

ELECTRICAL SPECIFICATION

PARAMETER		VALUE
Frequency Range		96.000 ~ 160.000 MHz
Operating Temperature Range		-20°C ~ +70°C Standard -40°C ~ +85°C X -40°C ~ +125°C X1
Frequency Stability**		±20 ppm, ±25 ppm, ±30 ppm, ±50 ppm, ±100ppm
First Year Aging		±3ppm
Storage Temperature Range		-55°C ~ +125°C
Supply Voltage (Vcc), ±5%		1.8 V, 2.5 V, 3.3 V, 2.5 ~ 3.3 V
Supply Current		40 mA max
Output HCSL	Symmetry (Duty Cycle)	45 % ~ 55 %
	Rise / Fall Time	0.5 ns max at 20 % ~ 80 % output swing level
	Logic "0" Level	V _{OL} = -0.15 V min
	Logic "1" Level	V _{OH} = 0.90 V max
	Load	50 Ω
Enable / Disable Function		Pin 1: High or Open / Output enabled (Pins 4 & 5) Pin 1: Low / Output disabled (High impedance)
Output Enable Time		10 ms max
Output Disable Time		0.2 μs max
Output Swing		0.50 V min
Stand By Current		10 μA max
Start Up Time		10 ms max
Phase Jitter RMS @100MHz*		@Vcc=3.3V (12kHz ~ 20 MHz) 200 fs max
Phase Noise @100MHz, Vcc=3.3V* typ	@ 10Hz	-80 dBc/Hz
	@ 100Hz	-105 dBc/Hz
	@ 1kHz	-130 dBc/Hz
	@ 10kHz	-144 dBc/Hz
	@ 100kHz	-152 dBc/Hz
	@ 1MHz	-155 dBc/Hz
	@ 10MHz	-158 dBc/Hz

Note: *The Phase Noise/Jitter value varies with frequency and supply voltage.

Note**: Not all Stabilities are available for all operating temperature ranges. See the table below.

STABILITY AVAILABLE AT EACH OPERATING TEMPERATURE

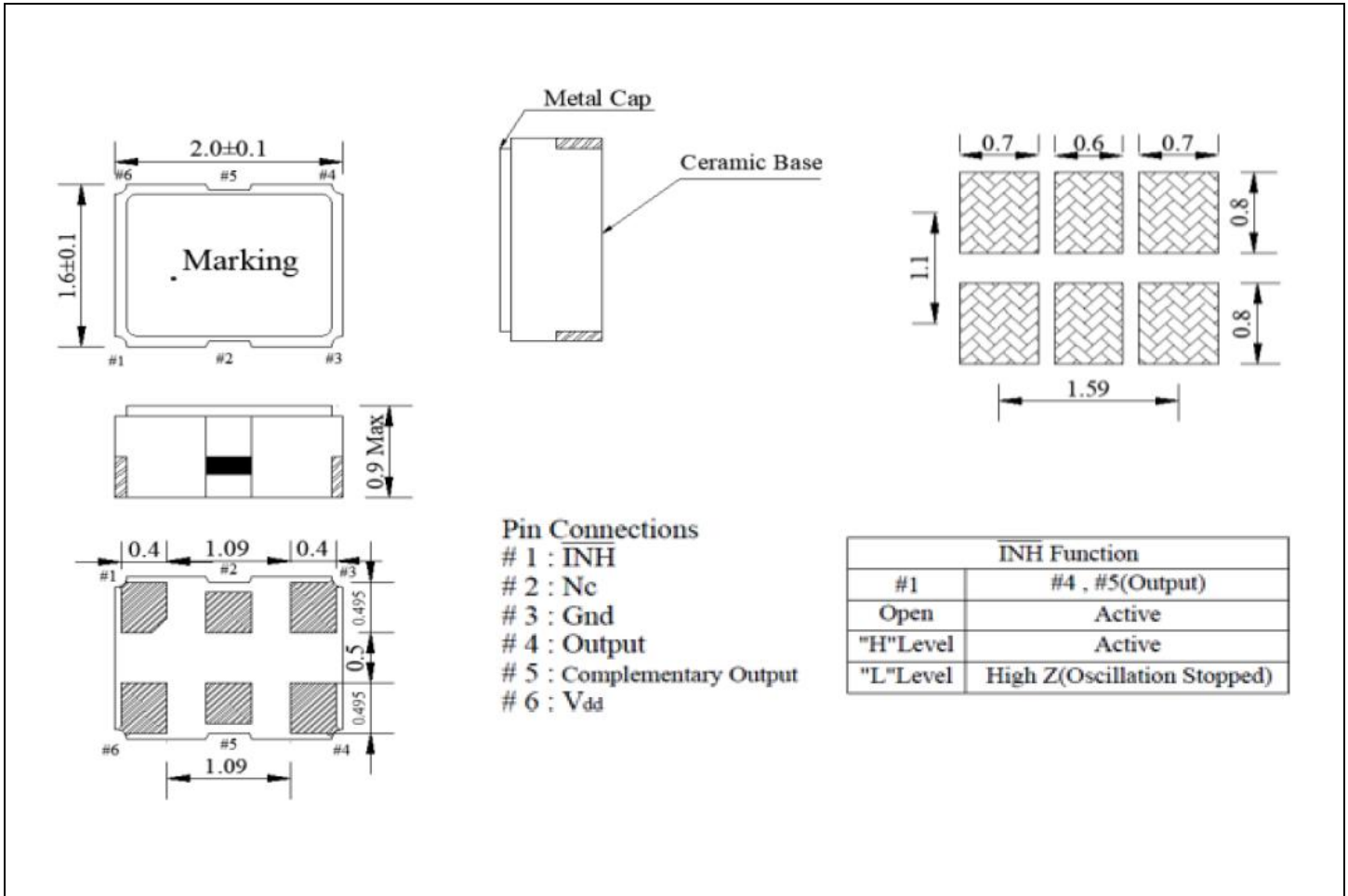
	-20°~70°C	-40°~85°C	-40°~100°C	-40°~105°C	-40°~125°C
±20ppm	●	▲			
±25ppm	●	●			
±30ppm	●	●	▲	▲	
±50ppm	●	●	●	●	▲
±100ppm	●	●	●	●	●

Inclusive of 25° Tolerance, Operating Temperature Range, Voltage & Load Variations

●: Available

▲: Contact for availability

MECHANICAL SPECIFICATION



Pin Connections

- # 1 : INH
- # 2 : Nc
- # 3 : Gnd
- # 4 : Output
- # 5 : Complementary Output
- # 6 : V_{dd}

INH Function	
#1	#4 , #5(Output)
Open	Active
"H"Level	Active
"L"Level	High Z(Oscillation Stopped)

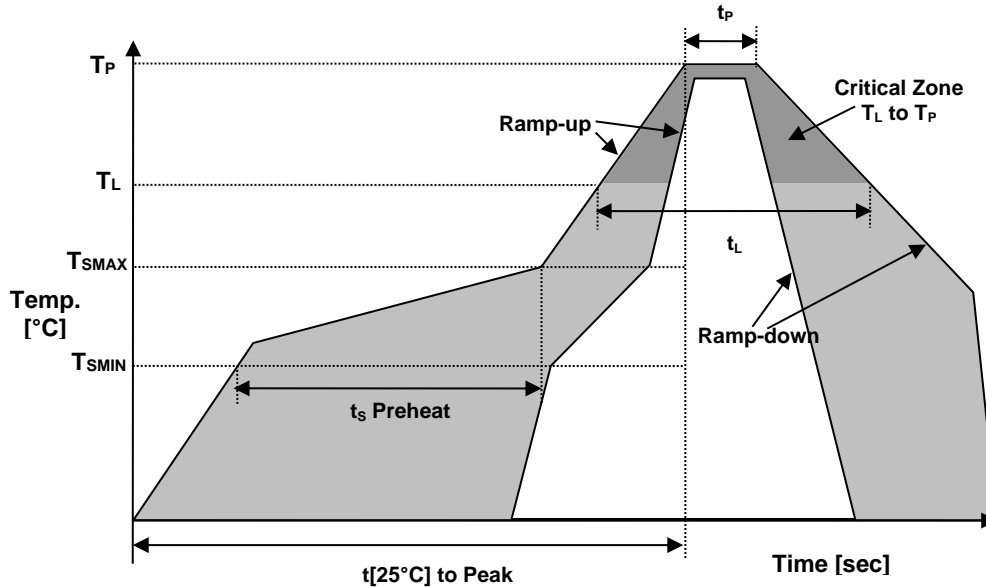
PART NUMBERING SYSTEM

TYPE	SERIES	FREQUENCY (MHz)	SUPPLY VOLTAGE (V _{cc})	STABILITY (ppm)	TEMPERATURE RANGE (°C)	SYMMETRY (Duty Cycle)	TAPE & REEL
Clock Oscillator CH	2016	13.500 ~ 96.000 MHz	1.8: V _{cc} =1.8 2.5: V _{cc} =2.5 3.3: V _{cc} =3.3 L: V _{cc} =2.5~3.3	20: ±20 ppm 25: ±25 ppm 30: ±30 ppm 50: ±50 ppm 100: ±100 ppm	blank: -20°C to +70°C X: -40°C to +85°C X1: -40°C to +125°C	T: 45 to 55%	TR

EXAMPLE: CH2016-50.000-3.3-100-X-T-TR

Surface Mount CHF2016 HCSL Oscillator, 2.0 x 1.6 mm, 50.000 MHz, 3.3 VDC Supply Voltage, ±100 ppm Stability from -40°C to +85°C, Symmetry 45% to 55%, Tape and Reel Packaging.

■ **REFLOW PROFILE**



Reflow profile		
Temperature Min Preheat	T_{SMIN}	150°C
Temperature Max Preheat	T_{SMAX}	200°C
Time (T_{SMIN} to T_{SMAX})	t_s	60-180 sec.
Temperature	T_L	217°C
Peak Temperature	T_P	260°C
Ramp-up rate	R_{UP}	3°C/sec max.
Ramp-down rate	R_{DOWN}	6°C/sec max.
Time within 5°C of Peak Temperature	t_p	10 sec.
Time $t_{[25^\circ\text{C}]}$ to Peak Temperature	$t_{[25^\circ\text{C}]}$ to Peak	480 sec.
Time	t_L	60-150 sec.

■ **ENVIRONMENTAL**

PARAMETER	VALUE
MOISTURE SENSITIVITY LEVEL	1
REACH SVHC	COMPLIANT
RoHS	COMPLIANT
TERMINATION FINISH	Au

