



# 1498003-10M000

10.0 MHz, 9x14 mm, SMT OCXO

## Features

- Industry Standard 9x14mm footprint
- 3.3Vdc Supply Voltage
- LVCMOS Output
- Low Phase Noise



Part Dimensions: 9.7 × 14.9 × 7.0 mm

## Electrical Specifications

Parameter	Conditions & Remarks	Min	Typical	Max	Unit
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## Operating Conditions

Operating Temperature Range	T <sub>OP</sub>	0	-	+70	°C
Supply Voltage	V <sub>CC</sub> ; ± 5%	3.135	3.300	3.465	Vdc
Power Consumption	Warm-up	-	-	2.7	W
	Steady State; T <sub>A</sub> = 25°C; Still Air	-	0.7	1	W
Load		13.5	15	16.5	pF

## Frequency Stability

Frequency	F <sub>NOM</sub>		10.000		MHz
Frequency Calibration	25°C at time of shipment	-	-	±200	ppb
Freq. vs Temperature	ΔF/F	-	-	±10	ppb
Freq. vs Supply Voltage	V <sub>CC</sub> ±5%	-	-	±5	ppb
Freq. vs Time (Aging)	After 30 days operation	-	-	±1	ppb/day
		-	-	±100	ppb/year
		-	-	±0.5	ppm/10 yrs
Free run accuracy	All causes - 10 years	-	-	±1.0	ppm
Frequency Retrace	0.5 hours on after 24 hours off, preceded by 24 hours on. Ref to turn-off frequency	-	-	+/-50	ppb
Allan Deviation	1.0 sec	-	-	0.05	ppb
Warm-up time	Within 50 ppb ref to 1hour	-	-	5	min
Holdover stability (24 hours)	Over operating temperature range.	-	-	11	ppb, pk-pk
Wander Generation	Meets Stratum 3E MTIE and TDEV per Telcordia GR-1244-CORRE				



## Electrical Specifications (Continued)

Parameter	Conditions & Remarks	Min	Typical	Max	Unit
Output Parameters					
Output Signal	LVCMOS Square Wave				
Amplitude	$V_{OL}$	-	-	0.4	Vdc
	$V_{OH}$	2.4	-	-	
Rise/Fall Times	10% to 90%, 15 pf load	-	-	5	ns
Duty Cycle	@50% of output signal	45	-	55	%
Phase Noise	1Hz	-	-85	-	dBc/Hz
	10Hz	-	-115	-	
	100Hz	-	-138	-	
	1KHz	-	-148	-	
	10KHz	-	-152	-	
	100KHz	-	-154	-	

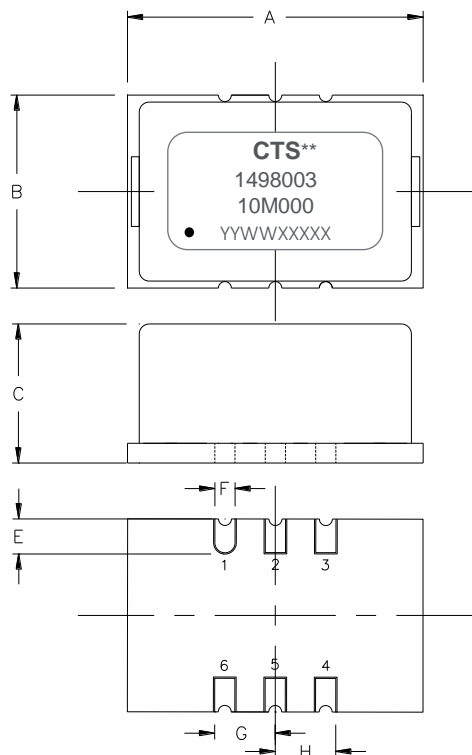
## Electronic Frequency Control - EFC

EFC Control Voltage	$V_C$	0.0	1.65	3.3	Volts
Frequency Adjust Range		$\pm 0.7$	-	$\pm 2.0$	ppm
Slope	Positive, monotonic	-	-	-	
Input Impedance	$Z_{IN}$	100	-	-	Kohms
Linearity		-	-	10	%

## Mechanical and Environmental

Storage Temperature	-55 to +105°C
Reflow Profile	IPC/JEDEC J-STD-20, Pb-Free process <b>Note:</b> This product is not designed to be reflowed in an inverted position.
Mechanical Shock	100g, 6ms duration, 1/2 sine wave, 3 shocks each direction along 3 mutually perpendicular planes.
Drop	10 cm height, 3 times onto hard board with 3 cm thickness – IEC60028-2-32 test Ed
Bumping	40g, 6ms, 4000 $\pm 10$ times in each of three mutually perpendicular axes
Random Vibration	Frequency range: 1Hz-4Hz-100Hz-200 Acceleration: 0.0001g <sup>2</sup> /Hz-0.01g <sup>2</sup> /Hz-0.01g <sup>2</sup> /Hz-0.001g <sup>2</sup> /Hz Grms=1.15g 30 minutes, each axis
Sine Vibration	10-55 Hz, 0.75 mm DA, 30 minutes per axis
Thermal Shock	-40/+85°C. 0.5 hour dwell with <30 second transitions. 100 cycles
RoHS	Lead-Free. Fully compliant to RoHS Directive 2011/65/EU
MSL	Level 2

## Mechanical Specifications



### Marking

**	Mfg Site Code
YYWWXXXXX	Serial Number (mfg date code = first 4 digits of s/n)

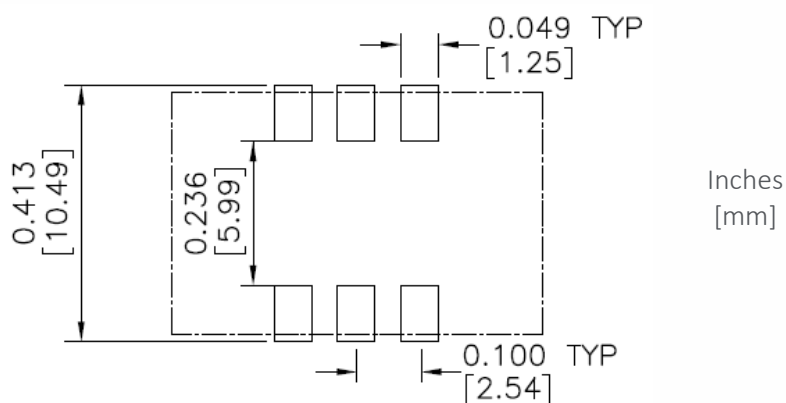
### Dimensions (mm)

Symbol	Min	Max
A	-	14.9
B	-	9.7
C	-	7.0
E	1.6	1.8
F	0.9	1.1
G	2.54 nominal	
H	2.54 nominal	

### Pin Assignments

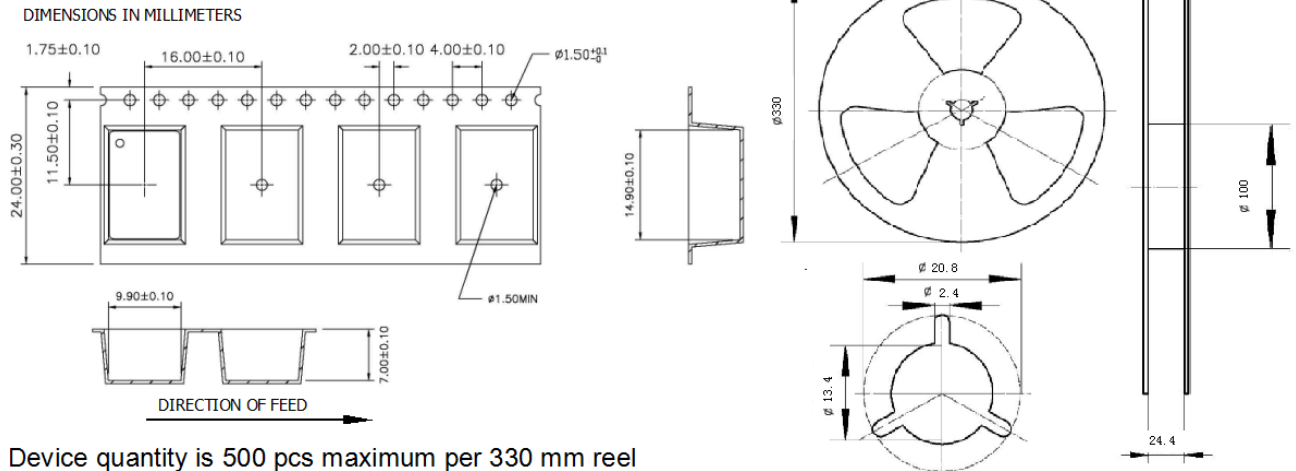
PAD	Connection
1	V <sub>C</sub>
2	N/C
3	Ground
4	Output
5	N/C
6	V <sub>CC</sub>

## Recommended Solder Pad Geometry:



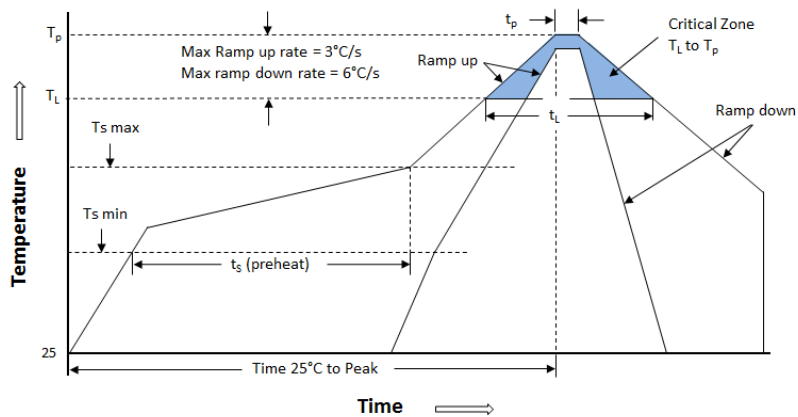
## Packing: Tape and Reel

## TAPE AND REEL INFORMATION



## Reflow:

Reflow profile per IPC/JEDEC J-STD-020D



Ts max to T <sub>L</sub> (Ramp-up Rate)	3°C/second max
Preheat	
Temperature Min(Ts Min)	150°C
Temperature Typical( Ts Typ)	175°C
Temperature Max.(Ts Max)	200°C
Time(ts)	60-120 seconds
Ramp-up Rate(T <sub>L</sub> to Tp)	3°C/second max
Time Maintained Above:	
--Temperature(T <sub>L</sub> )	217°C
--Time(t <sub>L</sub> )	60-150seconds
Peak Temperature (Tp)	245°C max for 10 seconds
Time within 5°C of actual peak(t <sub>p</sub> )	20 seconds
Ramp-down Rate	6°C/second max
Time 25°C to Peak Temperature (t)	8 minutes max

Note: The temperatures shown represent the device body temperature

This product is specified for use only in standard commercial applications. Supplier disclaims all express and implied warranties and liability in connection with any use of this product in any non-commercial applications or in any application that may expose the product to conditions that are outside of the tolerances provided in its specification.