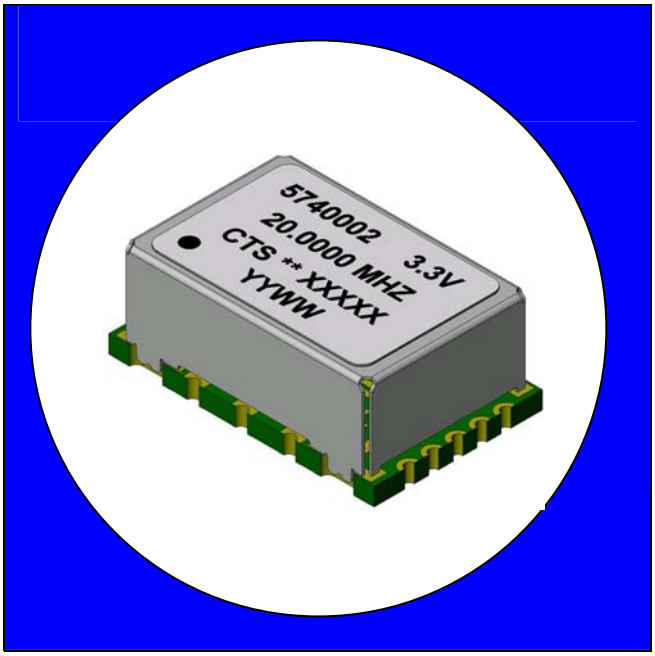
MODEL 574

Stratum 3 TCXO/TCVCXO

FEATURES

- Standard 9x14mm Surface Mount Footprint
- Output frequency from 6.4 MHz to 20 MHz
- CMOS/TTL Compatible
- Temperature Stability, ±0.280 ppm Max
- Stratum 3 Holdover per GR-1244
- +3.3 or +5 Vdc Operation
- Operating Temperature to 0°C to +70°C
- Output Enable Standard
- Electrical Frequency Adjustment Option
- Tape & Reel Packaging
- RoHS Compliant – Fully compliant to RoHS Directive 2002/95/EC



DESCRIPTION

The MODEL 574 TCXO/TCVCXO offers reduced size and enhanced stability, including Statum 3 stability and holdover per GR-1244. The small size means it is perfect for most applications. The enhanced stability means it is the perfect choice for today's communications applications that require tight frequency control.

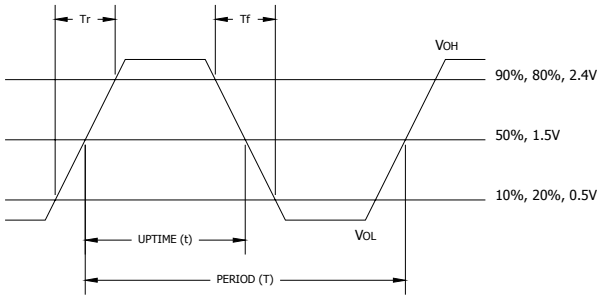
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ELECTRICAL CHARACTERISTICS

	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
	Frequency	f_O	-	6.4	10.0, 12.8, 16.384, 19.44, 20.0	20	MHz
	Initial Frequency Accuracy @ 25°C	$\Delta f/f_O$	At time of Shipment Vc @ 0.5 V_{CC} (with Vcontrol option)	-	0.1	±0.25	ppm
	Operating Temperature	T_A	-	0	25	70	°C
	Temperature Stability	$\Delta f/f_O$		-	±0.20	±0.28	ppm
	Operating Supply Voltage	V_{CC}	±5%	3.135 4.75	3.300 5.00	3.465 5.25	V
	Supply Current	I_{CC}	C_L = 15 pf Vcc +5%	-	6	10	mA
	Output Load	C_L	Output to Ground	-	15	-	pF
	Output Voltage Levels						
	Logic '1' Level	V_{OH}	C_L = 15 pf	0.9 V_{CC}	0.95 V_{CC}	-	V
	Logic '0' Level	V_{OL}	C_L = 15 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 Vcc	-	-	V
	Disable Input Voltage	V_{IL}	Pin 2 Logic '0', Output Disabled	-	-	0.3 Vcc	V
	Pushing		V_{CC} ±5%	-	±0.050	±0.100	ppm
	Pulling		C_L =15pF ±10%	-	±0.050	±0.100	ppm
	Vcontrol OPTION (0.5 V_{CC} VDC nominal)	Vc	Vc = 0.1 V_{CC} to 0.9 V_{CC} Positive, monotonic slope	±9.2	±12	±18	ppm
	Vc Input Impedance	Zin		100	-	-	K ohms
	24 hour holdover		T_A= 0°C to +70°C, V_{CC} ±5% , and 24 hours aging	-	±0.300	±0.350	ppm
	Lifetime accuracy 20 years		All factors (ref. to f_O)	-	±4.0	±4.6	ppm
	Aging						
			One Year Aging	-	0.5	-	ppm
			Twenty Year Aging	-	2.5	4.0	ppm
	Phase Noise						
			10Hz	-	-85	-80	dBc
			100Hz	-	-115	-110	dBc
			1Khz	-	-140	-135	dBc
			10Khz	-	-155	-150	dBc
			Noise floor	-	-160	-150	dBc
	Phase Jitter	tjms	Bandwidth 12 kHz - 20 MHz	-	0.4	1.0	ps RMS

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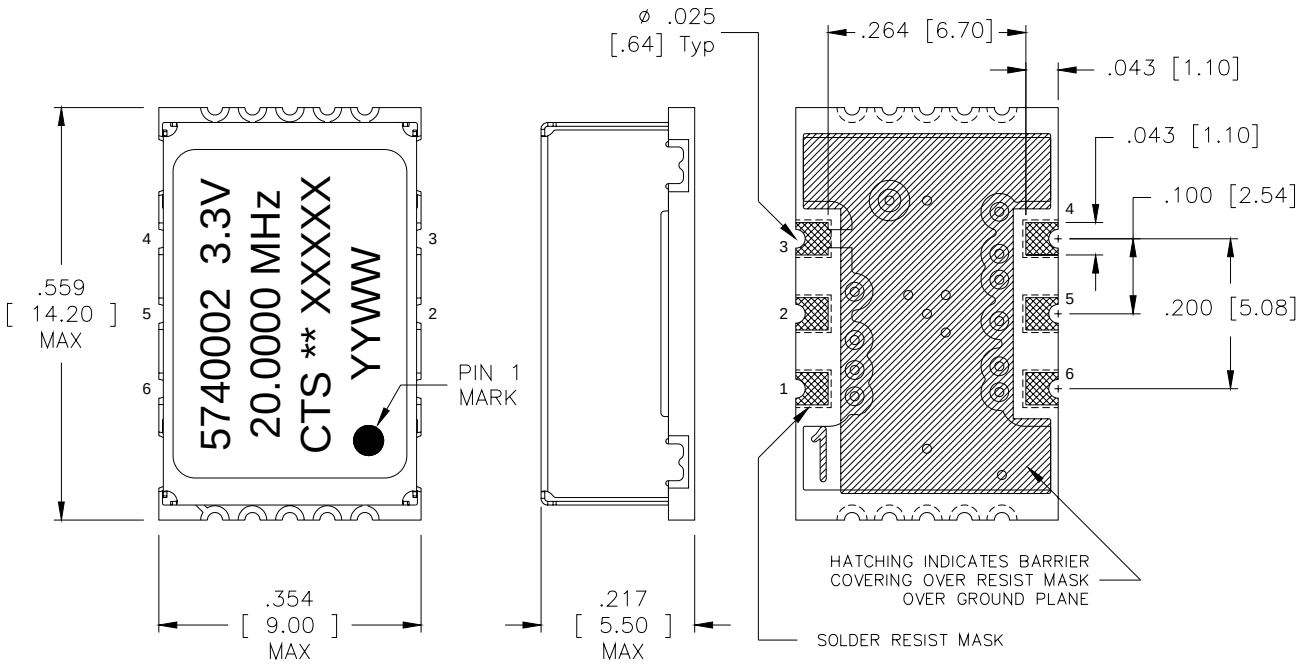
CMOS/TTL OUTPUT WAVEFORM	ENABLE TRUTH TABLE



PIN 2	PIN 4 Output
Logic '1'	Enabled
Open	Enabled
Logic '0'	Disabled

MECHANICAL SPECIFICATIONS

PACKAGE DRAWING



Pad Termination Finish: Gold Flash<10 micro inch, over Ni plated Cu

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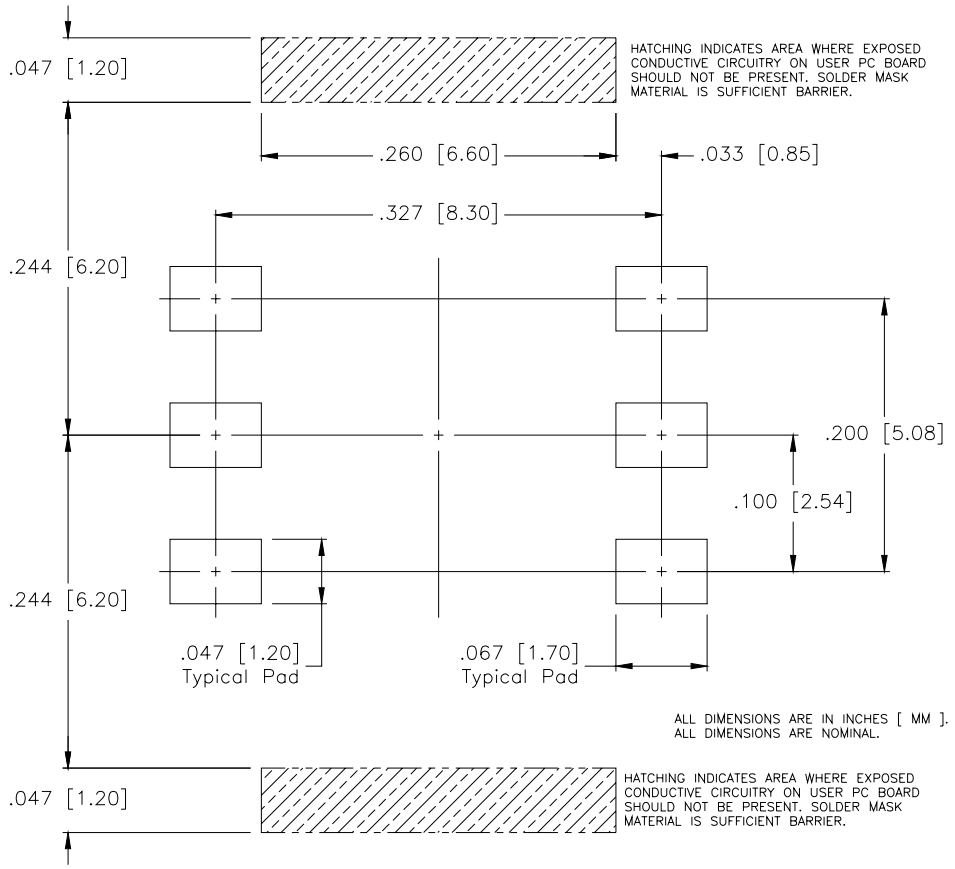
MARKING INFORMATION

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

PIN ASSISGNMENT

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.

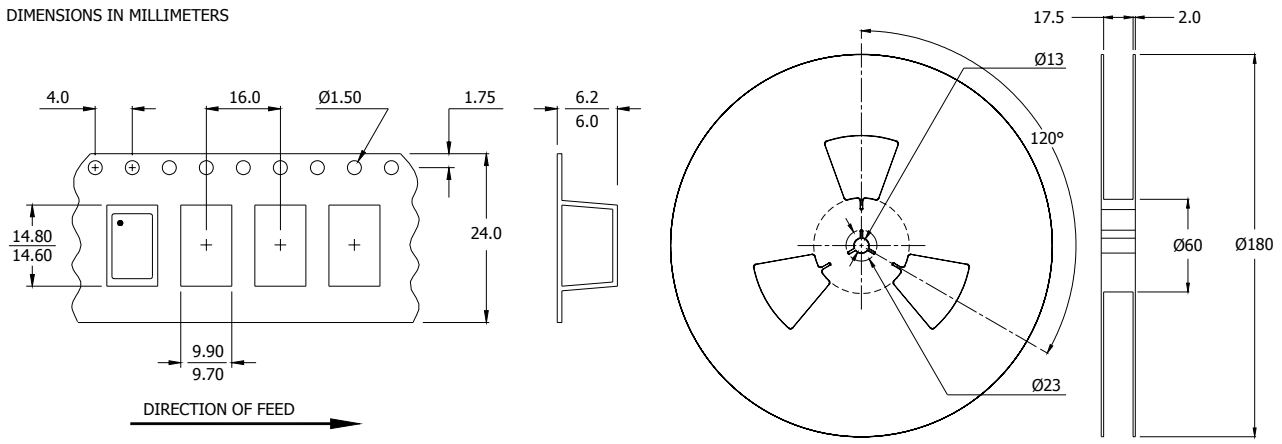
MAXIMUM SOLDERING PROFILE

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.

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TAPE AND REEL INFORMATION



Device quantity is 500 pieces maximum per 180mm reel.

ENVIRONMENTAL SPECIFICATIONS

Temperature Cycle:	400 cycles from –55°C to +125°C, 10 minute dwell at each temperature, 1 minute transfer time between temperatures.
Mechanical Shock:	1,500g's, 0.5mS duration, ½ sinewave, 3 shocks each direction along 3 mutually perpendicular planes (18 total shocks).
Sinusoidal Vibration:	0.06 inches double amplitude, 10 to 55 Hz and 20g's, 55 to 2,000 Hz, 3 cycles each in 3 mutually perpendicular planes (9 times total).
Resistance to Solder Heat:	3 reflows of +260°C peak, 10 seconds maximum per each.
High Temperature Operating Bias:	1,000 hours at +125°C, maximum bias, disregarding frequency shift.
Frequency Aging:	1,000 hours at +85°C, full bias, less than ±2 ppm shift.
MSL:	Level 1

QUALITY AND RELIABILITY

Quality systems meet or exceed the requirements of ISO 9000:2000 standards. Reliability audits are performed on this or similar products with results available upon request.

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