

**ELECTRICAL SPECIFICATION**

PARAMETER		VALUE
Frequency Range		27.000 ~ 220.000 MHz
Operating Temperature Range		-20°C ~ +70°C Standard -40°C ~ +85°C X -40°C ~ +125°C X1
Frequency Stability**		±20 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 1.8V/ 2.5V/ 3.3V		35/ 40/ 40 mA max
Output HCSL	Symmetry (Duty Cycle)	45 % ~ 55 %
	Rise / Fall Time	0.6 ns max at 20 % ~ 80 % output swing level
	Logic "0" Level	V <sub>OL</sub> = -0.15 V min
	Logic "1" Level	V <sub>OH</sub> = 1.0 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
Output Disable Time		200 ns
Output Swing		0.50 V
Stand By Current		10 μA
Start Up Time		10 ms
Phase Jitter RMS @100MHz* @Vcc=3.3V (12kHz ~ 20 MHz)		200 fs
Phase Noise @100MHz, Vcc=3.3V*	@ 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**

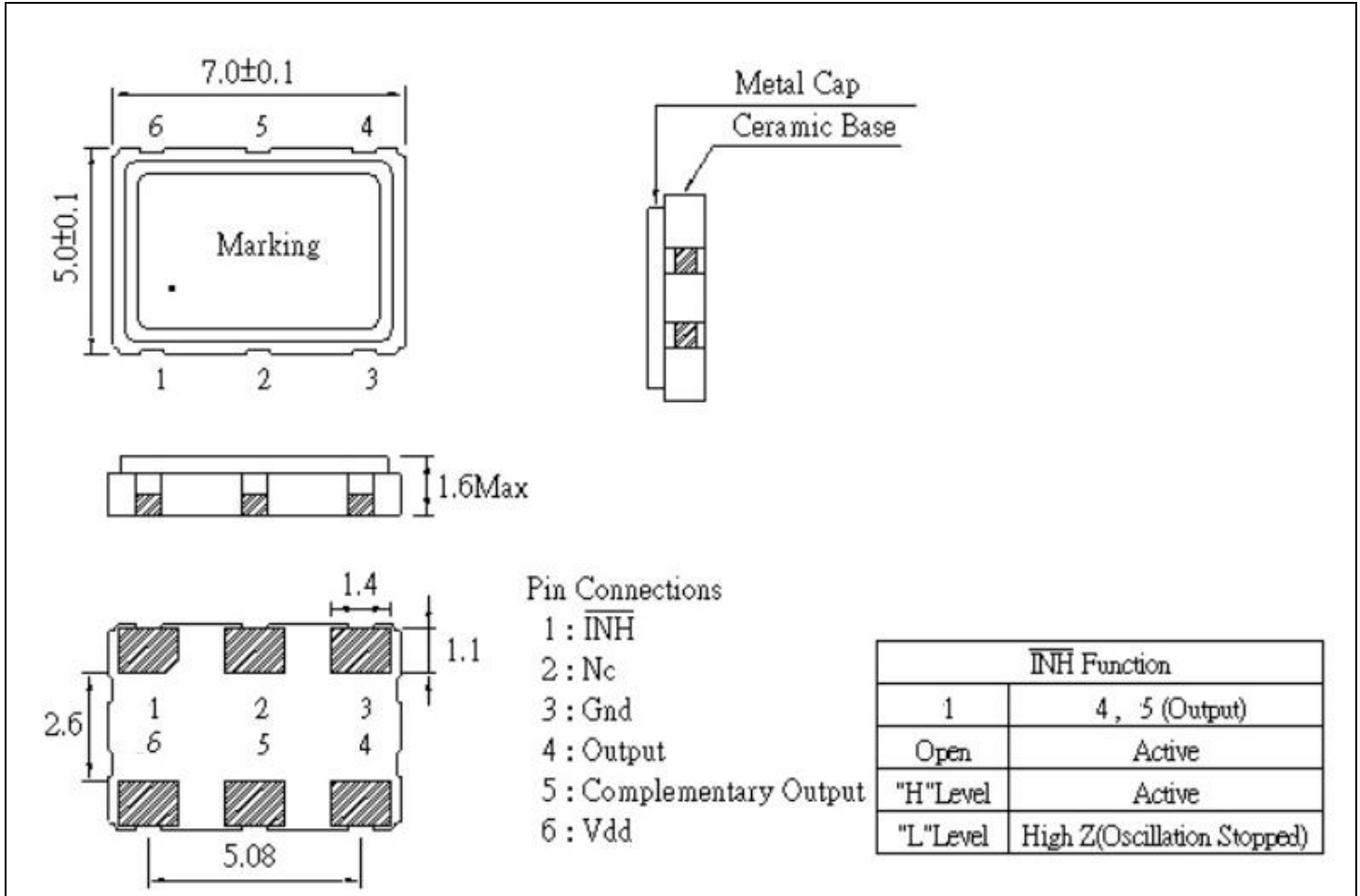
	-20°~70°C	-40°~85°C	-40°~100°C	-40°~125°C
±20ppm	●	▲		
±25ppm	●	●		
±30ppm	●	●	▲	
±50ppm	●	●	●	▲
±100ppm	●	●	●	●

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

●: Available

▲: Contact for availability

■ MECHANICAL SPECIFICATION



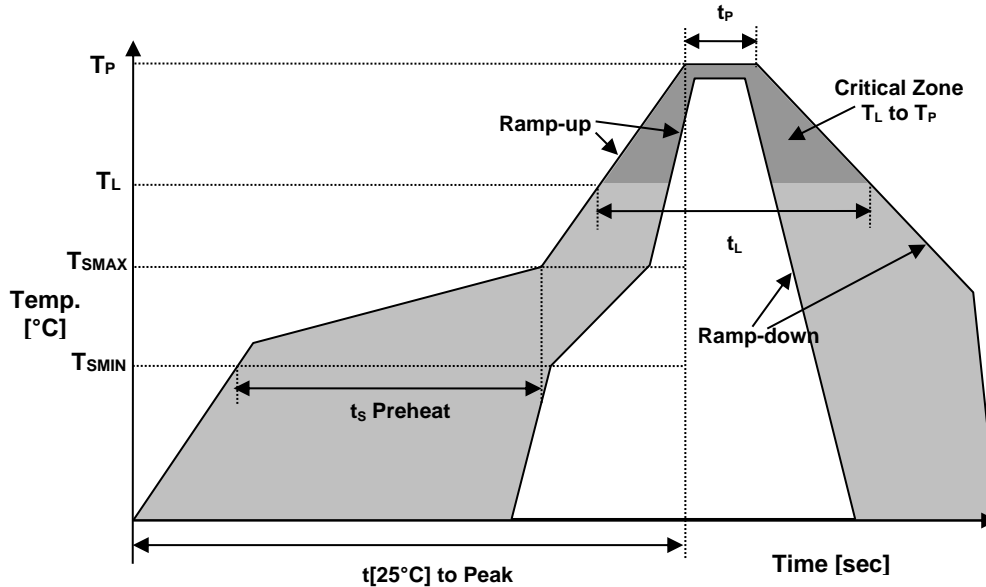
■ PART NUMBERING SYSTEM

TYPE	SERIES	FREQUENCY (MHz)	SUPPLY VOLTAGE (Vcc)	STABILITY (ppm)	TEMPERATURE RANGE (°C)	SYMMETRY (Duty Cycle)	TAPE & REEL
Clock Oscillator CH	7050	27.000 ~ 220.000 MHz	1.8: Vcc=1.8 2.5: Vcc=2.5 3.3: Vcc=3.3 L: Vcc=2.5~3.3	20: ±20 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: CH7050-100.000-3.3-100-X-T-TR**

Surface Mount CH7050 HCSL Oscillator, 7.0 x 5.0 mm, 100.000 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



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