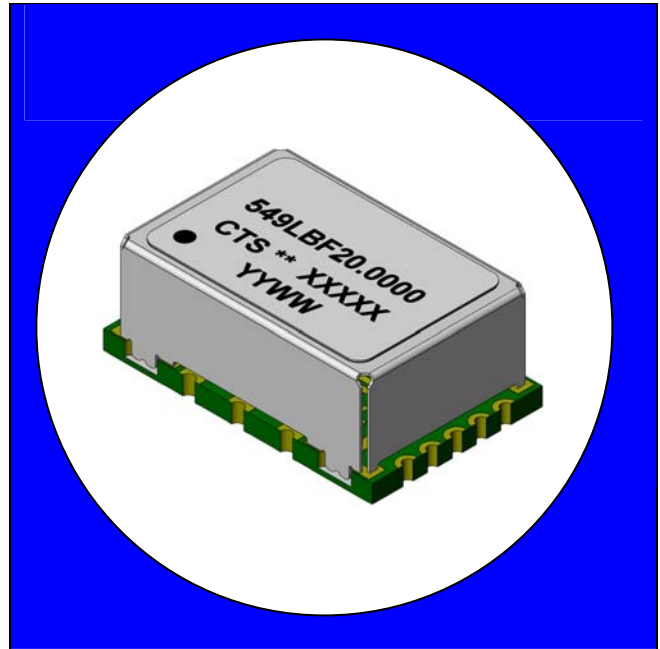


FEATURES

- Standard 9x14mm Surface Mount Footprint
- Output frequency from 6.4 MHz to 20 MHz
- CMOS/TTL Compatible
- Temperature Stability, ± 0.5 or ± 1 ppm option
- ITU G.813 Option 1: ± 4.6 ppm for 20 years
- +3.3 or +5 Vdc Operation
- Commercial or Industrial Operating Temp
- Output Enable Standard
- Electrical Frequency Adjustment Option
- Tape & Reel Packaging
- RoHS Compliant – Fully compliant to RoHS Directive 2002/95/EC

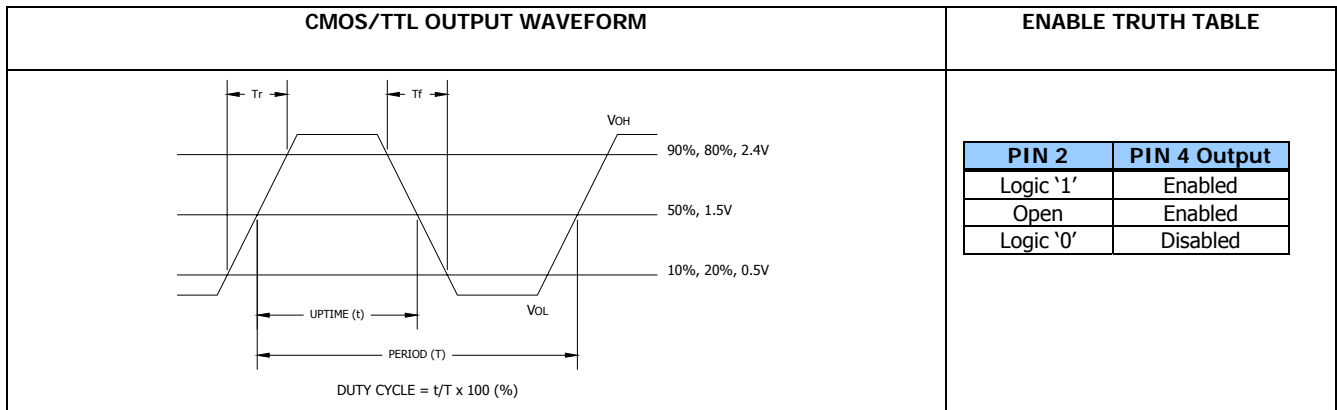


DESCRIPTION

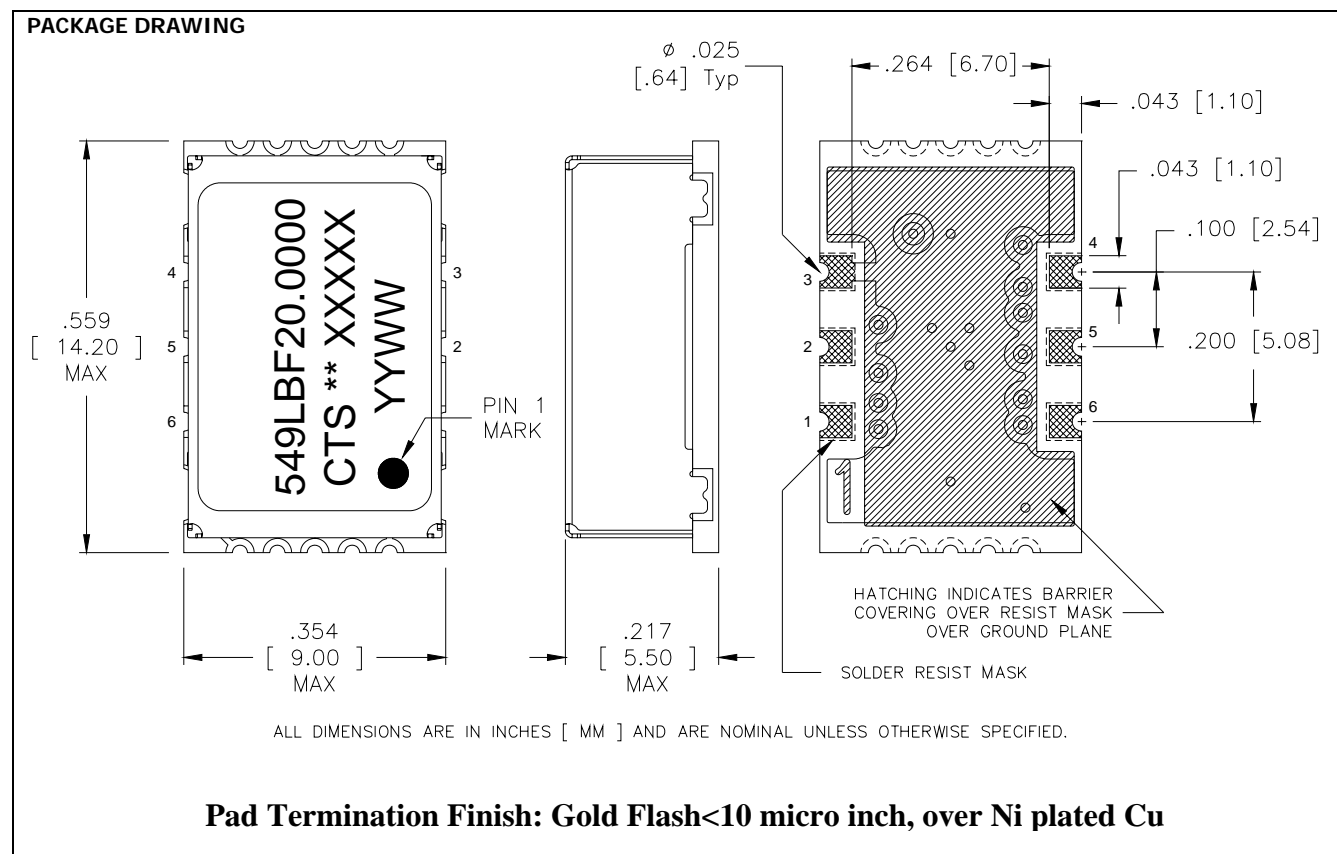
The MODEL 549 TCXO/TCVCXO offers small size, surface mount, with options for operating supply voltage, operating temperature range, and frequency stability. It offers long term frequency accuracy of ± 4.6 ppm for 20 years. The small size and mounting means it is compatible with most manufacturing processes. The enhanced stability means it is the perfect choice for today's communications applications that require tight frequency control.

ELECTRICAL CHARACTERISTICS

	PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Electrical and Waveform Parameters	Maximum Supply Voltage Range	V_{CC}	-	2.4	-	5.5	V
	Storage Temperature	T_{STG}	-	-55	-	125	°C
	Operable Temperature	T_A	-	-40	25	+85	°C
	Output Frequency	f_o	-	6.4	10, 12.8, 16.384 19.44, 20	25	MHz
	Operating Supply Voltage	V_{CC}	Option L:	3.135	3.3	3.465	V
			Option H:	4.75	5.0	5.25	
	Input Current	I_{CC}	$C_L = 15 \text{ pf}$ $V_{CC} +5\%$	-	6	10	mA
	Initial Frequency Accuracy @ 25°C	$\Delta f/f_o$	At time of Shipment $V_c @ 0.5 V_{CC}$ (with $V_{control}$ option)	-	0.1	±0.25	ppm
	Temperature Stability / Operating Temp Range	$\Delta f/f_o$	Option A: -20°C to +70°C	-	±0.35	±0.5	ppm
			Option B: -40°C to +85°C	-	±0.75	±1.0	
	Frequency vs Supply		$V_{CC} \pm 5\%$	-	±0.05	±0.1	ppm
	Frequency vs Load		$C_L = 15 \text{ pF} \pm 10\%$	-	±0.05	±0.1	ppm
	Aging		First year aging	-	0.5	-	ppm
			20 years aging	-	2.5	4.0	
	Lifetime accuracy 20 years		All factors (ref. to f_o)	-	±4.0	±4.6	ppm
	Output Load	C_L	Output to Ground	-	15	-	pF
	Output Voltage Levels						
	Logic '1' Level	V_{OH}	$C_L = 15 \text{ pf}$	0.9 V_{CC}	0.95 V_{CC}	-	V
	Logic '0' Level	V_{OL}	$C_L = 15 \text{ pf}$	-	0.1 V_{CC}	0.5	V
	Output Current						mA
	Logic '1' Level	I_{OH}	$V_{OH} = 0.9 V_{CC}, V_{CC}$ @typical	-	-	-8	mA
	Logic '0' Level	I_{OL}	$V_{OL} = 0.1 V_{CC}, V_{CC}$ @typical	-	-	+8	mA
	Output Duty Cycle	SYM	@ 50% Waveform Level	45	-	55	%
	Rise and Fall Time		from 10% to 90% of waveform	-	3	6	ns
	Start Up Time	T_S	Output level to 90%	-	-	2	ms
	Enable Function	V_{IO}	Pin 2 No Connect , Output Enabled				
	Enable Input Voltage	V_{IH}	Pin 2 Logic '1', Output Enabled	0.7 V_{CC}	-	-	V
	Disable Input Voltage	V_{IL}	Pin 2 Logic '0', Output Disabled	-	-	0.3 V_{CC}	V
	Vcontrol OPTION V (0.5 V_{CC} VDC nominal)	V_c	$V_c = 0.1 V_{CC}$ to 0.9 V_{CC} Positive, monotonic slope	±9.2	±12	±18	ppm
	V_c Input Impedance	Z_{in}		100	-	-	K ohms
Phase Noise							
		10Hz	-	-85	-75	dBc	
		100Hz	-	-115	-105	dBc	
		1Khz	-	-140	-130	dBc	
		10Khz	-	-155	-145	dBc	
		Noise floor	-	-160	-150	dBc	



MECHANICAL SPECIFICATIONS



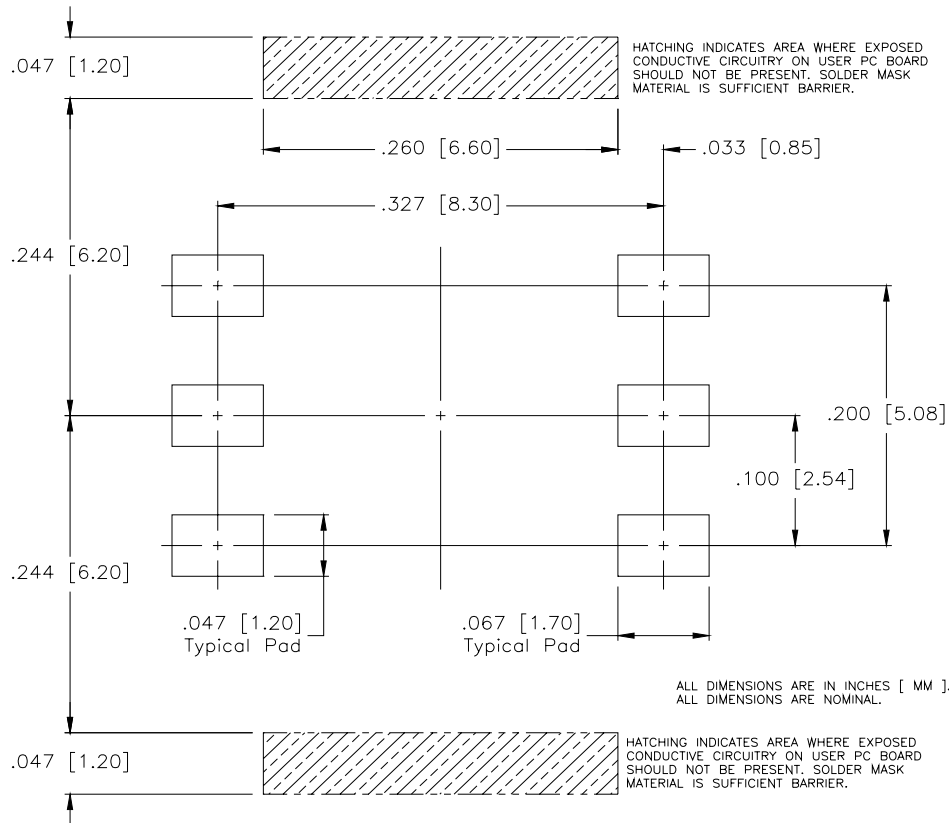
MARKING INFORMATION

1. ** - Manufacturing Site Code, XXXXX-Lot Number.
2. YYWW – Date Code, YY – Year, WW – Week.

PIN ASSIGNMENT

1. V Control or NC
2. Output Enable
3. GND
4. CMOS output
5. NC
6. V_{CC}

SUGGESTED SOLDER PAD GEOMETRY



Dimensions are in [mm] and inches.

MAXIMUM SOLDERING PROFILE

	>25°C	>100°C	>120°C	>183°C	260°C (Absolute max temperature)
Temperature	>25°C	>100°C	>120°C	>183°C	260°C (Absolute max temperature)
Time	14min	9min	6min	2.5min	10 seconds max

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

