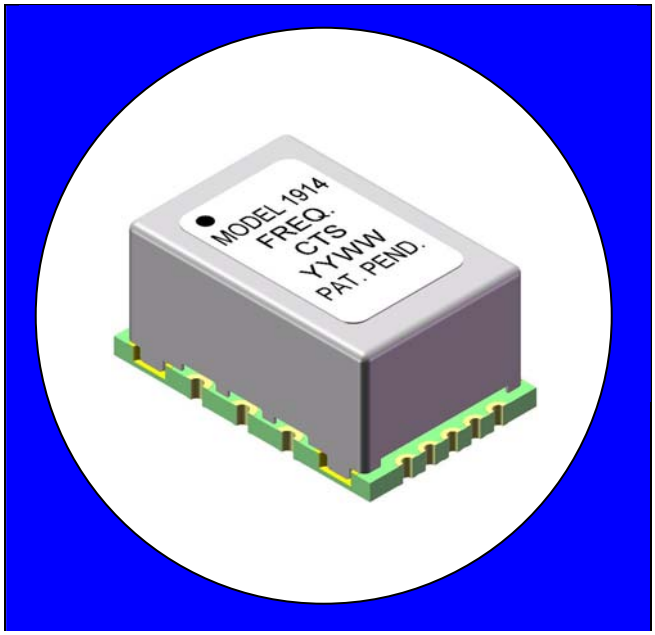
MODEL 1914

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
Operating Conditions					
Operating Temperature Range	T_{OP}	-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: Steady State:	 P_{max} P_{SS} @ +25°C (still air)	 - -	 - -	 2.4 0.7	 W W
Output Load		5	-	15	pF
Frequency Stability	(Specifications noted apply for 3.3V supply and at +25°C (still air) unless otherwise noted)				
Standard Frequencies (Consult factory for different frequencies)	f_{NOM}	-	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_{CC} ± 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 to 70°C (14 days)			 0.040 0.100 0.250	ppm

• • • CTS Electronic Components, Inc. • 171 Covington Drive • Bloomingdale, IL 60108 • U.S.A. • • •
• • • www.ctscorp.com • • •

Parameter	Conditions & Remarks		Min	Typical	Max	Unit
Total Free-Running Accuracy	all causes for 15 years ($\Delta f/f_{NOM}$)		-	-	± 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
Output Parameters						
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	Δf = 12 KHz thru 20 MHz		-	0.3	1.0	psec
Electronic Frequency Adjustment (Optional)						
Control voltage	V_C : Standard Available		0.3 0.5	1.65 2.5	3.0 4.5	volts
Range			±9.6	-	-	ppm
Slope	Positive, monotonic		-	-	-	
Input Impedance	Z_{IN}		-	1.0	-	M ohms
Linearity			-	-	10	%

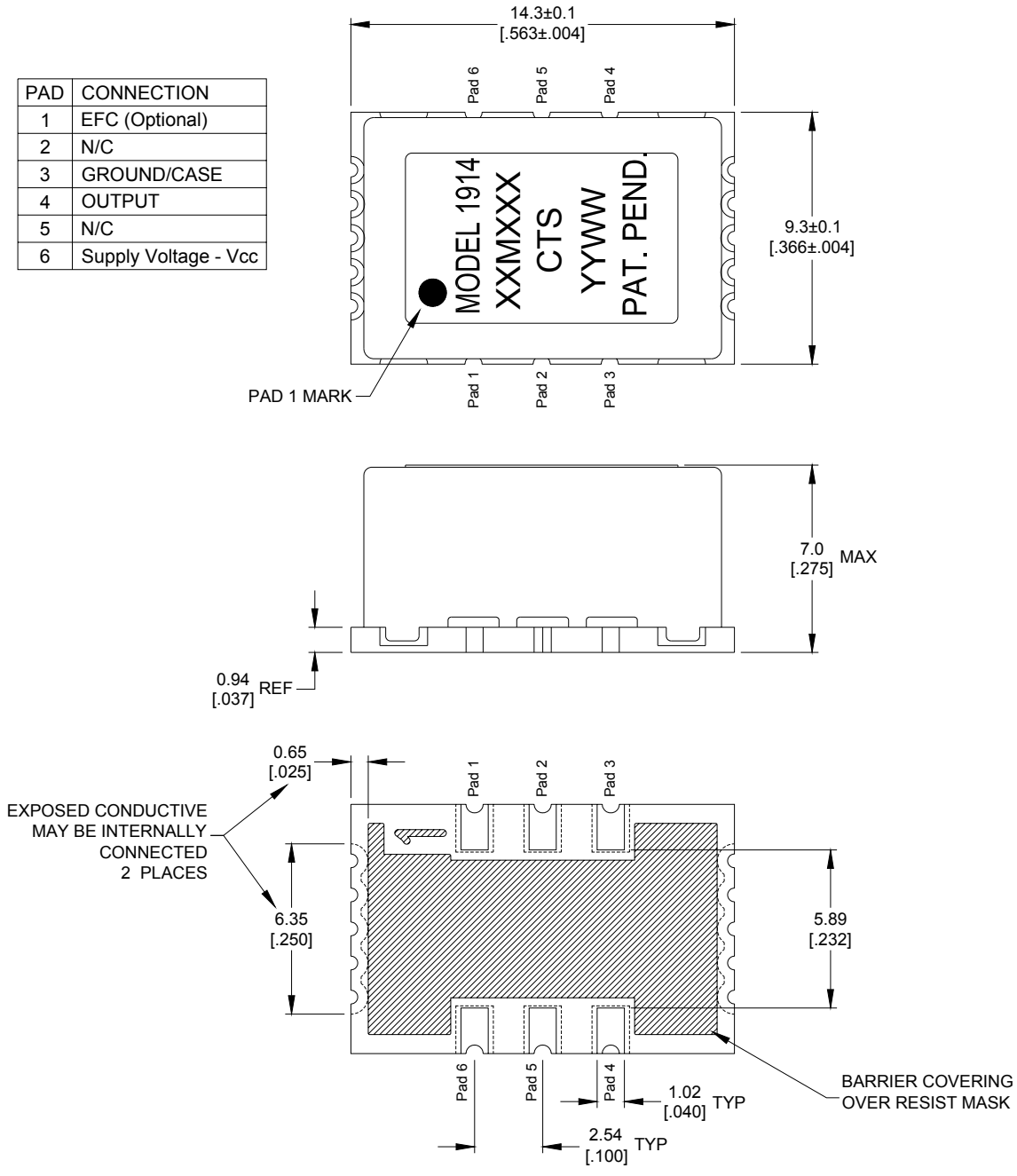
• • • CTS Electronic Components, Inc. • 171 Covington Drive • Bloomingdale, IL 60108 • U.S.A. • • •

• • • www.ctscorp.com • • •

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].

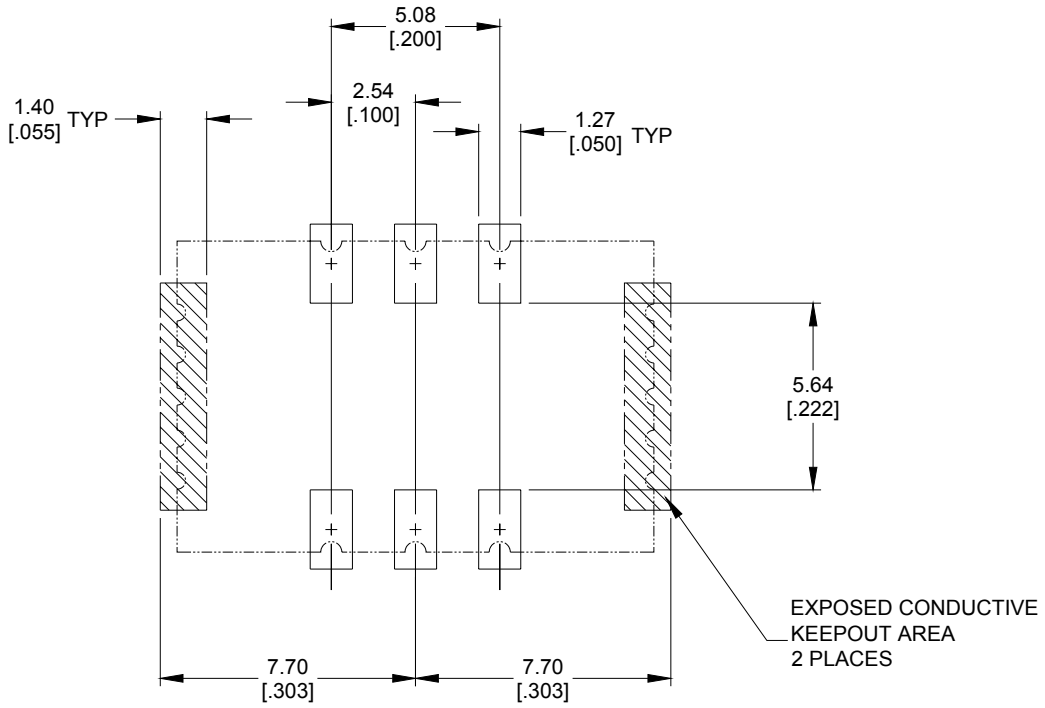
ALL DIMENSIONS ARE NOMINAL UNLESS OTHERWISE SPECIFIED.

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

• • • CTS Electronic Components, Inc. • 171 Covington Drive • Bloomingdale, IL 60108 • U.S.A. • • •
• • • www.ctscorp.com • • •

MECHANICAL SPECIFICATIONS (Continued)

SUGGESTED SOLDER PAD GEOMETRY



ALL DIMENSIONS ARE IN MM [INCHES].

ALL DIMENSIONS ARE NOMINAL.

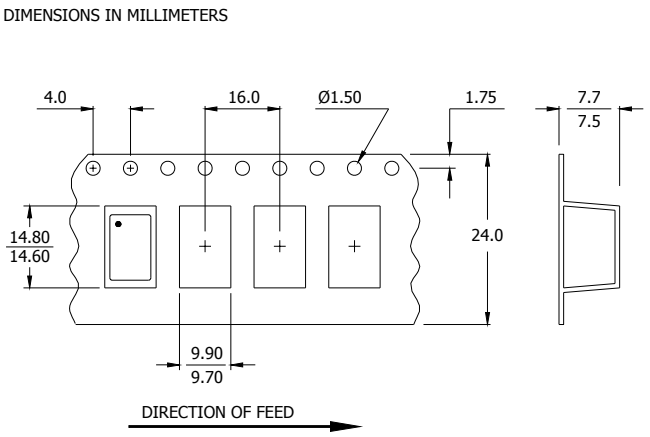
MAXIMUM SOLDERING PROFILE		
Temperature	>217°C	260°C (Absolute max temperature)
Time	2.5min	10 sec
Note: Part is not designed to be reflowed in an inverted position.		

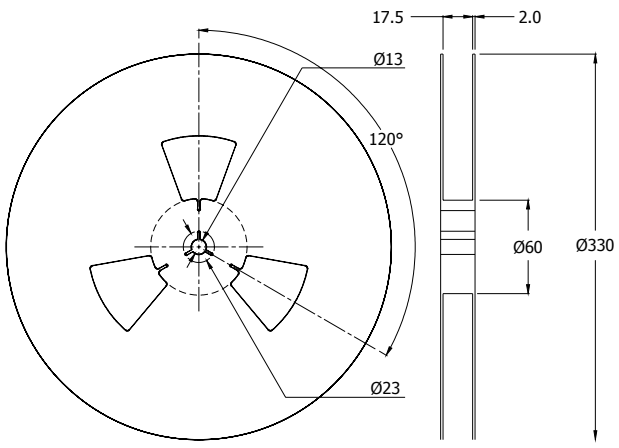
- Fully compliant to RoHS Directive 2002/95/EC
- Co-Planarity (from seating plane): max. 0.1mm
- MSL: level 1
- Device quantity is 500 pcs maximum per 330 mm reel

• • • CTS Electronic Components, Inc. • 171 Covington Drive • Bloomingdale, IL 60108 • U.S.A. • • •
• • • www.ctscorp.com • • •

TAPE AND REEL INFORMATION

DIMENSIONS IN MILLIMETERS





Device quantity is 500 pcs maximum per 330 mm reel

• • • CTS Electronic Components, Inc. • 171 Covington Drive • Bloomingdale, IL 60108 • U.S.A. • • •

• • • www.ctscorp.com • • •